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## Harmony An Architecture For Network Centric Heterogeneous Terrain Database Re-generation

Benito Graniela  
*University of Central Florida*



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HARMONY: AN ARCHITECTURE  
FOR NETWORK CENTRIC HETEROGENEOUS  
TERRAIN DATABASE RE-GENERATION

by  
BENITO GRANIELA  
PhD University of Central Florida, 2011

A dissertation submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy  
in the Department of Modeling and Simulation  
in the College of Graduate Studies  
at the University of Central Florida  
Orlando, Florida

Fall Term  
2011

Major Professor: Michael Proctor

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## **ABSTRACT**

Homogeneous proprietary online terrain databases are prolific. So also is the one directional generation and update process for these terrain databases. The existence of architectures and common ontologies that enable consistent and harmonious outcomes between distributed, multi-directional, heterogeneous terrain databases are lacking. Further due to technological change that empowers end-users, the expectations for immediate terrain database update are constantly increasing. As an example, a variety of incompatible synthetic environmental representations are used for military Modeling and Simulation applications. Regeneration and near-real-time update of compiled synthetic environments in a distributed, heterogeneous run time environment is an issue that is relevant to correlation of geospecific representations that are optimized for live, virtual, constructive and distributed simulation applications. Military systems of systems like the Future Combat Systems are emblematic of the regeneration challenge. The battlefields of the future will need constant updates of diverse synthetic representations of the real world environment. These updates will be driven by near real-time data from the battlefield as well as other constantly evolving intelligence and remote sensing sources.

Since the Future Combat Systems will use embedded training, it will need to maintain a representation correlated with the actual battlefield as well as many other systems. To

achieve this correlation, constant updates to the heterogeneous synthetic environment representations in the Future Combat Systems platforms will be required. An approach to overcoming the implicit bandwidth and communication limitations is to limit updates to changes only.

Today's traditional military Terrain Database (TDB) generation systems convert standard geographical source data products into many different target formats using what is referred to as pipeline flow paradigm. In the pipeline paradigm, TDBs are originally generated centrally upstream and flow downstream out to numerous divergent and distributed formats. In the pipeline paradigm, updates are centrally managed and distributed. This pipeline paradigm does not account for updates occurring on target formats and therefore such updates are not reflected upstream on the source data that originally generated the TDB. Since target format changes are not incorporated into the upstream geographical source data, adjacent streams of dependent target formats derived from the same geographical source data may not receive the changes either. The outcome of change in the pipeline TDB generation systems paradigm is correlation and interoperability errors between target formats as well as between the original upstream data source.

An alternative paradigm that addresses data synchronization of geographical source data and target formats while accommodating bandwidth limitation is needed. This

dissertation proposes a “partial bi-directional TDB regeneration” paradigm, which envisions network based TDB updates between reliable partners. Partial bi-directional TDB regeneration is an approach that is very attractive as it reduces the amount of changes by only updating the affected target format data element.

This research, presents an implementation of distributed, partial and bi-directional TDB regeneration through agent theory and ontologies over a network. Agent theory and ontologies are used to interpret data changes on external target formats and implement the necessary transformations on the Internal TDB generation system data elements to achieve consistency between all correlated representations. In this approach a variety of agents will exist and their behavior and knowledge will be customized based on ontologies that describe the target format. It is expected that such a system will provide a TDB generation paradigm that can address the implicit issues of: distribution, time, expertise, monetary, labor-constraints, and update frequency, while addressing the explicit issue of correlation between the external targets formats over time and at the same time reducing bandwidth requirements associated with traditional TDB generation system.

## **DEDICATION**

I dedicate my dissertation work first of all to GOD for giving me the perseverance and strength to continue working towards my goal even when it seemed unachievable. To my late grandmother Carmen Camacho de Graniela who early on my childhood taught me about right and wrong, personal responsibility and commitment to always reach higher. I wish she could be here to share this important milestone with me. I also dedicate this dissertation to my loving wife Nilda for being there for me throughout the entire doctorate program. I am blessed to have her as my life partner.

## **ACKNOWLEDGMENTS**

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## LIST OF ACRONYMS AND TERMS

API	Application programmers interface.
back-end	Process at the beginning of the TBD generation system which transforms the external source data into a format the TDB generation system understands.
FLT	OpenFlight
FCS	Future Combat Systems
front-end	Process at the end of the TBD generation system which transforms the internal TDB generation system representation into target formats.
GIS	Geographic Information System
Internal TDB Repository	Repository of terrain databases
Interoperability	For purpose of this dissertation interoperability of distributed systems is achieved if the perception of the same events by the different systems is similar thus enabling these systems work together to achieve a common goal.
LTF	Live Terrain Format
M&S	Modeling and Simulation
OTF	OneSAF Terrain Format
OWL	Ontological Web Language
prototype architecture	Bi-Directional partial Terrain Database Architecture
target format	Optimized runtime terrain database format which is compiled from an editable internal data structure into a platform-specific data structure that a particular target system expects. Also



referenced as runtime format.

TDB                    Abbreviation for terrain database

TDB API              Terrain database application programmers interface. This interface provides a common set of functions for target format front-end (read) and back-end (write) functions.

terrain  
database              Geospatial data compiled into a database which is used for computation and rendering purposes (Mamaghani 1995) also referenced as TDB.

## **CHAPTER 1: INTRODUCTION**

While homogeneous often proprietary online terrain databases are prolific, the existence of architectures and common ontologies that enable consistency between distributed, heterogeneous terrain database are both lacking and are in constant change.

Regeneration and near-real-time update of compiled synthetic environments in a distributed, heterogeneous run time environment is an issue that is relevant to correlation of geospecific representations that are optimized for live, virtual, constructive and distributed simulation applications. Military systems of systems like the Future Combat Systems are emblematic of the regeneration challenge. The battlefields of the future will need constant updates of diverse synthetic representations of the real world environment. These updates will be driven by near real-time data from the battlefield as well as other constantly evolving intelligence and remote sensing sources.

Traditional uses and expectations for a military modeling and simulation terrain database (TDB) have evolved over time and are quite demanding for a wide variety of applications. As the uses of TDB evolve, the traditional pipeline TDB generation systems must evolve to keep pace with the demands and expectations for terrain databases.

This is particularly important on large and complex systems which contain different spatial representation of the operating environment. Differences in system representation also arise from what DARPA refers to as “modeling languages either address narrow domains, or avoid or neglect multi-physics and multi-domain interactions, or leave significant leeway in semantic interpretations.” (DARPA BAA 11-47, 2011).

The benefit of collections of independent systems is that they bring together resources and capabilities of disparate but unique and beneficial solutions to obtain a new complex system which offers more functionality and performance than the sum of the parts (Maier 2005).

Emblematic of evolving system of systems, TDB demands and expectations are those associated with the U.S. Army Future Combat Systems. Representing one of the most fluid applications of terrain databases, this next generation combat systems envision using training systems embedded within actual combat systems (Cioch 2003, Kozlowski et al. 2001, Shufelt 2006).

Through simulation and the use of digital representations of actual geographical locations, these embedded training systems anticipate enabling individual and unit training, mission planning, and rehearsal involving large numbers of systems. The

nature of mission planning and rehearsal implicitly drives requirements for distributed, frequent, inexpensive, time-constrained, and labor and expertise-limited terrain database updates. Enabling networking and distributed processing technologies continue to grow and develop offering major resources to address these implicit requirements. Conversely the same network and distributed processing technologies also drive an increasing need to acquire and process greater and more diverse information requirements needed to support training, mission rehearsal, and planning demands (West 2007)

In terms of environmental representation, the wide diversity of Future Combat System applications envisions using a combination of TDB representations. It is expected that today's synthetic environments will need to evolve so they can be used for both operational Command and Control applications as well as for training applications (Shufelt 2006, Surdu J.R. 2000). A synthetic environment representation of the battle space that is suitable for common use by both traditional as well as non-traditional mission planning and rehearsal applications will require the ability to be rapidly updated by a widely distributed and non-homogenous group of users and sensors distributed throughout the mission space.

Consistent with this vision, synthetic environment updates will be generated from satellite pictures, data from manned ground vehicles, unmanned ground vehicles and

unmanned air vehicles, battle field sensors as well as other sources of intelligence and future platform sensors (Shufelt 2006, Cox 2009). In this view, battle space geospatial information will most likely be stored in common Command and Control data models and provide updates to runtime TDB representations on operational platforms across the battlefield.

### **Overview of the Problem**

Given a heterogeneous and dynamic terrain modeling environment, frequent updates to heterogeneous terrain databases will be needed to support consistent situation awareness within a distributed simulation environment. With increasingly distributed data collection capabilities, where information will be acquired, processed, posted, and used as needed by a variety of distributed systems, an architecture and common ontology is needed to support partial and bi-directional updates by any trusted entity to all official members within network (Miller et al. 2004, Osterholz 2005)

The current TDB generation process is not setup for frequent and partial updates of nodes in a network of distributed terrain databases being used by non-homogeneous, interoperating simulations. For example, the current objective for rapid TDB generation for the U.S. military is 72 hours (Shufelt 2006). As it will be presented latter on this chapter, the current TDB generation system is a pipeline processes that is primarily driven by geographic source data and this production pipeline cannot accept incremental changes made by one or more local downstream target database.

To incorporate correlated changes at downstream points, the current TDB generation pipeline system must translate the changes into geographic source data that can be processed upstream. Once processed upstream, then changes can flow downstream.

### **Research Question**

This dissertation examines the general research question:

What is the appropriate terrain database generation system that will achieve correlated TDB representation among a distributed network of trusted, partnering, simulations given the implicit and explicit conditions of: global distribution; bandwidth, time, expertise, monetary, and labor constraints; and increased update frequency?

The frequency of environmental updates in network-centric Command and Control requires a representation that can be easily updated. Embedded training utilize an environment representation which requires more pre-processing that those currently used by Command and Control. This data integration requires extra processing which will need to be limited in embedded training platforms. In addition, network bandwidth on network-centric warfare requires careful management to avoid network overload. This leads to the need for smaller and frequent updates.

Current TDB generation updates are performed at the block or geo-tile level which requires large blocks of information to be transmitted as updates over the network. Thus, the current TDB generation pipeline does not efficiently address the use of a network-centric task, post, process, and use update (Osterholz 2005) nor does it provide bidirectional feature updates.

While one may currently manually perform updates of the various TDB formats in the cloud of network simulations, this current default approach is expensive, time-consuming, and labor-intensive (Polis 1995). Furthermore, experts in the techniques to update each of the various TDB formats are needed.

To overcome these implicit and explicit liabilities in the current TDB paradigm, a network centric TDB generation paradigm with modification feedback from trusted partners is introduced below. Embedded within the new TDB generation paradigm is a system that uses agents and ontologies to recognize the changes on the TDB and efficiently update the TDB generation originator and subsequently other internal and external partner representations.

Research is needed to capture the TDB ontological structure and component descriptions into a knowledge base which can be used by agents to recognize TDB modifications. The TDB structure and component ontological descriptions should allow

for agents to know how the structure and components of different TDB are affected as modifications are introduced. The main goal of this new partial bi-directional TDB generation paradigm will be to continuously improve the correlation between heterogeneous TDB representations of trusted partners thus enabling the possibility of continuous and correlated interoperability.

### **Notional Hypotheses**

This research assumes that future applications will require new automatic TDB generation systems which can support incremental updates of heterogeneous and large extents terrain databases in a timely manner while maintaining correlated if not consistent representations across live, virtual and constructive simulations.

The general assumption is that in real-time, distributed simulations, TDB updates should be limited to changes in the terrain database rather than the traditional approach of changing large portions or even the entire terrain database.

The hypothesis for this research is that

Partial bi-directional target format regeneration approach shall reduce network utilization and regeneration processing times from the traditional database update paradigm while maintaining consistency between heterogeneous terrain databases distributed across the simulation network.



This research explores the use of ontologies and agents to support partial target format regeneration and therefore support frequent and bi-directional updates on distributed simulation.

### **Problem Domain & Background**

Systems of systems are a collection of systems that can function independently or collectively. There are many definitions for System of Systems (Sage 2001, Maier 2005, Boardman 2006, DeLaurentis 2005), DeLaurentis (DeLaurentis 2005) defines systems of systems as;

“System of systems problems are a collection of trans-domain networks of heterogeneous systems that are likely to exhibit operational and managerial independence, geographical distribution, and emergent and evolutionary behaviors that would not be apparent if the systems and their interactions are modeled separately.”

A system of systems is a mix of multiple systems, which are capable of independent operation and which collaborate with each other in order to fulfill a common goal. The individual systems within the system of systems are not necessarily designed to work together. In system of systems the geospatial models within the individual systems may

not be the same. However, when they are pulled together the system within the system of system must share a common representation of the synthetic environment.

The Future Combat System was selected as a representative system of systems application to demonstrate how TDB generation can be improved. Other similar systems of system like the Intelligent Transportation System, storage-less operation centers and space exploration initiative (Maier 2005) may also benefit from similar advances. The Future Combat System combines different independent networked systems which use heterogeneous geospatial representation of the synthetic environment.

Synthetic environments are used to support training, research, product development, advanced concept exploration and military operations like mission planning, rehearsal and battlefield visualization. In order to represent infinite reality within a finite representation a simulation needs to identify, generate and organize its synthetic environment representation to suit the specified simulation objectives and efficiently fulfill its requirements. As we evolve into a network-centric operational environment that has available embedded training capabilities on operating platforms, the requirement for traditional training terrain database and its generation will likewise need to evolve.

The following sections present a brief overview of the Command and Control and M&S battle space synthetic environments with emphasis on the terrain database. The

information presented is not an exhaustive description of the environment characteristics but rather it provides enough information to illustrate the importance and need for TDB generation which can address the emerging requirements for distributed, frequent, time-constrained, labor-intensive, expertise-limited terrain database updates. Similar requirements are shared by other fields, systems and applications like homeland security, transportation, exploration of other planets, and under water applications.

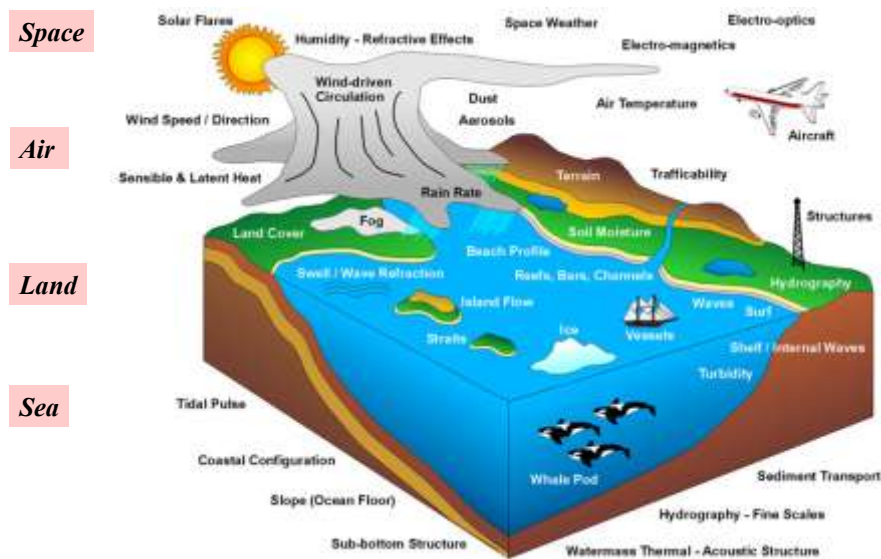


Figure 1 - The Environmental Representation (ISO/IEC 18025)

### ***Command and Control and Geographic Information Systems***

Command and Control of military operations are largely dependent on the availability of accurate information. One of the information components is the environment or

environmental representation. The DoD M&S Glossary (DoD 5000.59-P 1998) defines “environmental representation” (P2.5.20) as;

“An authoritative representation of all or a part of the natural or man-made environment, including permanent or semi-permanent man-made features.”

As it is shown on Figure 1 an environmental representation includes geo-referenced information relevant to the mission that includes air, land, sea, and space.

“Environmental effects” and “environmental effects models” are not addressed in this dissertation. “Environmental effects” (Glossary, 1998: p 2.5.15) are “the impact that the natural environment or environmental feature has on some component or process in the simulation.” Hieb (Hieb et al. 2007) separates effects by the environment on military operations into those which are (1) related to the terrain topology and elevation only, (2) those which are related to the direct and indirect impact of weather, (3) and those which occur as a result of the interactions at the boundary between the terrain and weather.

This dissertation does not address the “environmental effect models” (Glossary, 1998: P2.5.16) that simulate “a natural environmental effect on an entity of a simulation exercise.” Although all of these interactions and representations are important, this dissertation concentrates on the representation of synthetic environment which describes the terrain topology, elevation and the natural and man-made features that exist on the terrain surface.

Geographic spatial information supports Command and Control (Hieb et al. 2007) through a variety of applications including cartography, intelligence, battle field management, terrain analysis, remote sensing, military installation management, and monitoring of enemy and terrorist activity. This information is normally stored in digital databases called Geographic Information System or GIS (Hieb et al. 2007, Kleiner et al. 2007). GIS is a special kind of information system which specializes on the input, storage, manipulation, and output of geographic information. According to Chrisman (Chrisman 1999) there are many different definitions for GIS. In his review of GIS definitions, Chrisman (Chrisman 1999) provides three different points of view for GIS; a system flow view, a content view and a toolkit view. A system flow definition of GIS is provided by Dueker and Kjerne (Dueker and Kjerne 1989, p 7±8) as;

“A system of hardware, software, data, people, organizations and institutional arrangements for collecting, storing, analyzing and disseminating information about areas of the earth”.

In this view GIS is a system which is composed of hardware, software, and people which are used for the collection, storage, analysis, and distribution of information. An implied process of collection, storage, analysis and distribution is provided in this definition. In this implied process flow, spatial data about the earth is collected or

measured from maps and or by remote sensors like satellites and Light Detection and Ranging (LIDAR) sensing technology. Once collected the data is cataloged, organized and stored in a form which can be efficiently access. Then the analysis process, transforms the internal system data into other forms. This analysis process maybe the detection of changes in a particular area to determine changes in vegetation due to drought, global warming and other phenomena. But this spatial data is not only stored but it is also distributed by the system. This definition makes a distinction between the data which is stored in the system and the data provided. For example, GIS may contain data that describes terrain elevation, roads, rivers, vegetation and building in a geographical area stored as vector data. In addition the GIS may provide to the users digital or paper map representations of this internal data.

The problem with this definition is that it provides very little description of the information that is contained in GIS itself. Of course, GIS is about geography and spatial information. A definition which provides a description of the data content of a GIS is provided by Star and Estes (Star and Estes 1990, p 2±3) as;

“An information system that is designed to work with data referenced by spatial or geographic coordinates. In other words a GIS is both a database system with specific capabilities for spatially-referenced data, as well as a set of operations for working with the data”.

This definition of GIS enhances the reference to the geographic content within the information system provided by Dueker and Kjerne and does not limit GIS to the earth. The terms spatial and geographic differentiates GIS database from other information system. A more recent definition on GIS is provided by the US Geological Survey 1997;

“In the strictest sense, a GIS is a computer system capable of assembling, storing, manipulating, and displaying geographically referenced information, i.e. data identified according to their locations. Practitioners also regard the total GIS as including operating personnel and the data that go into the system (US Geological Survey 1997).”

In this definition the US Geological Survey removes the measure or captures process from GIS and concentrates on the assembling, storing, analysis and display process. This definition fits within the US Geological Survey context of operation by de-emphasizing the measurements and analysis components presented on the previous definitions.

In military applications one of the most important functions of GIS along with satellite imagery is to understand and interpret terrain (Kleiner et al. 2007). Terrain analysis plays a major role in determining how troops can be deployed. Understanding the

battlefield landscape is especially useful to the military leader as it helps determine strategic positions, such as ideal locations for scouting parties, support fires and more (Hieb et al. 2007, Kleiner et al. 2007, Laskey et al. 2007). In this context GIS is a tool for helping commanders to visualize how the geography may affect different military courses of action.

The digital databases in GIS facilitate the creation of different types of maps that meet specific user needs. These internal geospatial databases contain multiple independent thematic layers of information about a geographic area. Each thematic layer in a geospatial database groups common geographical elements. Traditionally, each thematic layer may use different representations which can be categorized as vector and raster data. Vector data is described by features in the form of points, lines, and polygons. Raster data is used to represent arrays or grids of data values and images. Thematic layers in GIS represent and answer questions about a particular problem such as how mobility is affected by obstacles as described by hydrology, vegetation and transportation infrastructure. This mobility information can then be used by the commanders to develop the most advantageous course of action. Layering and visualizing these thematic layers for the creation of maps as well as other overlays is a regular task which comprises the primary use of GIS tools by the military today (Kleiner et al. 2007).



Nonetheless, command and control of military operations of the future will be more complex and will use network-centric strategies (West 2007, Cox 2009, Osterholz 2005, Hieb et al. 2007, Miller et al. 2004). Network-centric warfare describes a combination of strategies, emerging tactics, techniques, procedures, and organizations that create a decisive war-fighting advantage (Osterholz 2005). Network-centric warfare equips war-fighters with the ability to access the information they need at the right time to make the right decisions (Hieb et al. 2007).

Cebrowski (Cebrowski 2003) describes the Network Centric Warfare most important components as information superiority, shared awareness, adaptability, speed of command, and self-synchronization. When combined, these components lead to the neutralization of the opponent's intentions. Information superiority and shared situation awareness requires relevant, accurate and timely information which provide a common operational picture (West 2007, Cebrowski 2003). This allows for identification, location, tracking and attack of the right targets at the right time. The identification, location and tracking of targets are functions of spatial information. However, too much information can also cause information overload on humans and hinder the performance of military operations. Information overload is avoided by limiting information to smaller chunks of relative, accurate, and timely updates (Hieb et al. 2007, Cebrowski 2003).

Smaller and relevant information updates, not only helps reduce system overload but also helps preserve network bandwidth. In this future network-centric, operational-environment users will be able to seek the context relevant information they need across the battle space through “smart-pull”. This “smart-pull” process is described by the verbs task, post, process, and use (TPPU) (Cox 2009, Osterholz 2005, Miller et al. 2004). The process used today is a task, process, exploit, disseminate or TPED approach which limits exploitation of the information by not posting information until it is processed. The TPED concept is giving way to this new TPPU paradigm which provides information from the producer to the consumer as it becomes available (Cox 2009, Osterholz 2005). The TPPU concept leverages service oriented architecture technology concepts and connectivity to improve the speed and quality of military decision making. Thus, the war-fighters of the future have the potential to search and have access to relevant geospatial information for an operation as it becomes available on the battlefield.

In this future view of the operational environment; geographical information will be available continuously and on demand. GIS will play larger role as part of Command and Control (Cox 2009, Miller et al. 2004) and updates to a variety of different battle space environment representations will be needed. In the future terrain reasoning, modeling and Simulation (M&S) and smart computer agents will play a bigger role in planning, mission rehearsal and training.

## ***M&S Synthetic Environments***

Most of the military skills training today rely on synthetic environments that are generated offline from value added geographic source data similar to that used by Command and Control application. Live, virtual and constructive simulations are currently used to train individual tasks, crew drills and collective and combined arms tasks. The current limitation of these training systems is the lack of full interoperability between live, virtual and constructive applications (Shufelt 2006). Current research and development on projects like the Future Combat System (FCS) and SE-CORE are expected to address these challenges by providing training and tools that closely replicate the network-centric, operational-environment (Shufelt 2006). For example, SE-CORE is expected to provide a common virtual training environment which can support training of a variety of different simulations as well as rapid terrain database generation tools. FCS is expected to leverage this ARMY common virtual training capabilities for soldier and unit training to support and for the generation of live, virtual and constructive training and environments (Shufelt 2006).

Traditionally geographic source data in the form of vector and raster data is processed and converted into multiple database representations or target formats that can support

training requirements. As a matter of fact GIS plays a large role in the processing of geospatial source data for TDB generation.

In contrast to the operational environments, synthetic environments for skills training can be consider as static geo-typical representations of the battlefield. Mission rehearsal applications are perhaps the most dynamic synthetic environments in M&S. TDB for mission rehearsal are updated to reflect the state of the environment at the time of the mission. TDB updates for mission rehearsal range from 24 hours to several days.

In contrast to operational environments, M&S synthetic environment representations require more time to develop and integrate into a coherent and consistent representation. More time is needed, because higher level of detail and higher resolution models and simulations are normally used. Also the use of multiple heterogeneous and network representations require additional considerations.

In 1998 Davis (Davis 1995) described the DoD classification of simulations as live, virtual and constructive. The DoD M&S Glossary (DoD 5000.59-P 1998) defines virtual simulation (P2.12.8) as;

“A simulation involving real people operating simulated systems. Virtual simulations inject human-in-the-loop in a central role by exercising motor control

skills (e.g., flying an airplane), decision skills (e.g., committing fire control resources to action), or communication skills (e.g., as members of a C4I team).”

These virtual simulations are normally characterized by the use of Computer Image Generators (CIG) and other types of visual displays which present images at high frame rates to create the illusion of continuous motion.

The images displayed to the user can be a visual or “out the window” view of the environment as well as other types of sensors like radar and infrared. Visual representations of the terrain database need to provide a sense of reality and need enough detail to immerse the user into the application. A terrain database model for virtual applications normally utilizes geometry descriptions for cultural features with attributes like color, texture and materials as well as other visual specific attributes.

Sensors other than visual include radar, infrared, night vision, and others. Normally these sensor models require specific attributes that provide material characteristics. The TDB material data is used by the sensor models to visualize the synthetic environment through the particular sensor.

Constructive simulations are widely known as war games and are used to support tactical and strategic decisions (Smith 1998). Constructive simulation (P2.12.9) is defined by the DoD M&S Glossary (DoD 5000.59-P 1998) as;

“Models and simulations that involve simulated people operating simulated systems. Real people stimulate (make inputs) to such simulations, but are not involved in determining the outcomes.”

Constructive models and simulation normally involves higher echelons of command which aggregate friendly and enemy military units. These models or simulations are normally used to augment the number of non-aggregated friendly and enemy forces. Agents control the entities behaviors and physical models in these simulations and provide the illusion that the systems are operated by real soldiers. Terrain databases for constructive simulation are modeled at coarser scales to allow for a large number of entities on the battlefield. This larger scale utilizes coarse geometry, features and attributes representations which are less demanding than models and simulations at the platform level.

Semi-Automated forces (SAF) are simulation applications at the platform level. The “semi-automated” in this case implies the control, supervised or monitor process by

other systems. Humans normally control SAF models and simulation execution by providing the necessary behaviors at the appropriate times.

The synthetic environment representations for constructive and SAF require a different type of information than that needed by virtual applications. The TDB needs to provide the models with the ability to sense, plan and navigate in the environment. Therefore the TDB contains additional terrain and cultural feature information like surface material, road widths, building heights, river depth and so forth. For example, the International Standard ISO/IEC 18025:2005(E) provide an Environment Data Coding Standard System (EDCS) which contains 26 tables of classification codes and 27 tables of environmental attributes. To provide an idea of the number of classifications and attributes used, the OneSAF simulation uses a potential of 469 environmental classifications and 408 environmental attributes.

In addition to classification and attributes; constructive models need geometry and topological information to support the models physical and behavioral components of these simulations. Topology is normally used for the traversal of terrain and roads. For example, during path planning the road segments are search or traversed to determine routes of continuous road segments.

And finally live simulation use real equipment in the real world to perform live training scenarios (DoD 5000.59-P 1998, Smith 1998). Live simulation allows the user to practice the physical activities and skills with their real equipment on the real world.

Each one of the above classes of simulation consists of an integrated set of data elements that make-up a synthetic representation of a given geographic location. Although each environment shares the same geographical location each representation has a different view, representation or model for the geographical data that describe the same objects in that region. These geographical models need to be correlated if interoperation between these simulations is intended. Differences in the abstraction of environment and the simulation make this task very difficult.

#### **SYNTHETIC ENVIRONMENTS CORRELATION CHALLENGES**

For example, in some cases even similar classes of applications may model the environment differently. Virtual ground simulators require detail information of the terrain surface so that the vehicle can maneuver correctly on the terrain. These models rely on the terrain slope, the surface materials and other cultural features of importance for ground vehicles. Now, consider a virtual simulator of a high flying aircraft that has longer viewing ranges and wider fields of view than a ground vehicle simulator. As a result of the large viewing ranges and wider fields of view, the high flying aircraft simulator include a larger portion of the TDB in it's out of the window view. In addition to the large



portion of the environment, high speed maneuvers traditionally require that high flying aircraft maintain higher frame rate updates than slower moving ground vehicles. The larger and more complex the TDB and simulation models the harder the hardware and software application must work to maintain a particular frame rate. If similar hardware is used for both applications, the TDB must be tuned to include less detail. Therefore in high flying aircraft simulation cultural feature detail is traded for raster imagery based detail and 3D detail on the ground is limited to target and landing areas. This terrain surface and cultural feature polygon budgets as well as texture memory budget is controlled by the hardware capability to deliver a required frame rate.

When different classes or elements of simulators are combined different type of information is process by each application for the same environment object. For instance, in virtual systems geometry, color and texture are of great importance, where as for SAF application geometry and attributes drive the vehicle dynamic behaviors. Today's SAF is not equipped to interpret texture information like humans. The information which is visible on the texture must be translated to attributes which can be processed by the SAF models. For example, a virtual 3D building model with a texture façade may contain windows and doors. SAF and other similar computer generated forces applications rely on feature geometry, classification and attribute data to detect, recognize and interpret the environment. If the windows and doors on the building are

not translated to geometry and attributes the SAF models will not be able to plan a path into the building or have visibility through the windows into the building interior.

In summary, each M&S application needs access to the same synthetic environment objects but the type of information and the target data format are different. For these different representations to interoperate a common synthetic environment it must provide for their respective needs (Mamaghani 1995).

### ***Embedded Training***

Training is moving away from an inefficient, time consuming and expensive enterprise to one that can be delivered efficiently and just in time. To support this view, training is moving away from off-site events to a systematic series of learning experiences that are integrated into the workspace and embedded in the systems used to perform the work (Kozlowski et al. 2001). In this sense training is not a separate activity but a continuous activity that is part of the work environment and which is supported by the systems used to perform the day to day task.

In the military setting this embedded training involves the use of simulation software embedded onboard military operational platforms. For instance, embedded training in Future Combat System (FCS) envision using SAF for expanding battlefield entity count

and using image generators to display virtual models of neutral, friendly and enemy forces. Embedded Training in the FCS is expected to provide full task training capabilities and support operations, training, mission planning and rehearsal for soldiers, small units, staff teams and dismounted infantry simultaneously (Shufelt 2006).

Embedded Training and situation awareness will be enabled by a variety of technical developments including common standards and protocols, the production of common virtual components and correlated terrain databases (Shufelt 2006). A combination of live, virtual, constructive and operational environments will need to maintain a common and updated representation of the battlefield using high fidelity geo-specific terrain (Cox 2009).

Tools like the Battle Command Knowledge System (BCKS) will help virtual simulation replicate actual mission areas (Shufelt 2006). This and many other tools will provide the soldier with the means to rapidly share knowledge and enhance overall situation awareness. It is expected that a variety of sensors as well as the soldier will provide updates for the synthetic environment representations in real-time as conditions change, therefore enabling virtual environments to accurately replicate the mission areas (Shufelt 2006).

These updates imply the generation of information related to the battlefield state which may include updates to cultural features like bridges, roads, buildings and others. For example, consider the military situation presented by Shufelt (Shufelt 2006) where a bridge located on a tactical important road is destroyed by the enemy. A soldier in the field documents the event with geospatial information related to the event. In the Shufelt example the information is sent to a special team which updates the synthetic environment including the virtual TDB, electronic maps and potentially other representations. Future mission planning and rehearsal activities can take into account the new bridge state and plan accordingly.

Now, consider the situation in which the updates are incorporated into the platform onboard TDB representation. Also consider the possibility of replacing the special modeling team with intelligent computing system that can automatically update the correlated representations distributed throughout the battlefield. In this extended view, the geospatial information is processed locally (changes), posted and post processed as necessary to provide information on the condition of routes across the battlefield (updates). Updates on a network centric environment like this will shorten the processing of geospatial information.

## ***Terrain Database Generation***

The content of a synthetic environment for simulation is driven by simulation requirements and the need for these different simulations to work together. The IEEE Standard 1278.2-1995 defines a synthetic environment as;

### **3.1.37 synthetic environment:**

The integrated set of data elements that define the environment within which a given simulation application operates. The data elements include information about the initial and subsequent states of the terrain including cultural features, and atmospheric and oceanographic environments throughout a DIS exercise. The data elements include databases of externally observable information about instantiable DIS entities, and are adequately correlated for the type of exercise to be performed.

It is the integration, infusion, and tailoring of various geospatial data sources that creates a full TDB. The current use of GIS like the Common Joint Mapping Toolkit is primarily limited to the generation of maps (Kleiner et al. 2007). But in the future the use of GIS will expand to include more sophisticated simulation functions.

Determining the set of environment data elements needed by one simulation as well as the set of common data elements between a series of simulations is a challenge. Data modeling is typically conducted as part of the M&S system planning and is used to

define the components of a system. Recently Miller et al [2004] have used the Environment Data Model (aka EDM) to specify the logical data model which describes the entities or features and their attributes and relationships. Data modeling is typically conducted as part of the M&S system planning and is used to define the components of a system. Data modeling normally progresses from conceptual modeling, to logical modeling, then into physical modeling, and finally into the design and implementation of the TDB as a target format [Campos et al 2006]. The Environment Data Model specifies the data elements and parameters that drive the representation of the physical model. Each M&S application has different requirements and use different physical models, which results in a different and unique Environment Data Model. The collective intersection of Environment Data Models for different M&S applications represents the set of common data elements among a set of M&S systems. The larger the overlap between the Environment Data Models the larger the commonality between the application and therefore the larger the potential for correlation and interoperability. Within this dissertation TDB is primarily used to describe the conceptual and logical data models that support a particular a simulation or application. The term target format is used for the physical data model that describes the optimized and specific bits and bytes of the TDB. The target format is what the M&S application uses to load the environment representation as it relates to the terrain surface and the cultural features on the terrain. The following section briefly describes the typical TDB components.

## TDB COMPONENTS

The main components of a TDB are the terrain surface, cultural and natural features, 3D models, textures and images, attribute data and environment models (Mamaghani 1995).

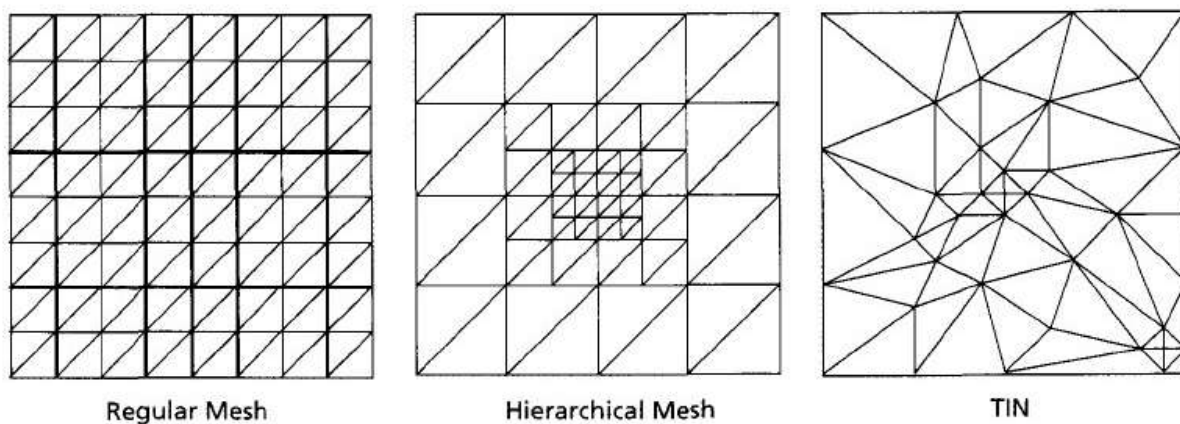


Figure 2 - Polygonal terrain representations (Polis et al. 1995)

### Terrain surface

The terrain surface of the earth has been described by mankind in numerous manners. Fundamentally a mathematical model of the earth is described by a geodetic earth model. This geodetic earth model is used as a reference for the actual surface and gravity field of the earth. Simpler ellipsoid models are normally used as they provide a good fit to the earth gravitational field and provide a close form mathematical model (Torge 2001). These ellipsoidal models of the earth are referenced as geodetic reference system and provide a horizontal datum for the model.

This geodetic reference system is normally geocentric with Z-axis coinciding with the earth's axis of rotation and the direction of the X-axis pointing to the Greenwich meridian (Torge 2001)(Tolk 2006). Some popular geodetic reference systems include North American Datum 1927 (NAD27), NAD83 and the World Geodetic System 1984 (WGS84). The WGS84 was developed by the DOD and serve for global mapping, charting, positioning and navigation.

A digital elevation model or DEM describes a grid-based model that contains elevations of points with respect to an earth model. The digital elevation model is usually the underlying geographical source data that describes the three-dimensional terrain surface and geometry, either as sampled grid posts or as a collection of polygons (Figure 2). If geodetic coordinates are used the Earth's surface is approximated by an ellipsoid like the WGS84 and locations near the surface are described in terms of latitude, longitude and elevation.

The most commonly used standard data source for terrain elevation is the National Geospatial-Intelligence Agency (NGA) Digital Topographic Elevation Data (DTED MIL-PRF-89020B) and the United State Geological Service (USGS) Digital Elevation Model (DEM). DTED provides elevation postings at spacing ranging from approximately 100 meters to one meter. This elevation data is used to generate the terrain surface for



M&S applications. This representation may be a regularly spaced grid of elevations with implied polygonal triangulation or a triangulated irregular network (TIN). Figure 2 shows some examples of polygonal terrain representations. Pre-processing of terrain elevation may include removal of anomalies and merging of terrestrial and bathymetric elevation models.

### **Cultural features**

Features found on the terrain, whether man-made or natural, such as vegetation, hydrology, roads and obstacles are brought in from existing digital data sources or by digitizing analog maps (Mamaghani 1995, Schiavone 1997, Polis et al. 1995). Feature data used in M&S includes geometry and attributes that describe the cultural features as vector data in the form of point, line and areal features.

There are numerous format standards for describing culture features such as the Environmental Services Research Institute (ESRI) shape files and geodatabases, USGS Digital Line Graphs (DLG) and NGA products like Digital Feature Analysis Data (DFAD) and Vector Smart Map (VMAP) formats.

### **3D models**

Geo specific or notional objects in the real world are typically represented by terrain databases and typically populated with structures, buildings, bridges and other 3D models that are found in the area of interest (Mamaghani 1995, Schiavone 1997, Bitters

2004). The location of objects is sometimes obtained from feature data, but the 3D geometry of the object is constructed from blueprints, CAD data, extruded from imagery, or populated by models of actual structures.

These polygonal representations are normally generated using hand modeling tools. The number of geo-specific landmarks is normally driven by the application requirements and may include object like, airports, runways, tall and large buildings, bridges and navigational aids.

Landmarks require geo-specific images that make the 3D models look like the real world object objects. The surfaces of these models are typically covered with images or textures generated from pictures or completely generated by artists.

Notional 3D models are typically geo-typical which are modeled once and re-used many times in different environment and on different locations of the same TDB. For example, pine and oak trees may use typical textures if they are not used as landmarks.

Automatic or parametric generation techniques are used to vary the appearance of cultural features. For instance, varying the combinations of building roofs and walls may be used to generate different buildings layouts and elevations. Bridges may also be parametrically generated based on the number of supports, spans, length, and type.

Although it may be possible to generate high quality models using automatic or parametric approaches, hand modeling is necessary to generate the most realistic TDB. Modeling tools like 3D Studio Max, Maya, and Multigen-Paradigm Creator are typically used to generate 3D models.

### **Textures and images**

When databases are built for visualizing the terrain surface and features, color and texture become critical. This information is often extracted from photographs or videos, or synthesized from general geographical characteristics. Imagery may also come from satellites and other sensors and may be available in a variety of different formats with GeoTiff being the widest used data format (Nichols 2004). This raster data must be merged, color balanced, geo-referenced and orthorectified before it can be used on the TDB generation pipeline.

This 2D raster data is then integrated or mapped into the terrain surface. When actual data are not available, geo-typical textures and colors are applied to the database to describe different materials. Textures add substantial detail to the visual representation that is not achievable with simple geometry alone.

### **Attributes**

Many applications require additional attributes needed by either the user or the computational tasks. These attributes include such data as infrared signatures of specific objects that allow a user to recognize and detect objects in the environment.

They also include information about surface material in support of mobility. Mobility is also referenced as "trafficability" and this attribute is used to drive the vehicle dynamics model so that the simulation can respond appropriately to changes in surface materials. There are a significant number of attributes that are sometimes needed for synthetic environmental database. These could range from a feature classification code to the width or height or other physical characteristics of objects, to environment characteristics like temperature and wind, to functional use or other more conceptual properties of objects.

#### **Environment models**

Environment models include such phenomena as smoke, rain, and haze. Sometimes these data is integrated into an environmental database, and sometimes they are embedded in the software in a separate database apart from the main TDB.

The above are main components of the synthetic environments. These components are integrated into synthetic environment by a TDB generation process. The next section describes this process.

#### **TDB GENERATION PROCESS**

Current TDB generation process is a combination of manual and automatic processes (Bitters 2004). In an automated TDB generation pipeline (Schiavone 1997, Bitters 2004, Polis et al. 1995, Trott 1996) geographic source data is used to generate large extents

TDB representations. This automatic TDB generation process is supported by standard geographic source data products which are used to generate a variety of heterogeneous TDB. Transportation networks, buildings and other 3D features are integrated with 3D terrain elevation data to produce 3D environment representations.

The specific approaches to the creation of TDB may vary based on available tools, system requirements and the applications specific needs. The following section describes the typical TDB generations process pipeline which includes data collection, value adding, transformation and tailoring, creation of 3D models, TDB assembly, and compiling (Mamaghani 1995).

#### **Data Collection**

The identification and collection of relevant data is normally the initial step in the TDB generation process (Schiavone 1997, et al. 1995). In some cases this step is repeated latter on the process because information was not available, or has changed, requirements became more refined or the material did not contain the fidelity or quality of data that was expected (Mamaghani 1995). Source data materials include paper maps, digital elevation products, images and photographs, 3D models, tabular data, satellite imagery, attributes, environmental data, topological data existing animations, special effects and others.

### **Value Adding**

Most of the time the source data is further modified before it can be used by the TDB generation system (Schiavone 1997, Polis et al. 1995). Terrain surface descriptions from one source may not match the cultural features from other or similar sources. For example rivers may not follow the minimum elevation of the terrain surface. Data acquisition, resolution, intended use, time of capture and other factors contribute to this issue (Mamaghani 1995, Schiavone 1997, Polis et al. 1995). In some cases value adding may be done to update the source data with the latest information available or to add more detail.

In some cases the external source data is value-added and integrated into a consistent or correlated source data sets which may include cultural features, imagery, sensor material mappings and terrain elevation.

### **Transformation and Tailoring**

Depending on the application requirements more processing may be needed on the source data (Mamaghani 1995, Schiavone 1997). For instance, terrain elevation grids may contain too much information for the target system (Schiavone 1997, Polis et al. 1995). In this case it is necessary to down-sample at a lower resolution to allow for computational limitations of the target formats. Similar operations may be necessary on road and river linear representations (Schiavone 1997). In this case co-linear vertices are removed to reduce the number of vertices.

Development of the synthetic environment terrain surface involves creation of terrain model that will associate 3D features and integrate expanded 2D representations of linear and area features. For example, a road may be expanded from a line to an area and the pitch adjusted for smooth transitions. Lakes and other water surfaces should have uniform elevation which may be selected based as an average maximum or minimum perimeter height.

Terrain models involve one of three models; Grid, Triangular Irregular Network (TIN) or a constrained TIN. Grids use regular arrays of elevation that result in compressed representations of the terrain surface. However, grid models can not accurately represent surface features that are smaller than the given point spacing of the grid. TIN approximates the surface by a network of planar non-overlapping and irregularly shaped triangular faces. A constrained TIN is constructed by using significant vertices obtained from the feature data, like roads, rivers, lakes and building footprints. These vertices are included in the triangulation process and generate integrated features into the terrain surface. The vertices are part of significant surface features such as buildings footprints, transportation network or lakeshore which have elevations which may be adjusted to obtain flat areas or controlled slope surfaces. This constrained TIN assures the roadways will have reasonable pitch, buildings will not float above terrain or be buried beneath it and waterways surfaces will have uniform elevation.

De-confliction and conflation of features (Bitters 2004) as well as feature-to-image mapping and consistency may be necessary to ensure that features on images and vectors match.

#### **Specific and generic 3D model development**

Source data provides 2D symbolic representations of features. In 3D synthetic environment 3D models are imported from already existing source or constructed as specific replications of cultural features or generic feature models. For example, a bridge may be represented as a line in source data with classification data indicating that is a bridge. This line feature is used to generate 3D polygonal representation of the bridge. For virtual applications this 3D models may have textures applied to add realism to the 3D model. For SAF applications other attribution is necessary to support mobility over the bridge by computer generated units.

For buildings 3D models a polygon may be used to represent the building footprint. This footprint may have attributes such as height and building function code which may be used to automatically generate a 3D representation.

#### **TDB assembly**

Once the entire geographic source data has being put into an acceptable form, in the internal TDB representation, these data elements are then integrated and assembled into a TDB (Mamaghani 1995). The terrain surface is combined with texture, color and



other surface material attributes. This step may involve conforming cultural feature models with the terrain skin and translating models to correct locations. In essence a cohesive TDB representation is generated. This step is normally performed by a TDB generation system which is further explained in the next section.

### **Compiling**

After sufficient iterations the TDB is ready for use and test by the intended target platform. In this step the TDB is compiled from an editable internal data structure into a platform-specific data structure or target format that a particular target system expects. Within this dissertation this TDB representation is called the target format.

TDB generation is not a new. TDB generation has been used over the last 20 years for the generation of many different network systems. This process although iterative is a pipeline in which data moves from one stage to another.

As we move into a combined Command and Control, and M&S environment the data collection, value adding, transformation and tailoring steps are common to both applications. Although different requirements will require different geographic source data and transformations a common repository of geographical source data and TDB may exist. This common TDB repository will contain the information that will be used for the generation and update of the synthetic environment representations for both Command and Control and M&S applications like embedded training.

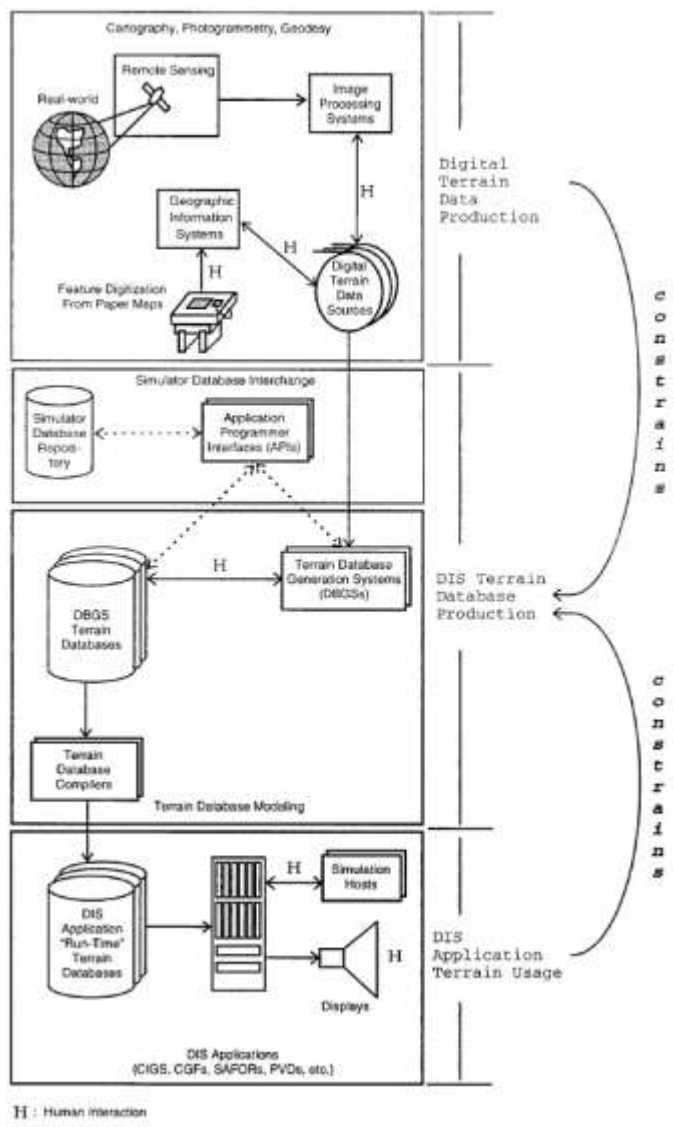


Figure 3 - General Data flow diagram for Terrain Database Generation (Schiavone 1997).

## **A THEORETICAL PIPELINE TDB GENERATION SYSTEM**

As it was presented in the previous section the TDB generation process is used for the generation of TDB. Within this process the pipeline TDB generation system is used to generate the TDB. This section presents a theoretical TDB generation system pipeline which is an updated version of Schiavone's (Schiavone 1997) model. After that a brief description of previous TDB generation systems a new view of the theoretical TDB generation system pipeline is provided.

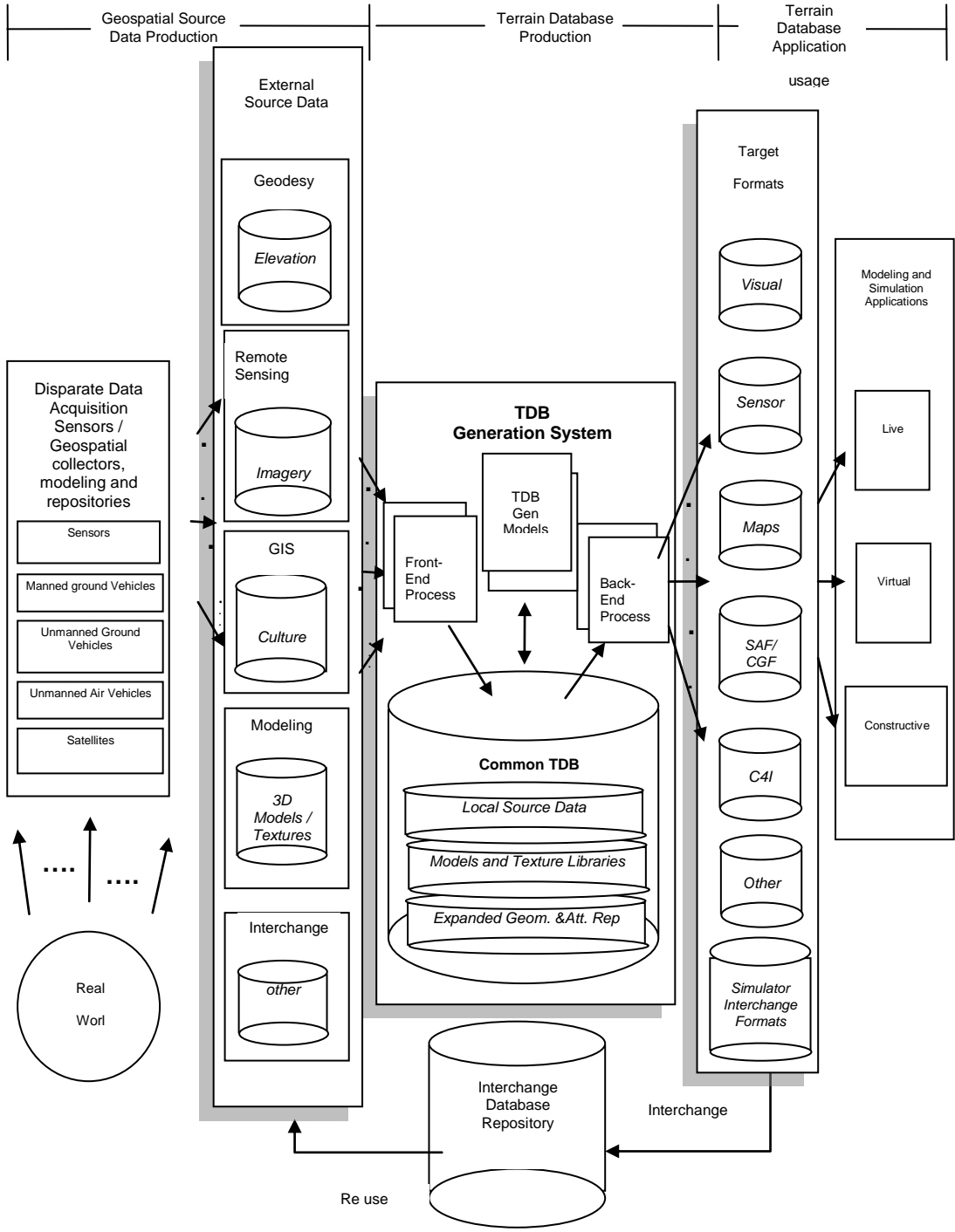
Figure 3 shows the general data flow diagram used by Schiavone et al (Schiavone 1997) to describe a traditional TDB generation for network simulation. As can be seen in Figure 3, the traditional TDB generation is a pipeline process consisting of three phases or stages: Digital Terrain Data Production, DIS Terrain Data Production, and DIS Application Terrain Usage.

In Figure 3, the outputs from Digital Terrain Data Production phase are geographic source data for the rest of the database production process. The products of this stage are generated as part of the data collection, value adding, transformation and tailoring and 3D model development described in the previous section. These products include the digital terrain and feature data source products that are used to describe the terrain and the features contained in the real-world environment. For the purposes of this

document, the terrain and feature output products from the first phase will be referred to as “external source data”.

External source data is the input to the DIS Terrain Data Production phase 2. The Terrain Database Generation Systems or “DBGS” is the active process of phase 2 which transforms the digital terrain data sources and or interchange format into a set of internal “DGBS Terrain Databases”. As it can be seen from the double sided arrows data flows in and out of the internal DBGS Terrain Database represents. This process may be repeated multiple times as the TDB Assembly process is tuned to generate an acceptable representation. This internal correlated, value-added Local Source Data (local source data) sets are the input to the Terrain Database compilers. The compilers transform the internal Terrain Databases into the necessary target format or “Run-Time Terrain Databases”.

The target formats are the input to the phase 3, “DIS Application Terrain Usage”. In phase 3 the optimized formats are loaded into the target hardware and software and used for virtual, constructive and live simulation.



**Figure 4 - Theoretical TDB Generation Pipeline System**

To understand previous and current TDB generation pipeline systems one must understand the change in terminology from what it was over ten years ago. Figure 4 presents a theoretical pipeline TDB generation system using current terminology. In Figure 4 the external source data is selected for the generation of a set of target formats. For example, external source data may be collected from Geospatial Source Data Repositories at the United States such as the Geological Survey, National Geospatial-Intelligence Agency, and many other similar state and military repositories process and preprocess as mentioned before.

#### **FRONT-END**

The selected external source data set is brought into the pipeline TDB generation system through the front-end process. The external source data undergoes a set of front-end processes which transform the external source data into a format the TDB generation system understands. This internal TDB generation system representation will be referenced as local source data. It is common for the front-end process to transform the original external source data spatial reference model to the selected TDB generation system spatial reference model. The spatial reference model provides the context in which coordinates, directions, and distances are defined in geospatial data. Another example of front-end processing includes tests related to external source data compliance to an agreed geographic source dataset specification. In this step,

components needed by the TDB generation system are tested for existence and compliance with a specification for external source data.

#### **COMMON TDB / INTERNAL TDB REPRESENTATION**

After the front-end process, the local source data is stored as internal TDB generation system representation which is composed of a number of datasets or libraries. These datasets and libraries inside the TDB generation system is the Common TDB which is used for the TDB generation of all the target formats. This Common TDB may include terrain elevation, geo-specific imagery, cultural features, 3D models, textures and expanded 3D geometry generated as the result of the TDB assembly. Interchangeable references to the Common TDB and Internal TDB generation system representation will be used throughout this document. Note, the Common TDB is different from the Common Database cited above. The Common Database or CDB is a specific format specified by PEO-STRI for use by specific units in the military. The term Common TDB used in this document refers to theoretical TDB that is used to generate all target formats.

Correlation and interoperability of heterogeneous networked simulations have always been a challenge for the M&S community (Schivone 1997, Simons R. 2004).

Correlation errors occur between different simulation systems when TDB features are rendered differently between simulation applications (Simons R. 2004). Some of the correlation errors include numerical accuracy, algorithmic consistency, parametric

consistency, temporal consistency. The differences in the representational polymorphism, completeness and efficiency of the TDB result in potential interoperability problems. Even if the same source data and common TDB representation are used for the generation of target database formats differences in abstraction or representations of each M&S target format may induce line of sight, detection, mobility and other correlation problems.

#### **TDB GENERATION MODELS**

Once inside the TDB generation system, the local source data undergoes a set of transformations or TDB generation models. The selection of particular TDB generation models and the parameters which control the transformations are part of what is called the TDB modeling process. For instance, as shown in Figure 4, a TDB generation model may be responsible for the transformation of local source data in the form of terrain surface elevation posts into a triangular irregular network representation that describes the terrain surfaces. In this case, the TDB generation model is driven by control parameters like the density of triangles per unit area, material, and texture attributes.

The following is an example of how the selection of TDB generation models and modeling parameters could control the correlation among all the representations in the Common TDB. For example, a TDB generation model is selected for the generation of a



virtual building representation which is the extruded representation of an area feature described the building footprint. This virtual representation of the building may include geo-typical textures for the walls of the building and may have a flat roof. A similar representation may be generated for a constructive representation but in this case a point feature is used with building attributes of width, height and length. These two representations of the building are adequate and well correlated.

However, not all buildings in real life comply with this simple representation of flat walls and flat roofs. Geometry details on the buildings add complexity to the representation which deviates from a simple box representation that can be characterized by width, length and height. A more attractive virtual representation may include a gabled roof which extends beyond the side walls; windows and doors on the side walls; and other features. The small extension of the gabled roof beyond the building side walls as well as the gabled roof now create a difference between the bounding box representation described by the width, height and length attributes. These gaps in between the bounding box representation can introduce intervisibility and collision anomalies between a virtual and constructive M&S application. In this case, the selection of a TDB generation model can generate either a well correlated representation or a more attractive virtual representation.

## BACK-END

After TDB assembly the internal Common TDB representation is ready for export to target formats. Ideally the back-end process should only format the data into the target formats. However, sometimes the TDB generation system does not contain the TDB generation models that can generate a representation for a particular target format. In this case the back-end must transform the internal TDB generation system representation before it can generate the target format. For example, if the quality of a virtual target format is improved by the back-end by replacing 3D models with more realistic 3D models correlation may be affected. The enhanced 3D models may not match the geometry and attributes included in the TDB internal representation and therefore could potentially affect correlation.

This type of value adding back-end transformations may also introduce differences between the target formats which were not present in the internal TDB generation system representation. Thus, the more complex the back-end target format generation process, the greater the difference between target formats and the internal TDB generation system representation, the greater the potential for runtime correlation anomalies. Therefore, it is preferable that the back-end process is limited to only transformations of the internal TDB generation system representation into the target formats.

## SUMMARY

The amount of processing performed by each one of the components of the TDB generation pipeline system can vary from one implementation to another. For example, if the external source data is in the correct coordinates system and in the correct format, the front-end has very little work to bring the data into the TDB generation system pipeline. This kind of TDB generation system has very little flexibility as it can only accept a limited number of pre-process external source data. In this case, the external source data needs to be specifically generated for this system and may provide very little reuse value if this format is not shared by other TDB generation system. However, this TDB generation pipeline system is very efficient as very little time is spent formatting the data for the TDB generation system.

In a similar manner, there are instances when the TDB generation pipeline system may have to do little processing on the Common TDB to generate a target format. For instance, if information on ocean wave height and frequency is similar to that stored in the Common TDB and target formats, very little is needed by the TDB generation models transform the Common TDB information into an acceptable representation for the target database. The set of TDB generation models perform a combination of complex and simple models transformations that generate a number of representations necessary for the generation of the target formats.

In conclusion, the processing done by the TDB generation pipeline system is distributed across various processes, with front-end and back-end processing being responsible for the import and export of data from external source data and to target formats respectively and the TDB generation models responsible for the transformation of the imported data into a representation which support the export of target formats.

### **Future Challenges & Issues**

The above sections described the traditional past and current TDB generation pipeline process. But as mentioned earlier, user expectations and requirements are being driven by expanding network capabilities. Hence future systems of systems, such as the Future Combat System weapon system, seek to expand on their capabilities to consume a greater range and ever more current TDB. These larger and complex systems are built from standalone systems of sufficient complexity to be considered systems of systems. Each system possesses operation independence and it is useful whether or not operating within a system of systems configuration. Although not typical system of system are usually geographically distributed a situation which normally requires a network centric communication approach. These individual systems are not necessarily design to work together or in an unique configuration, they evolve over time and change as the system of systems needed evolve (Maier 2005). Interoperability is necessary in many different areas which include communications, data interpretation and environment representations. The environment representation is the topic of

interest for this dissertation. Distributed systems which utilize digital geographical representations of the environment must be correlated for the systems to interoperate. One challenge common to system of systems arises from computer storage. For example due to storage limitations on FCS platforms, the number of geospatial datasets stored on a platform must be limited (Shufelt 2006, Cox 2009). It is expected that the platforms will contain a local repository of training products which will be updated as needed. Additional training products as well as correlated TDB will be available at remote network repositories (Cox 2009).

Three approaches are described by Cox (Cox 2009) one approach leverages current technology for the generation of Command and Control and M&S TDB which are derived from different geospatial source data repositories. This approach has potential correlation issues as Command and Control TDB and M&S will be developed from different geospatial source dataset. Another approach relies on a common geospatial source data server or “GeoServer” which stores all of the data that all the applications will need, thus, reducing the potential for correlation errors. TDB Generation tools and process are used to generate all the necessary target formats. Once generated the target formats are distributed through to the target systems. The last approach provides geospatial source data from the GeoServer directly to the platforms. In this approach the platforms contain all the necessary tools to perform the necessary target formats updates.

However, today's TDB generation pipeline system is a complex and interactive process which does not fit the limited storage and processing resources of embedded training computing platforms. Research into the incorporation of geospatial source data into runtime formats is needed (Cox 2009). Another interesting alternative is to not limit the updates to send geospatial source data only, but allow updates in the target format. For example, just like a 3D model may be send as updates for a virtual TDB, sets of geometry and attributes can be packed and sent for incorporation into constructive TDB.

Another limitation that must be considered is networks bandwidth. Bandwidth is the information-carrying lifeblood of any network and in network-centric warfare bandwidth must be carefully guarded. Lack of bandwidth is one of the current operational shortcomings of network-centric operations (Luddy 2005). Differences in communication equipment and the inability of two-way communication between battlefield units and commanding units is currently one of the major obstacle in achieving comprehensive and reliable network operations (Shufelt 2006, Shufelt 2006, Luddy 2005).

Some believed that technologies like the Joint Training and Experiment Network, Fixed Tactical Internet, Global Information Grid and the Warfighter Information Network - Tactical will provide the necessary bandwidth to move large packets of training data required for training, mission planning and rehearsal (Shufelt 2006). Nevertheless,

military services must make constant efforts to manage bandwidth more efficiently, with better communications technology and with command and control system that are better able to prioritize and manage signal flow (Luddy 2005).

### ***Database updates***

As mentioned previously, operational environments are dynamic in nature and constantly changing. Regional conflicts, rapid deployment and flexible response imposes a heavy burden on military commanders, their staff and supporting systems to keep up-to-date situation on the ground about enemy activities.

For this reason the synthetic environment representation used for command and control in operational environments need to be quickly updated to reflect the real world conditions. Current GIS based systems like the Common Joint Mapping Toolkit provide for quick and efficient geospatial tools which support this type of rapid mapping updates.

However M&S synthetic environments are a more complex and integrated set of data elements which up to this point tend to be more static and take much longer to update. Efforts are under way to support rapid TDB generation of complete TDB (Shufelt 2006). However, to support the network-centric task, post, process, and use (TPPU) a different approach to TDB generation and updates is needed. Using current technology and depending on the TDB formats it may be possible to transmit updates and replace

portions of the TDB. Nevertheless to preserve network bandwidth these updates should be as small as possible and should include only the necessary updates.

### ***Target format updates***

The current TDB generation pipeline system is designed to import geospatial source data, process this source data using a carefully tuned modeling process and generate a number of target formats. In this mode of operation the current pipeline works well. However it does not work as well when changes are introduced downstream nor on small and frequent updates.

On some TDB generation systems it may be possible to re-import target formats upstream in the pipeline. This added flexibility allows these systems to update target formats given a previous version of one of the target formats. Sometimes is a target format that was generated by the TDB generation system other times the target formats are generated by other TDB generation system. Nevertheless, the problem with importing TDBs upstream in the current TDB generation pipeline is that the system is not able to automatically translate the target format changes into updates to the TDB generation system internal TDB representation.

To some degree, it may be possible to re-import the target format at upstream points in the TDB generation pipeline system and extract geospatial source data products similar



to those used by the regular TDB generation system. However, the new imported source data must be treated as new geographic source data and must follow the traditional TDB generation system pipeline for the generation of new or updated target formats. For example, it is common for virtual TDB to lack all of the information needed for the generation of constructive TDB. For example, in a commercially available TDB generation system, it is necessary to sample the polygonal terrain skin representation of the imported virtual TDB to generate a digital elevation model which could be used to support the traditional TDB generation pipeline.

In addition to the work involved in generating new geospatial source data from the target format the TDB generation processing models may need to be re-programmed to process the new type of source data. For instance, when a constructive TDB is imported the attributes used to describe the cultural features may not match those used of the traditional geospatial source data. In summary, current TDB generation pipeline system have no memory of the TDB that it generates and therefore it's not able to automatically re-import the target formats it generates. Therefore, it is not able to determine differences nor update previously generated TDB.

### ***Partial Generation***

To manage the amount of information that can be stored, loaded, process or displayed simulation applications subdivide the TDB into spatial sub units called tiles, blocks or

pages. For example, the OneSAF Terrain Format (OTF) divides the earth into one degree by one degree geographical tiles and each tile is subdivided into pages. In current TDB generation pipeline systems the updates may be implemented on subsections of the complete TDB. These subsections may be referenced as blocks, pages or tiles depending on the TDB generation system.

Depending on the relation between adjacent blocks or tiles a number of other adjacent blocks or tiles may need to be regenerated as modifications or updates are introduced into the synthetic environment. Today's synthetic environment updates are driven by changes in geospatial source data. The geospatial source data is also divided into tiles and in GIS systems are stored as thematic layers. These thematic layers may trigger regeneration of all the TDB tiles or blocks that overlap the modified source data.

Potentially a large number of TDB subsection are normally re-generated for changes in any one source data thematic layer. Now consider the case when TDB subsection updates are needed for a variety of target formats. Updates to virtual, constructive and live representations may consume a lot of network bandwidth.

M&S dynamic environment technology of today (Woodard, Tim Upton, G Simons, R 2001) is able to perform incremental updates to the synthetic environment. However, this approach is primarily concerned with the modification of TDB data elements due to

runtime events. Some examples of dynamic terrain modifications include tire tracks on the terrain, bomb craters, and buildings state changes due to direct and indirect fire.

In order to maintain correlation between TDB, a dynamic terrain server application distributes changes from one simulation to all other interested applications (Woodard, Tim Upton, G Simons, R 2001). In this approach the individual simulation applications are responsible for the integration of these environment changes to the local synthetic environment representation. The dynamic terrain approach includes events which are temporal and which are not incorporated into the original TDB nor on the geographic source data that was used to generate the TDB.

A more efficient TDB generation system should have the characteristics of dynamic environments, and focus on partial regeneration of TDB areas based on only the geospatial source data features that changed. It should be expected that the regeneration of only the affected data elements will result in TDB regeneration time and processing savings.

### ***Labor Intensive***

TDB generation is a time consuming, iterative and therefore expensive process (Schiavone 1997, Bitters 2004, Polis et al. 1995, Trott 1996). Constrains on the creation

of TDB include real-time performance, behavioral use of attribution and geometry, distributed network simulation and interoperability and many more.

Perhaps the most prominent of these labor intensive costs is dictated by the real-time computation requirements of a simulator (Mamaghani 1995). Since processing power is limited, once a particular platform is chosen for a given cost-performance range, the software, and sometimes the hardware, must be designed to allow for the best real-time performance. This means that both the TDB data and structures stored in a specific system play an important role in optimizing the system performance. Therefore given the fixed computational budget of a system, the TDB designer must take into account the application specific requirements, the size and extents of the database, the desired density and fidelity, as well as the type and amount of the available data elements which need to be incorporated into the TDB.

In addition to performance, consistency or correlation between a common set of TDB as well as other distributed computing, simulation and display system is important in distributed networked collaborative system. The careful update of all of the TDB representations is also of main concern, especially when it is necessary to maintain a variety of representations at a high degree of fidelity with the real world.

In summary TDB generation is a complex and interactive process which includes a combination of automated and manual process (Bitters 2004, Schiavone 1997). By using automatic TDB generation considerable improvements in fidelity can be achieved as well as saving in development time. (Polis et al. 1995).

### ***Expert Knowledge***

TDB generation process requires expertise in many domains. Knowledge on geospatial source data processing, modeling, construction techniques, tools, target system constrains and user needs take years to master.

Acquiring, processing, generating, and interchanging the critical geospatial source data and information is important for the successful generation of distributed, correlated and interoperable TDB (Mamaghani 1995). TDB design and modeling make use of advance tools, complex modeling techniques and require knowledge on a variety of geospatial source data and target formats.

Ideally the users and designers should be involved throughout the TDB design and generation process (Mamaghani 1995). In addition trade-off between the fidelity, performance and correlation constrains need to be considered.

Capturing this expert knowledge in a knowledge base and using computer agents programs can alleviate the need for a high-degree of expertise and decrease the cost associated with expert processing time.

## CHAPTER 2: AGENT AND TERRAIN DATABASE IMPLEMENTATIONS

### *Using Agent and Ontologies for TDB Generation*

In this section ontologies and agent theory is presented to address the TDB challenges and issues described in the previous section. This discussion leads to an architecture with a variety of agents whose behavior and knowledge will be customized based on the target formats, as well as, the data contained in the TDB spatial areas they affect.

Russell (2003) defines an agent as; “anything that can be viewed as perceiving its environment through sensors and acting upon that environment through actuators.” An agent’s behavior is described by functions that map perception into actions. A rational agent is one who is successful at the particular task it was designed for. That means that the mappings of environment perceptions to actions produce the correct results. The agent sequence of actions causes the perceived environment to go through sequence of states. If this sequence of states is desirable by the application the agent has performed well its function.

The simplest kind of agent is the simple reactive agent (Russell, S. and Norvig, P. 2008). This agent selects actions based on the basis of the current environment perceptions and does not take into consideration previous perceptions or state. This

type of agent is simple but has limited intelligence and will only work if the correct decisions can be made based on the basis of the current perceptions. Normally for this simple mapping to work the agent environment needs to be fully observable. A fully observable environment means that the agent's sensors provide access to the complete state of the agent's environment at each time. However, in most cases the agent environment is only partially observable or noise and inaccurate sensors create an environment which has missing environment states.

Model-based reflex agents are able to handle the partial observability of the environment. This agent keeps track of the part of the environment it can't see at the time of the percepts. In other words the model-based reflex agent keeps some sort of state which is based on the perceived history. This environment state reflects some of the non observed aspects of the environment. However knowing about the current state of the environment is not always enough for the agent to decide what to do next. Sometimes the correct agent decision is based on other higher level tasks or goals.

Goal-based agents contain some sort of goal information that describes the situations that are desirable. Yet, goals and state are still not enough for making the correct decisions (Russell 2003). Goals provide no distinction between states. Utility-based agents use utility functions to map state into a real number which describes the degree



to which the goal is fulfilled. Utility functions are useful when making decisions between multiple goals.

Learning agents are other type of agents which become more skilled over time as its initial knowledge of the environment grows. The functions that map perception into actions as well as the knowledge that the agents has learned may be stored as a knowledge base. This agent's knowledge base may be static or evolving and describes what the agent knows and is able to do.

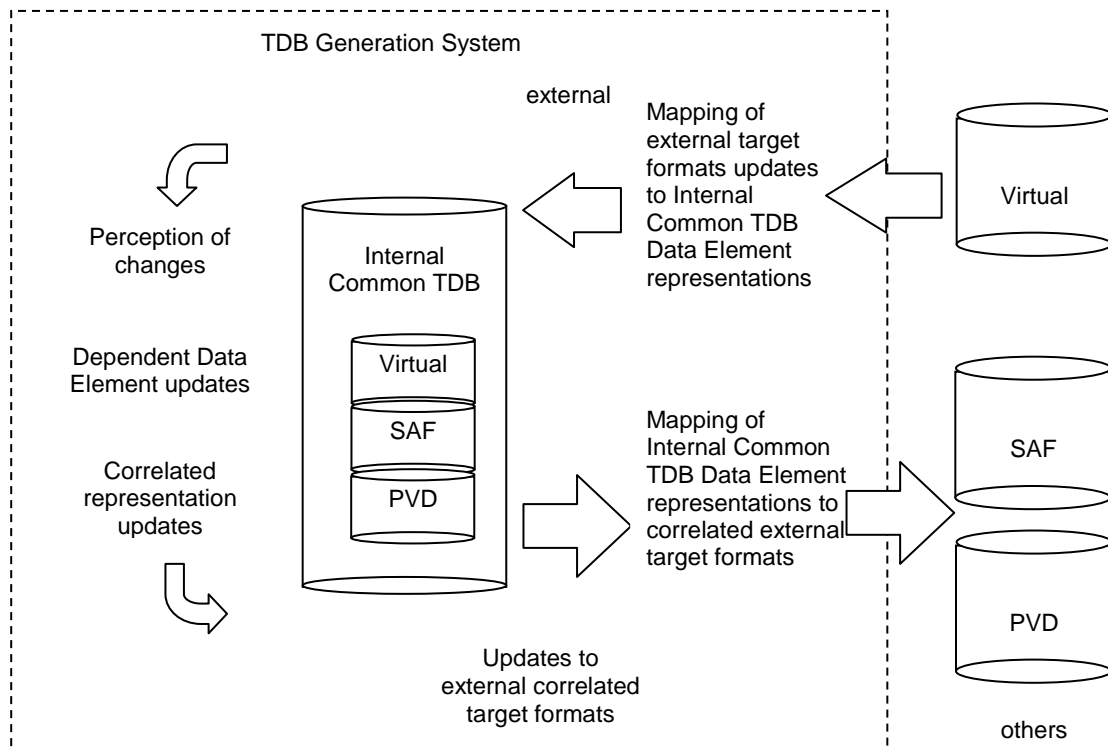


Figure 5 - TDB Generation System Common TDB Data Flow

Agent theory provides the tools necessary for the TDB generation system to recognize changes related to new or updated external target formats. To enable the TDB generation system to recognize or perceive geospatial data changes and automatically update the necessary data elements it is necessary to capture information that describes how the external representation is transformed into the internal TDB generation system representation. Similar type of information will also be needed for the updates of target format and how these changes relate to the internal representation Figure 5 shows this bi-directional update process.

**Table 1 - Description of environment tasks for TDB generation as agent performance, environment, actuators and sensors**

Agent Type	Performance Measures	Environment	Actuators	Sensors
TDB Regeneration Agent	Minimize processing time Maximize correlation	Terrain Database	Network Adapter TDB updates Transformations	Network Adapter TDB changes TDB Measurements

Russell (Russell, S. and Norvig, P. 2003) (Russell, S. and Norvig, P. 2008, Russell, S. and Norvig, P. 2003) first step in the design of an agent is the specification of the performance measures, environment, actuators and sensors. Table 1 shows the task

environment for a TDB Regeneration Agent. The environment that this agent operates is the terrain database. The sensor in this case are the TDB changes that arrive at the network adapter as well as the terrain database measurement functions that provide information on the changes generated by networked client applications. TDB changes are perceived and analyzed in conjunction with the rest of the terrain databases.

Performance measures are used to determine the best balance of correlation between the terrain databases. Differences in representational polymorphism related to model abstractions make this a challenging task. Differences in geometry representation and attributes must be carefully weighted.

For purposes of this dissertation TDB correlation will be considered as similarities in geometry and attributes. Geometry correlation is considered as the similarity between terrain surfaces as well as the existence, elevation and planimetric location of cultural features (Schiavone 1997). Attribute correlation relates to the consistency of attribute values between the TDB. The actuators in Table 1 are the transformations which modify the TDB representation to bring the system back into correlation. This transformation happens in the Internal TDB repository and as TDB updates which are send to the client applications through the network adapter.

Franklin (Franklin 1997) spell checker example provides an excellent distinction between a computer program and agent programs. All software agents are computer

programs but not all computer programs are agents. A spell checker adjunct to a word processor is not an autonomous agent. In this context the spell checker is not an agent because its output does not affect what it senses later. However, a spell checker that is integrated into the word processor is an autonomous agent that monitors what is typed and provides corrections on the fly. In a similar way the TDB regeneration agent responds to TDB changes on clients, analyses the affected TDB contents and provides modifications which become part of the TDB. The TDB changes may affect not only other representation but the same TDB. For instance, if a feature is moved in the horizontal plane; adjustments in elevation may be necessary at the new location. Changes on one TDB may also affect to other components and representations which in turn may potentially come back and generate more changes on the original TDB.

As mentioned in the previous paragraphs the agent mapping from perceptions to actions are critical of the agent's performance. Ontological descriptions and recent developments in Ontological Web Languages provide a convenient way of storing this knowledge base information. The next section expands on the concepts of metadata, description logic and ontologies and presents an approach for agent knowledge representation which can be used to capture this information.

## ***Knowledge Base***

For an agent to achieve its goals of identifying changes in geographic source data and target format components it is necessary for it to capture these relationships and dependencies into a knowledge base. TDB metadata provides information that describes the data but more information is needed to describe the implication of changes in any one TDB data element. The first part of this section defines metadata, environment data model, description logic, and ontology. This discussion leads into a description of the ontologies that will be used to represent the TDB and how they are related.

## **METADATA**

Metadata is data about the data. It provides information about, descriptions, and/or documentation of the data. Metadata is used to speed up searching and queries of geographical source data. It is the information that describes, explains, locates, and makes it easier to retrieve, use and manage data.

There are many different formal definitions for metadata but, for purposes of this dissertation, metadata is information that describes the TDB content. It describes where the data came from, when was it created, original sources, resolution, coordinate systems, origin, extents and so on.

Metadata in Geographical Information Systems (GIS) provides information on the data available at organizations, external catalogs, and clearinghouses. In this context it provides a summary of content, quality, type, creation and spatial information about the data set. Metadata may be in the form of text files, XML, or a database record.

An important metadata standard is the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata (**FGDC-STD-001-1998**). The primary purpose of this standard is to provide information on availability, fitness for use, access and transfer of geospatial data.

The metadata is used to determine the geographical location of the data, the fit of the data for a particular application, what is needed to acquire the data, and what it will take to process and use the data. Although metadata in this context is needed for this dissertation the use of metadata needs to go beyond this conventional metadata description. A mechanism is needed to express more complex relation on the data and in particular to be able to have agents operate on this data.

In theory a common format that could represent all formats of interest would solve the problem of heterogeneous terrain databases. For example, one may be able to describe the content of the live, virtual and constructive TDB with XML. But the format alone does not provide meaning but rather the content within. Further, various vendors

to the United States military have created specialized target formats whose efficiencies and unique content give the owning companies an edge over other companies in addressing military needs. As military technology, military operations, and computer technology evolves, terrain representational needs evolve as well. Evolution of military terrain representation has been seen over the past decades from SIF, to SIF++, to SEDRIS and to more recent format discussed further below. Some aspects of terrain representation formats live on such as the classification codes (Environment Data Coding Standards) and reference frame work (SRF) both from SEDRIS.

Metadata in XML format provides information on the data. Although there is a number of standards there is no agreement on a common format. Each geospatial repository has different requirements, each type of data has different representations, many different interpretations are possible. The GIS community maps from one format to another using ontologies.

#### **ENVIRONMENTAL DATA MODEL**

An Environmental Data Model (EDM) is a specialized model of data requirements that can be used to achieve interoperability between M&S applications (Miller 2004). An EDM uses a common dictionary of terms called the Environmental Data Coding Specification (EDCS) to provide definitions that may be used to describe TDB components in an EDM. However limitations on EDM have been found to prevent

interoperability (Dobey 2003). Dobey (Dobey 2003) recommends the following improvements to the EDMs:

- ontological hierarchies
- equivalence classes
- numerical confidence levels

According to Dobey (Dobey 2003) including the above processing in the EDM resulted in an increase number of interoperable concepts between the TDB EDMs. Including hierarchical ontologies into a data model can contribute to the effective identification of equivalent concepts between multiple EDM applications. These types of environment component equivalences would be necessary for the identification of the same data elements in different TDB representations.

In addition to the identification of equivalent data elements, it will also be necessary to combine a number of different factors to determine what processing to perform in order to bring correlations between the different TDBs. Yet, it is necessary to do more than knowledge representation, it is necessary to be able to derive information that may be implied by class inheritance and other logical relationships. Description logic is an extension of frame-based systems (Gil 2005) that can express definitions of classes and relations which can be used by computer reasoners applications for this purpose.



## DESCRIPTION LOGIC

Description logic provides class definitions that include attributes such as disjunction and negation as well as constraints on the relations to other classes. Description logic can reason about the logical definition of a class and infer class-subclass subsumption relations.

A standard knowledge representation format that goes beyond the traditional metadata is attractive as it can provide an interoperable description of knowledge that can be used by a wide variety of agents. The description of the domain includes logic which can be used to derive or infer other concepts. The knowledge representation is described by a set of sentences in a formal language. Examples of languages that can describe this knowledge include Propositional and First-order Logic.

In propositional logic, atomic expressions are used in conjunction with logical operators (and, or, not) to build propositional formulas. Atomic statements can be true or false and the truth value of formulas is determined by the truth value of the atoms.

A recent development in description logic system languages includes the Web Ontology Language (OWL). The main idea of OWL and the Semantic Web is to have a shared set of ontologies for knowledge-sharing that allows agents in a network environment to negotiate and exchange knowledge (Gruber 1993). As a long-term objective it is

expected that it will evolve into libraries of reusable knowledge components and knowledge-based services that can be invoked over networks.

Ontology languages like OWL are able to capture information using description logic which can be used to infer information not present in the knowledge base. Using description logic, agents can manipulate, derive and use inference to generate new data. This is very attractive as simpler description of knowledge can be used to derive more complex relationships. Furthermore, reusable ontologies could be used to build more complex functionality.

#### **ONTOLOGIES**

Ontologies are extensions of taxonomies that include not only hierarchical relations but other types of relationships among terms and attributes, as well as rules and constraints. An ontology is considered a type of knowledge representation whereas a knowledge base is considered as an ontology populated with data. In other words, instances of the ontology classes generate a knowledge base.

Ontologies provide a formal and unambiguous description of the relevant notions of a domain. Sharing a common understanding of the structure of information among people or software agents is one of the goals of developing ontologies (Gruber 1993, Musen 1992). Ontologies have been extensively used for the integration of

heterogeneous data and information (Buccella 2009). This work concentrates on the integration or processing of information from different repositories. Ontology merging, ontology mapping and ontology integration are the main integration tasks. Ontology merging creates a new ontology from a set of source ontologies which describe the information to be merged. Ontology mapping relates similar concepts or relations from different sources to each other by an equivalence relation. Finally, ontology integration includes one ontology into another and in this case the second ontology is modified to include new information. Brocella (Buccella 2009) provides a review of proposed geographical information integration proposals and concludes that the nature of geographical information is an important aspect of the data that should be considered. Brocella (Buccella 2009) also concludes that ontology integration methods need to evolve to include new techniques that can handle geographic information.

It is expected that efforts like OWL would produce a semantic web that would allow agents to carry out advanced searches and operations not possible on today's World Wide Web. The current web content (html / xml) is designed for humans not for machine interpretation.

Just like web content was designed for human interpretation metadata alone cannot be used to completely describe all the dependencies in the data. TDB metadata and content information which could be interpreted and extended by computer agents is

needed. Fonseca (Fonseca, F. T. and Egenhofer, M. J 1999) suggest that ontologies can capture the semantics of information and can be used to store related metadata thus enabling information integration. This information integration can lead to integration of heterogeneous terrain databases like it has enabled the integration of geographical information.

### TDB Ontologies

Consider a number of heterogeneous TDBs stored in a repository and that the TDB have an acceptable correlation between the representations. Correlation in this case includes the degree of similarity between the geometry and attributes space. Correlation in geometry between TDB is related to the similarity in terrain surface and cultural feature existence, elevation and location (Schiavone 1997). Changes (i.e. add, delete, modification) in any one of the TDB representation in the repository would bring the system to un-correlated or unbalanced state. Descriptions of the un-correlated state and the environment structure would be used to find (index) a plan that will bring the system back into a correlated state (balance). This mapping of perceptions to actions is implemented by the agent functions (Russell, S. and Norvig, P. 2008).

$\forall(tdb1, tdb2, de1, de2)$

$$structure(tdb1, de1) \wedge structure(tdb2, de2) \wedge notCorrelated(de1, de2) \\ \rightarrow transform(de1, de2)$$

(1)

The above first-order logic expression (1) defines the relationship between a TDB *tdb1* data element *de1* and the TDB *tdb2* data element *de2*. The *structure* predicate provides the terminology that relates to the TDB and data element. The above formula leads to a transformation from *de1* to *de2* when *de1* and *de2* are not correlated as indicated by the *notCorrelated* predicate. The *nonCorrelated* predicate defines a state which will result from tests and measurements, on the two TDBs, that would provide insight into the uncorrelated state between data elements and therefore to the TDBs. When the term on the left side of the formula is true the transformation on the right side will be executed to bring the TDBs representations into correlation.

The challenging part is the generation of description logic statements that accurately describe the uncorrelated state. Description logic statements will be used by the reasoner agent to find a set of transformations that can be used to fix the correlation problem. These description logic statements will be composed of subject, predicate, and object components. For example:

$$\forall(tdb, de) \text{ triangulatedSurface}(tdb) \wedge \text{notOnSurface}(de) \rightarrow \text{adjustElevation}(de)$$

(2)

The statement above (2) will run the *adjustElevation* transformation on the data element *de* if the data element *de* is not on the surface as determined by the *notOnSurface*

predicate. In this case the structure of the TDB includes a triangulated surface for the TDB. To repair this un-correlated state the elevation of the data element will need to be adjusted.

A flexible mechanism is needed to capture the agent knowledge about the environment components and their relationships. But component and relationships for one representation is not enough, it is also necessary to capture the relationships between different TDB representations. This will allow for the determination of equivalent data elements in different TDB representations. For the purpose of accessing correlation and bringing the system back into a balanced state, it is necessary to also have information on how to determine correlation between two TDB representations and how to transform one TDB representation into another. The described ontology representations should allow for the explicit declaration of knowledge and the derivation or inference of other knowledge and relationships.

#### **SUMMARY**

Traditional metadata provides information which can be used to describe the source data and or target format content and origin but it's not enough to support agents for the purpose of establishing correlation between TDB. Environment Data Models are able to provide a complete M&S TDB representation but this representation can be improved by the addition of ontology hierarchies, equivalence classes, and numerical confidence

levels. These extensions to Environment Data Models have been shown by Dobey (Dobey 2003) to improve interoperability between EDMs.

Recent development on description logic and ontology languages are seeking the generation of distributed knowledge base system which allow agents to reason on this content. Ontology languages like Web Ontology Language (OWL) are expected to allow agents to infer information and support intelligence on future Web applications.

A number of ontologies will be needed for the description of the relationships between TDB components, how to determine correlation and how to modify the TDB components. A number of agents will rely on the description of the structure and correlation state that leads to the selection of transformations that will bring the system back into correlation.

The interpretation of changes in a TDB and the impact of changes is an important concept for this architecture. Right now TDB generation system has no memory of the TDBs they generate. Therefore they cannot accepted updated TDB and automatically update other dependent representations. The agents perception of changes will be guided by their knowledge of the changes, the TDB structure and correlation ontologies. The transformation ontologies will be the mechanism which will allow for TDB updates in order to bring the TDBs back into correlation.

### ***Agent Architecture***

In a TDB generation system multiple processes are necessary for the transformation of geographical source data. Just like multiple TDB generation models are needed for the generation of a Common TDB inside the TDB generation system it is expected that multiple agents will be needed to support the new TDB generation system paradigm. If multiple agents are needed to solve a problem, coordination of the actions becomes important.

The problem of deciding which agent actions to implement needs to be solved. In solving this problem, a multi agent system must decide what problems to solve, what knowledge to consider and how to evaluate alternative solutions. The mechanism for solving the multi agent control problem defines the agent cognitive behaviors as well.

This section describes an agent architectures and in particular the agent blackboard architecture. This architecture provides a way for multiple agents to work together in solving a problem of TDB generation system feedback and partial updates. Agent architectures describe the fundamental components of an agent and how they work together (Müller J.P., Singh M. P., Rao A.S 1998). The agent architecture defines the portion of a system that provides and manages the primitive resources of an agent. The choice of features in agent architecture is often made by following a set of assumptions



and driven by the domain and environments in which the architecture will be used. Agent architectures can either explicitly attempt to model human psychology (i.e. cognitive architectures) or simply exhibit some aspects of general intelligent behavior. Modeling human psychology seem beyond the scope what it will take for identifying data element and integrating them into a Common TDB representation. Therefore, it is expected that an agent architecture which provides agents with enough knowledge to do the work and the necessary coordination will be sufficient.

The research question presented in chapter 1 seeks a TDB generation system that will achieve correlated TDB representation among a distributed network. Bi-directional target format updates and partial TDB regeneration are the mechanisms which will enable reduced processing times and bandwidth. The current TDB generation pipeline approach regenerates large sections of the TDB in response to changes on the source data. A paradigm shift in TDB regeneration will need to provide bi-directional updates and partial regeneration to enable updates of only the affected components. To achieve partial regeneration it will be necessary to detect changes and also to understand how these changes affect the terrain database and other representations. Therefore detection or perception changes on the TDB and the identification of dependent components is of great importance. Extensive work has been done on integration of source data from different sources (Buccella 2009), however, identification of changes on target formats has not received as much attention.

For an agent architecture to work in a partial bi-directional TDB generation system it will be necessary for the agent to sense the inputs to the Common TDB and relate those changes to an unbalanced, inconsistent or uncorrelated state. This inconsistent or uncorrelated state will lead to the selection of adjustments or transformation which will modify the collective set of TDB to achieve the best possible correlated description for all TDB. Transformation can be implemented from any one target format to another and changes will only be implemented on the affected data elements.

However this perception it's limited to the current state of the Common TDB. Once the data element changes are implemented other agents may perceive that other changes are needed in order for the Common TDB to be correlated. Therefore, it is expected that multiple agent will be assessing the Common TDB representation. This changing environment will allow the Common TDB to evolve to a state in which all components are correlated.

The knowledge used by the agents will be part generic and part specific. The generic part will provide general classes, roles and axioms of information on TDB structure, dependencies, correlation and transformations. The specific information or instances of the ontology classes, attributes, relationships and roles will come from the specific TDB content.

Ontologies allow for the description of simpler relations which can be used by reasoners to derive more complex relations. It is expected that ontology concept like subsumption, description logic, enrichment, and matching (Buccella 2009) could be leverage to build a more robust and intelligent system. It is also conceivable that as standards and methodology evolve in the ontological science ontology reuse will be enabled. Since this application is spatially divided it also makes sense that changes on one region will be related to the features present in that region. This locality indicates that changes on any one region may be controlled or supervised by a different type of agent.

Consider the typical construction company scenario where a foreman directs the construction job and specialized construction crews perform the actual construction tasks. The order and timing in which the operations are performed as well as the quality of the work is controlled by an experienced and knowledgeable individual. This division of task seems applicable to the set of tasks that will be needed for adjusting the Common TDB. Workers at the TDB data element level will perform the specific construction task as described by their skills. This will include the transformation of geographic source data to target format data elements and target format data elements to geographic source data inside the Common TDB. However the parameters that will generate a correlated Common TDB for all the necessary representations will need to come from a different type of agent. An agent that relies on others to perform the low-

level transformations, but that cares about all other all Common TDB representations and quality of the overall task is needed.

The blackboard metaphor is based on the concept of a group of people each with different expertise and knowledge, all standing around a blackboard deliberating over a problem. The ultimate goal is to solve the problem but no single individual can solve the problem individually. The process begins by one of the persons looking at the description of the problem on the blackboard and realizing that he can contribute to the solution. If anyone can contribute, that person writes their contribution on the blackboard so that all the other people can see it. This process continues until an acceptable solution is reached.

In this multi-agent system people are replaced with agents or knowledge sources. The agents have different expertises and each perceive the problem perhaps from a different angle, with different goals, with a different set of skills. If the problem described in the blackboard matches the agent's knowledge and there is a match for an action, the agent can contribute to the solution.

However, some control is needed over the process. A blackboard controller is normally used to moderate the contributions and determine when the problem is solved. Going back to the construction example the task at hand may be decomposed to into a series

of subtasks which may include: site preparation, foundation, wall construction, and so forth. Individuals that know how to perform the specific task volunteer their skills as they see tasks show up on the blackboard. Supervisors and quality control personnel may access the qualifications for the task and assign the work as well as elaborate on plans sub goals and asses the project progresses.

In the proposed partial bi-directional TDB generation system the lowest level of abstraction is the data elements or the feature primitive inside the Common TDB. For virtual TDB, this data element may be a triangle, while for a constructive TDB it may be a linear feature that describes a roads or river. Simple reactive agents will be used to implement these transformations. Agents of this type will be equipped with knowledge that describes the environment which they are responsible for and how this representation may be transformed and affected. This type of agent perceives the current state of the data element in the Common TDB and proposes its transformation.

There may be a number of transformations that may be possible and the order in which they are implemented may influence the end result. Therefore, there is the need for other types of agents that posses a sense of higher level goals. For instance, a goal may be the correlation of all representations at whatever level of detail is necessary. Other agents may be concerned with TDB performance of the representation, while others may consider target format limitations. The ultimate goal is to find a Common

TDB representation which fulfills the all of the target formats and that includes all of the input data.

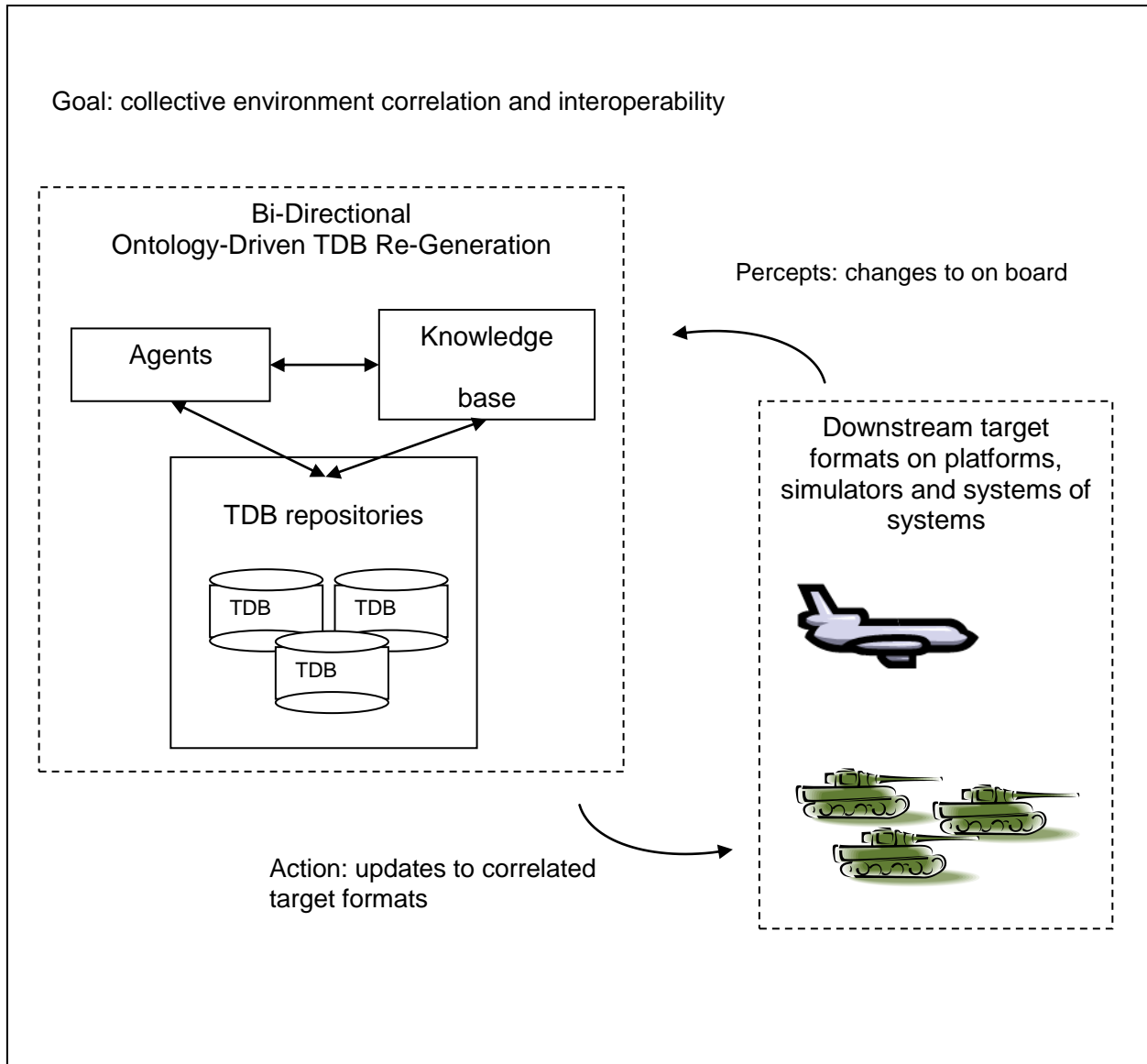


Figure 6 – Network-Focus Agent-Based Ontology-Driven TDB generation system

## **Summary**

Figure 6 shows a block diagram that depicts an agent-based ontology-driven partial bi-directional TDB generation system in which external updates are processed and updates are provided to a TDB repository and downstream target formats on battlefield platforms and systems.

In this system changes are allowed to occur where they are most logical or more convenient (downstream or upstream) and yet maintain consistent representations for all target formats. Changes are allowed on target formats as well as on the TDB repository.

Upstream consistency in response to downstream target format updates represents a shift in TDB generation paradigm. To implement downstream updates the system must be able to recognize external target format changes. The process of recognition of external data updates by the partial bi-directional TDB generation system will need to be smart enough to recognize target format data elements that need to be updated in the internal TDB generation system representation. Since many different target format elements may need to be processed, a flexible data-driven mechanism is needed to represent the knowledge that the system will use to recognize and respond to input. A knowledge base with content and structure information on the external target format and TDB repository provides this information.

The system must also be able to check the internal TDB consistency of the target format as the updates may cause anomalies on dependent data elements within the TDB. For example, if a new building model is added the terrain skin representation may need to be updated to include a building footprint.

After the internal consistency of the one TDB is verified and updated consistency with other correlated representation is needed. For instance, if the update comes from a virtual representation the corresponding constructive, plan view display representations need to be updated.

Finally, data synchronization between the TDB repository and external target format is necessary. Updates of external correlated target formats should require a minimal number of changes and result in no loss of content from the original target format.

This functionality is implemented by format translators. Ideally format translators are not expected to perform partial bi-directional TDB generation functions as part of the back-end or front-end process. They may map attributes or worst case, derive information. If not coordinated or visible the mapping and derivation of information could potentially result in correlation issues.



Agent theory provides agent programs that may be used to solve the perception and reasoning problem in the partial bi-directional TDB generation system. Yilmaz and Paspuletti (Yilmaz L. 2005) describe an agent based system that performs management, alignment and transformation of data models to allow interoperation. Similar management and alignment agents can be used to identify the data changes.

In this network-focused agent-based ontology-driven partial bi-directional TDB generation system data synchronization of internal and external representation, is driven by a knowledge base which stores ontological models of TDB structure, dependencies, correlation and transformations.

Agents detect changes and dependencies using information stored in ontologies which describe the type data stored in the target formats and the dependencies of data elements. In addition, agents use ontologies to answer questions related to correlated implementation updates.

### **Complexity of Traditional Modeling and Simulation Terrain Databases**

M&S applications have different requirements and use different physical models, which results in a different and unique environment data model. The collective intersection of environment data models for different M&S applications represents the set of common data elements among a set of M&S systems. The larger the overlap between the

environment data models the larger the commonality between the application and therefore the larger the potential for correlation and interoperability.

However, to fully describe a given geographical location an infinite number of data elements are required. In order to finitely and efficiently represent reality, each M&S application needs to identify, specify, generate and organize a selected set of data elements to suit the specified simulation objectives. For example, in virtual human in the loop M&S applications the primary users are humans. Therefore, virtual M&S applications make extensive use of polygonal 3D model representations that include textures and other data elements to describe the synthetic environment. In constructive M&S applications autonomous computer agent process are the users of the environment data model. Computer agent processes need information on the environment which can be used to perceive and react to simulation situations. Thus, different M&S applications select different data element abstractions which result in heterogeneous logical and physical models of the environment.

For example, the Close Combat Tactical Trainer, a multi-participant avatar and agent-based training simulation, that utilizes a set of correlated TDB. These TDB include a plan view display format for flat earth viewing, a communication format for representing environmental effects on communications traffic, a Model Reference Terrain Database format for agent terrain reasoning, a Multi-level Routing Support Terrain Database

format for routing vehicles through roads and open terrain, and an out of the window visual format for presence, viewing, navigation, and interaction by human participants operating through various system and human avatars (Watkins, Provost 1994). Each TDB is optimized for its purpose but they all describe the same geospatial location. For example, terrain reasoning information is used primarily by computer-generated agent behavior models to detect, react and plan activities in the synthetic environment. But the same terrain reasoning information may be used by the out of the window format or virtual applications for collision detection, monitor impacts and height of terrain.

The correlation requirements among traditional heterogeneous M&S TDB contrast sharply with the networked but homogenous geographic representation used by Google Earth (Ding, W., Zhu, F., and Hao, Y 2007). M&S target formats for a given TDB also contrast sharply with the shared “other-world” environment representations used by games like World of Warcraft (McGregor 2006). Although Google Earth and World of Warcraft are networked and distributed environments, there are major differences between those environmental representations and TDB representations used in traditional modeling and simulation applications. For example, Google Earth uses a single virtual TDB that enables humans to view and navigate the environment. Google Earth does not provide an efficient TDB for computer agents to inhabit, navigate, and interact with the environment. In other words, the TDB is not does not contain the semantics or information which enables autonomous computer-generated agent

behaviors. Furthermore multiple heterogeneous representations of the environment do not exist at the same time for shared and divergent users and therefore no possibly for TDB correlation errors. While enabling the environment to be shared by avatars of multiple participants at the same time, World of Warcraft lacks the capability to support computer-generated agents in that environment. The World of Warcraft is basically a massively multiplayer online role-playing game that allows a large number of users to interact in a common homogeneous virtual environment. In other words World of Warcraft utilizes a single virtual TDB that was design to supports social activities and interactions between players, not agents (Chen V.H.-H., Duh H.B.-L 2007). Whereas in traditional distributed M&S military training applications multiple, concurrent uses of a geographic region of the earth requires multiple divergent yet correlated TDB so that interactions between participants in the shared space experience shared outcomes that are meaningfully correlated and interoperable for all.

Clearly, interoperability among traditional, heterogeneous M&S applications is a complex issue which requires not only an environmental data model, but also an agreement on spatial coordinate systems as well as source enhancements (Schiavone 1997). Human interactive and virtual applications normally require visual and/or sensor representations so that humans can navigate through and interact with the environment as well as perceive and interact with the avatars of other participants and software constructed autonomous and semi-autonomous agents that share the environment.

Computer agents need formats that enable them to perceive and rationalize about the environment so as to inhabit, navigate, and interact with the environment. Further, to enable meaningful interaction with human participants the formats used by the computer agents and human participants must be correlated. Some M&S applications that support human and agent shared interactions include SIMNET and CCTT (Watkins, Provost 1994).

Correlation errors occur between different simulation systems when TDB features and interaction outcomes are rendered differently between formats (Simons R. 2004). Some of the correlation errors include numerical inaccuracy, algorithmic inconsistency, parametric inconsistency, and temporal inconsistency. The differences in the representational polymorphism, completeness and efficiency of the TDB result in potential interoperability problems. Even if the same source data is used for the generation of formats the differences in abstraction or representations of each M&S application may induce line of sight, detection, mobility, and other correlation problems.

Over the years several common environment representation models and formats have been developed in an effort to solve the interoperability and correlation problem faced by distributed, M&S heterogeneous applications. In the 1980's, the Department of Defense (DOD) initiated a development program to address database generation costs of visual databases. The resulting Standard Simulation Database Interchange Format

(SIF) attempted to reduce the amount of data transformations required to generate various visual databases. Although this approach worked for aircraft simulation environments it was not as successful for a larger set of M&S applications that involved ground level navigation and negotiation of the environment by avatars and agents (Schiavone 1997). Subsequently the US Defense Modeling and Simulation Office initiated a project to develop a richer Synthetic Environment Data Representation and Interchange Specification (SEDRIS) to address representation and interchange problems of these more demanding heterogeneous networked and distributed applications. Among other things SEDRIS defined a data model, APIs, classification and attribute standards and tools for the unambiguous representation and interchange of TDB (Carson 2000). More recent trends such as the Portable Source Initiative (PSI) (Nichols 2003a) and the Common Database (CDB) (Simons R. 2004) are focusing on the use of commercial standard formats for the representation of the TDB using open and widely used source formats.

### **Previous TDB Generation systems**

As presented on the previous chapter the current TDB generation system is a pipeline process that is primarily unidirectional. The end products of the TDB generation system, otherwise known as the target formats, do not store any information that allows for update of the geographical source data that generate them. This section reviews some of the well known and documented TDB generation system implementations. This list of

TDB generation systems is by no means an all inclusive list but rather a list of significant TDB generation systems.

The review starts with TDB generation systems which provided terrain visualization capabilities. This system allowed for the visualization of the terrain. At the beginning these systems were stovepipes which developed TDB for specific hardware. The next large step in the evolution of TDB generation system was the introduction of network simulation. Distributed simulation systems require a different set of optimizations and correlation between heterogeneous target formats of importance. It is about the same time the introduction of computer generated forces added a new target format to the distributed networked simulators which had different TDB generation requirements. Correlation and interoperability became important. The TDB generation process was adapted to not only consider virtual TDB but to include all the features and attributes necessary for the generation of correlated sets of TDB. Following the development of correlated TDB, TDB generation systems focus their attention on rapid TDB generation system from common repositories of geographical source data. Within each mayor development TDB generation systems are arranged chronologically.

### ***TOPSCENE***

The Tactical Operational Scene (TOPSCENE) is an operational virtual training system that lets aircrew and battle commanders rehearse their missions before going into

combat. TOPSCENE was originally developed by Lockheed Martin for the Navy Aviation Training Systems Office and latter used by other agencies like the Navy, Marines, Army and Air Force. Back then it provided high fidelity and short production time, as well as rapid incremental updates of existing TDB.

TOPSCENE provides a rapid and accurate TDB generation system which was capable of converting terrain elevation, imagery from satellites and other sources into a 3D TDB of the real-world. The first step in the TDB generation is the generation of 2D image mosaics of the area of interest. After mosaic of images are generated; models representation of buildings, trees, and targets are overlaid onto the 2-D image data before creating the final integrated 3-D database. TOPSCENE TDB tools provide options to utilize the TOPSCENE TDB in its native form or to export it for use on non-TOPSCENE virtual applications.

### ***SOF ATS***

The Special Operation Forces (SOF) Aircrew Training System (ATS) was design to support very large high fidelity TDB in support of the MC-130H flight simulator. This mission rehearsal TDB generation system was designed to produce a TDB in 48 hours and therefore it was highly automated and allow for the execution of many tasks in parallel.



Trott (Trott 1996) describes the SOF ATS as a TDB generation system that stores all data in an internal TDB. This internal TDB was organized in 4 correlated layers;

- terrain elevation data in grid format
- vector feature with attributes
- image-based textures
- 3D models of features both generic and specific

Editors for each TDB layer allowed modifications at each layer independently. The internal TDB was stored in geographic coordinates with respect to the WGS84 ellipsoid with resolution of 1/1000 arc-sec (1 inch). Features and attribute codes were stored in the internal TDB on an expanded set of DFAD feature codes and attributes. These vector features were stored in ESRI ARC/INFO format and organized into point, line and area feature coverage's. Elevation data was stored at 1 arc second resolution. The TDB generation system internal TDB contained a superset of all the info necessary to create the target run-time visual, infrared and radar TDBs.

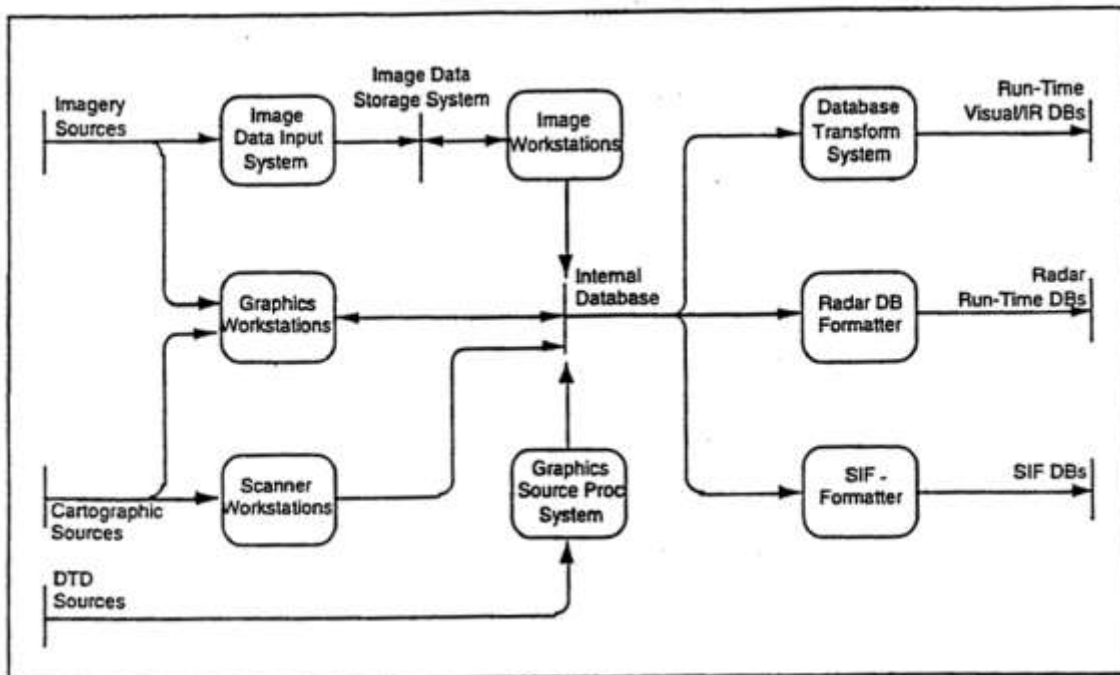


Figure 7 - SOF ATS TDB generation system Data Flow (Trott 1996)

Figure 7 shows the Data flow diagram used by Trott (Trott 1996) to describe the tools used by the SOF ATS TDB generation system. In Figure 7 the Image Data Input systems provided support for softcopy and scanned imagery for a number of Image Processing Workstations. The Image Processing Workstations were used for the generation of geo-specific ground textures and gridded elevation data geospatial source data for the TDB generation system. Softcopy image control points, rectification, stereo rectified image patches and mosaics were implemented by this tool set.

The Graphics Source Processing System was used for loading Digital Topographic Data (DTD) from authoritative sources like NGA. The Scanner Workstations was also used for the scanning of maps and to generate and attribute digital vector data.

Graphics Source Processing System workstations running ARC/INFO and AutoCAD and other software were used for geographical source data assembly and processing. These functions included editing the output products of the Image Processing Workstations, digitizing features, producing textures, feature data and quality control of the final database.

A workstation running EaSIEST was used to create 3D models and generic clusters of 3D models that were distributed randomly within a geographical area.

Once the internal TDB was generated, export (back-end) was possible through the Database Transformation System, Radar DB formatter and the Standard Interchange Format (SIF) Formatter to the necessary target formats.

#### **STANDARD SIMULATION DATABASE INTERCHANGE FORMAT (SIF)**

In the 1980's, the Department of Defense initiated a a program to address the high cost of visual TDB generation. The resulting Standard Simulation Database Interchange Format (MIL-STD-1821) standard was developed as an attempt to reduce the costs related to virtual TDB generation. Although this approach worked for aircraft simulation

TDB was not as successful for a larger set of M&S applications that involved ground level navigation and constructive simulations (Schiavone 1997).

#### **SYNTHETIC ENVIRONMENT DATA REPRESENTATION AND INTERCHANGE SPECIFICATION (SEDRIS)**

Subsequently the US Defense Modeling and Simulation Office initiated a project to develop a richer Synthetic Environment Data Representation and Interchange Specification (SEDRIS) to address representation and interchange problems of these more demanding heterogeneous networked and distributed applications. Among other things SEDRIS defined a data model, APIs, classification and attribute standards and tools for the unambiguous representation and interchange of TDB (International Standard ISO/IEC 18025).

#### **PORTABLE SOURCE INITIATIVE (PSI)**

Currently the trend in TDB interchange is looking at portable value added external source data (Nichols 2003b) which is supported by commercial off-the-shelf (COTS) tools. NAVAIR developed the Portable Source Initiative (PSI) to allow for the non-automated generation of external source data in formats widely used (de-facto) in the industry. PSI provides a set of standards and guidelines for the generation of aircraft simulation TDB based on commercial de facto standards. PSI has demonstrated that significant savings in time and money can be achieved (Nichols 2003b) for the generation of aircraft simulator TDB.

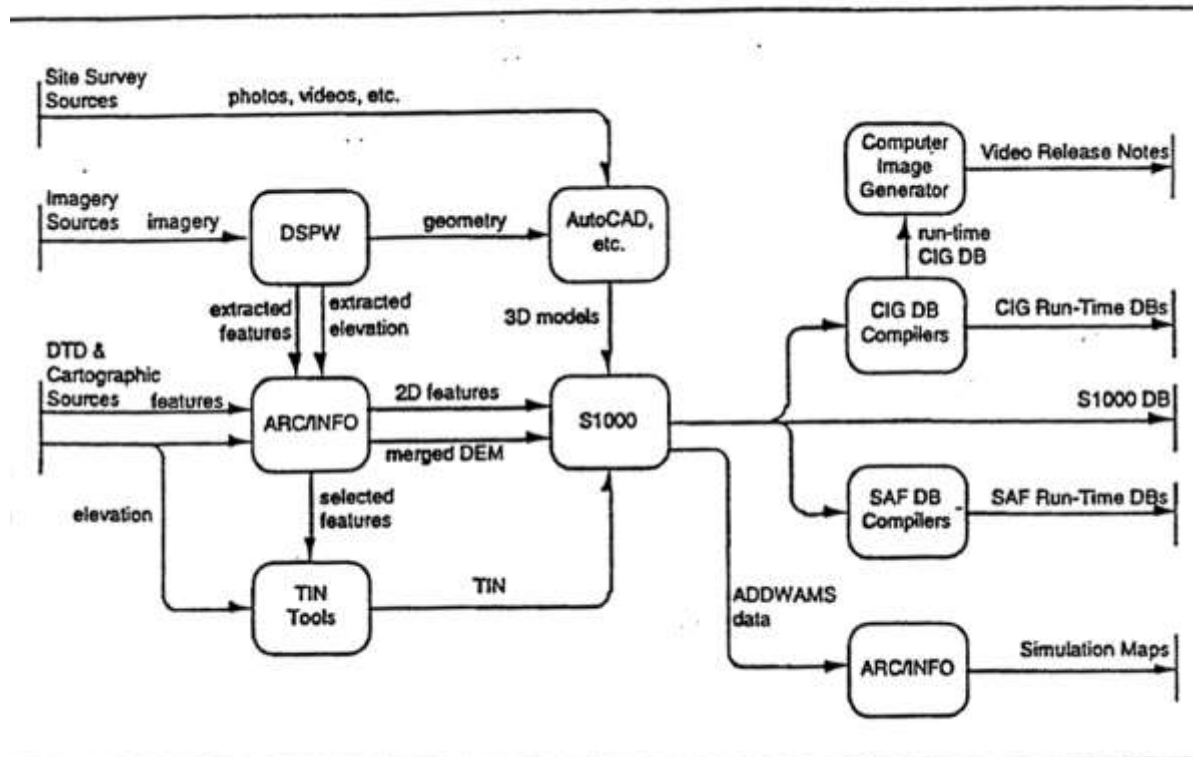


Figure 8 - TEC DPC DBGS Data Flow (Trott 1996)

### ***TEC DPC - S1000 Toolset (1980-1995)***

The Topographic Engineering Center (TEC) Digital Products Center (DPC) was developed to support TDB generation for a number of distributed simulation exercises using Simulator Network (SIMNET) simulators and other DIS-based systems. The TEC DPC was capable of producing terrain databases in a variety of run-time and interchange formats and for a variety of hardware and software capabilities.

The SIMNET program introduced the use of a multiple simulations in a true combined training environment. SIMNET provided real time local area network simulation with large number of vehicles on a TDB. SIMNET also included the use of Semi-Automated Forces (SAF). As mentioned earlier, SAF simulators use a different type of TDB which is primarily based on 2D map features and attributes that allow SAF models and behaviors to reason on the synthetic environment.

The need for the generation of consistent or correlated visual and constructive simulation TDB added a new set of requirement for TDB generation process and system. SAF applications rely more heavily on the attributes and topology of the features of the TDB. These requirements were not shared by virtual applications and required different TDB generation process and considerations.

Figure 8 shows the Data flow diagram used by Trott (Trott 1996) to describe the tools used by the TEC DPC TDB generation system. In Figure 8 the Digital Stereo Photogrammetric Workstation (DSPW) was used for image processing, ground control, orthorectification and digitizing of geographical features from imagery.

The ESRI ARC/INFO GIS application was used for area selection, projection, datum definition, evaluation of source data, datum conversion of feature data, feature code and

attribute translation, filtering, thinning, generalization, edge matching, buffering, editing and geospatial functions.

The Triangular Irregular Network (TIN) Tools were used for the generation of the polygonal terrain surface from geospatial source data provided by the National Imagery and Mapping Agency (NIMA) now NGA Digital Terrain Elevation Data (DTED) and selected integrated features. AutoCAD application was used for the generation of polygonal 3D models.

The TDB geographical source data generated by the DSPW, ARC/INFO and TIN tools was input (front-end) into the Loral Advanced Distributed Simulation S1000 TDB generation system for the generation of the integrated TDB. Cultural features imported to the S1000 included vegetation features like canopies and tree lines, land polygon soil types, colors and textures, and point features for 3D models.

Once build a variety of TDB compilers (back-end) were used to converted from the internal S1000 TDB format to specific target formats. For example virtual TDB included Vistaworks, GT100, Multigen OpenFlight. Export to SAF and interchange formats was also possible (Trott 1996).

Like the previous described TDB generation system the TEC DPC utilized an internal TDB generation system representation for the generation of TDB and back-end exports for target formats. The TDB generation system internal TDB was processed through a number of back-end process to generate the target formats for computer image generator, SAF and Maps.

What was different about this TDB generation system is that TDB generation process and system evolved to include not only the generation of virtual TDB and maps but also the generation of SAF TDBs. SAF target formats required a different type of information that required special preprocessing of feature data. For example, road and rivers representations were derived from hand edited linear vector features. This new process complicated the TDB generation process. Topological and feature attributes were more important than before and correlation and interoperability between a number of network TDB representations became of paramount importance.



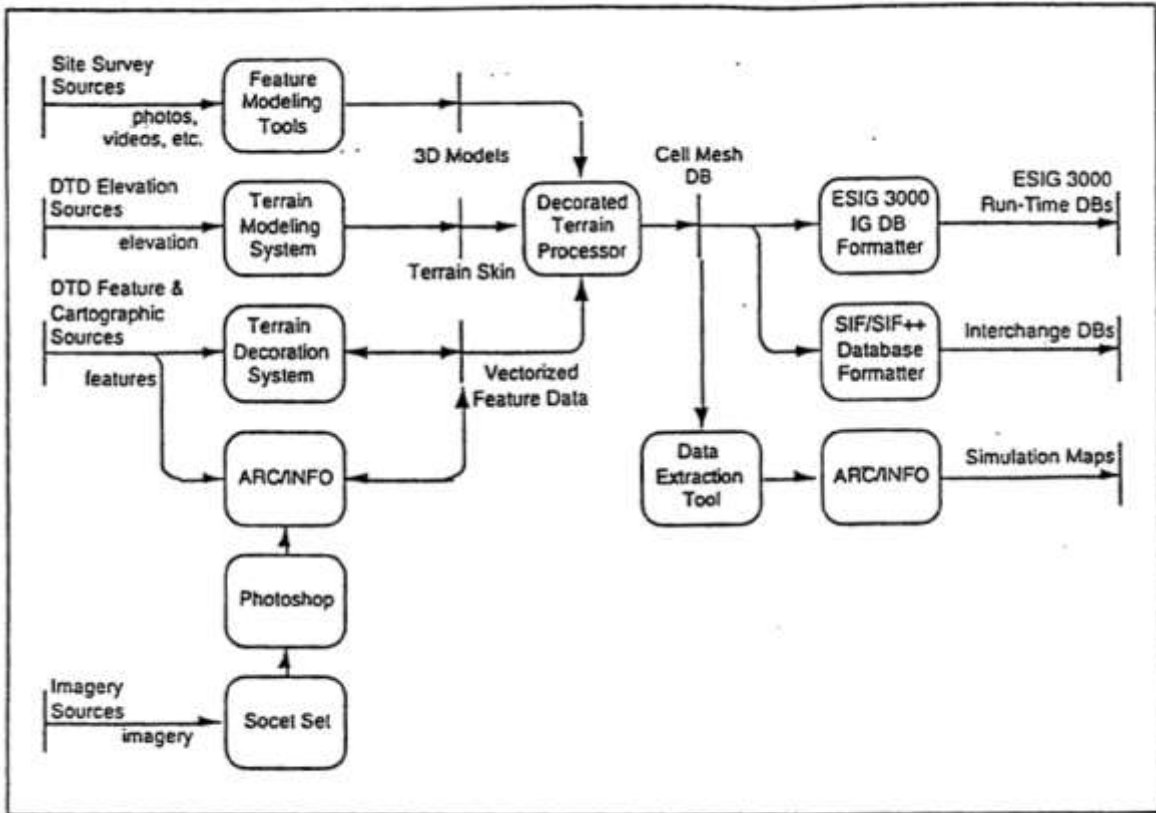


Figure 9 - CCTT Terrain DBGS Data Flow (Trott 1996)

## CCTT

The Close Combat Tactical Trainer (CCTT) program build on the experience gained with SIMNET and developed a more realistic virtual environment in which units could collectively train and a wide variety of training conditions.

Trott (Trott 1996) describes the CCTT TDB generation system as producing both virtual TDB for the ESIG-HD/3000 image generator (IG) and interchange TDB formats. Figure

9 shows the Data flow diagram used by Trott (Trott 1996) to describe the tools used by the CCTT TDB generation system. In Figure 9 the Socet Set block included the General Dynamic Engineering System (GDE) SOCET toolset which was used to orthorectify images using terrain elevation in DTED. The Adobe Photoshop tool was used for image processing and manipulation of imagery and photos to create textures which can be applied to terrain futures.

The Evans and Sutherland EaSIEST TDB generation system was used for terrain elevation and feature data processing and integration. The Terrain Modeling tool was used to load DTED, re-sample, and generate the polygonal terrain surface. The Feature Modeling Tool was used to load and process geographical feature data in formats like NIMA DFAD. Features could be edited, thinned, and process using the Feature Modeling Tool. The Terrain Decoration System was used to integrate the terrain skin and geographical features into polygons by replacing intersections, overpasses, bridges and 3D features with 3D models as well as adjusting roads, railroads and rivers using cut and fill techniques.

The internal format of the EaSIEST TDB Generation system is called the General Database Format (GDF). From the GDF database, the target formats were compiled. The Data Extraction Tool was used to extract data from EaSIEST TDB generation

system and export to ARC/INFO for map creation. The SIF and SIF++ formatter were used for the export of interchange formats.

SIF++ was used by the CCTT API process to prepare the geospatial source data for the generation of the CCTT Correlated Databases. These compilers used SIF++ to produce a correlated set of TDB which included the Plan View Display Database, Communications Database, Model Reference Terrain Database (MrTDB), and Multi-level Routing Support Terrain Database (MrsTDB).

### ***WARSIM 2000 - Terrain Data Fusion System (TDFS)***

The Joint Simulation system Warfighter's Simulation (WARSIM) 2000 is an Army constructive aggregate simulation with realistic operational conditions for education, training, and mission rehearsal. WARSIM provides support for Battalion through echelons above Corps scenarios with the goal of reducing the resources necessary to prepare, execute and evaluate wargames and similar simulation events.

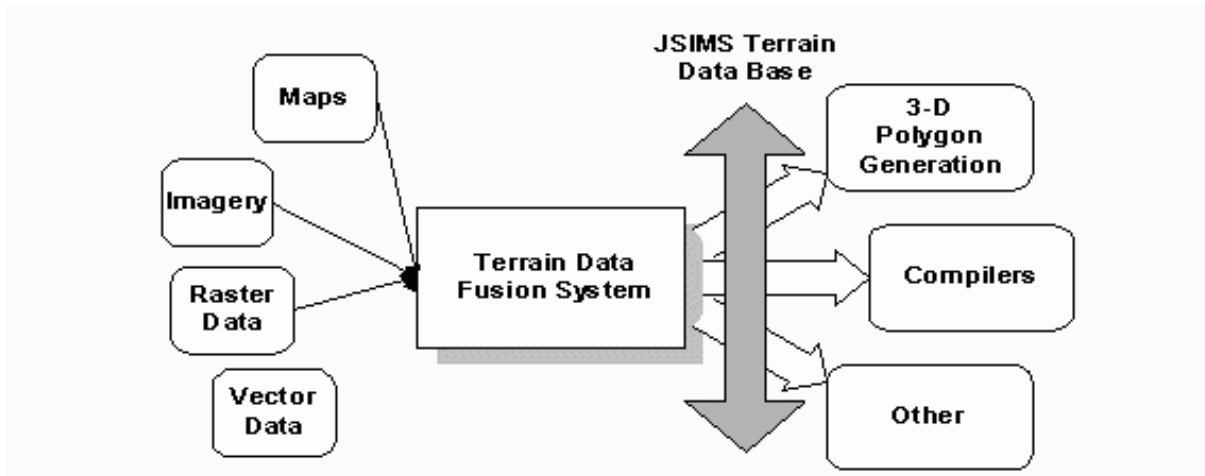


Figure 10 - TDFS data flow (Songer et al. 2000)

The Joint Simulation system WARSIM program uses the Terrain Data Fusion System (TDFS) to import process and store all spatial data for the generation of WARSIM TDB. Figure 10 shows the WARSIM TDFS Data flow diagram used by Songer to describe the TDB generation system process (Songer et al. 2000).

The system core is a rules-based system built on top of the ESRI Arc/Info GIS application. Standard geographic source data is input into the TDFS and converted to an internal format. Internally the TDFS uses a Terrain Common Data Model which provides an unambiguous means of communicating the semantics of the TDB features and attributes to WARSIM (Salemman 2007) compilers.

Prior to WARSIM the creation of the TDB was often left up to the developers of the simulation. Furthermore, the organization and content of the TDB was driven by the immediate needs of the company or organization hardware and or software that created for the simulation. WARSIM developed a process for the population of a general geospatial data model for describing objects needed by the synthetic environment. Songer et al (Songer et al. 2000) believe that the process of creating a TDB is dependent on three key elements:

- 1) A data model which meets the requirements of the application.
- 2) Automated system to process input data into the data model.
- 3) Geographic source data which is sufficiently robust in terms of geospatial detail for the end-use implementation.

The data modeling work at WARSIM lead to the development of the Terrain Common Data Model. Inputs from the Army, user community and software behavior developers were used to describe the required simulation feature objects and their attributes into a Terrain Common Data Model (Songer et al 2000).

To allow for the efficient processing of large quantities of geospatial data an efficient method of geospatial data organization is used. All the information about the data or the metadata is stored in a set of Microsoft Access databases (Miller, et. al. 2000). These

databases store such information as: coverage locations, names, dataset availability, processing history, and mapping rules. Essentially, the metadata contained within the various Access databases embody an operational version of the Terrain Common Data Model which supports project status, structural and historical information.

Once processed and attributed, the Terrain Common Data Model geographic source data is the input to WARSIM SNE compilers which are used to generate the WARSIM TDB.

### ***TARGET***

The Training and Rehearsal Generation Toolkit (TARGET) is a hybrid air and terrain TDB generation system. This TDB generation system is able to draped imagery over polygonal terrain, import vector data to generate virtual and constructive TDB.

TARGET also generates virtual TDB with multiple level of detail with feature blending capabilities. In TARGET terrain features of homogenous characteristics are delineated with area features. The attributes of this homogeneous area features are used by the SAF models and simulation as well as the drive thermal, night vision, and radar models and simulations.

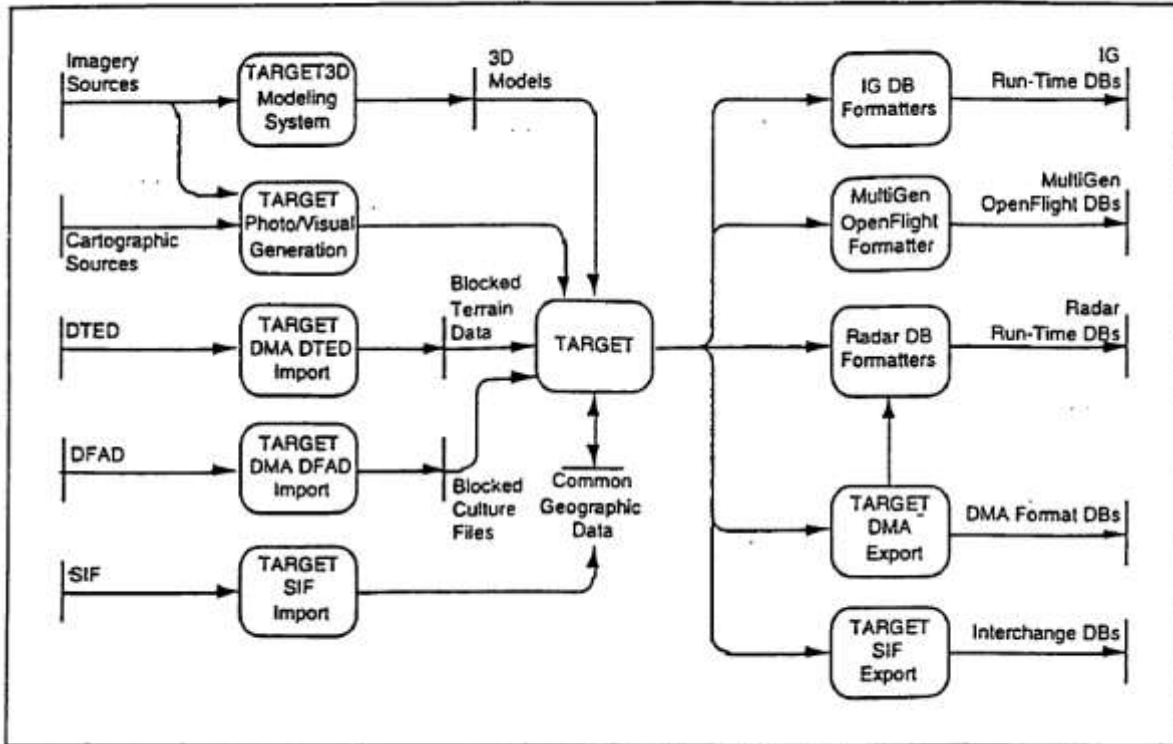


Figure 11 - TARGET TDB generation system Data Flow (Trott 1996)

Figure 11 shows the Data flow diagram used by Trott (Trott 1996) to describe the tools used by the TARGET TDB generation system. This toolset operated interactively or in batch mode. TARGET stored all data in a single, integrated internal TDB which allowed for visualization and edit of the TDB during interactive TDB construction.

In Figure 11 the TARGTE 3D Modeling system was used for the creation of 3D models.

The TARGTE Photo/Visual Generation System was used for the identification of control points for re-sampling, warping, creating of image inserts and other image processing functions.

Import/export of DTED, DFAD and SIF allow terrain elevation, feature data and interchange formats to be imported and exported by the TDB generation system.

Terrain tools in the TARGET TDB generation system were used for the creation and editing of the internal TIN representation which was generated from terrain elevation source data imports. A Surface Modeler was use for the manipulation and editing of feature data, including edge matching, connecting roads and river networks, digitizing features from imagery and so forth. Cell Texture was used for the creation of both generic and specific texture maps.

A variety of target format exports were provided for virtual TDB like OpenFlight, for radar TDB, and interchange like SIF as well as NGA formats.



## SE-CORE Database Virtual Environment Development (DVED)

The SE-CORE systems and components are still under development at this time but this effort is expected to provide a Common Virtual Environment which can support Live, Virtual and Constructive Training Environments (Shufelt 2006). The Common Virtual Environment is expected to provide commonality of all training elements in the Army virtual domain while the OneSAF environment will provide a common environment for the constructive domain. The SE-CORE element that will provide the Common Virtual Environment for all Army virtual application is expected to be Database Virtual Environment Development (DVED).

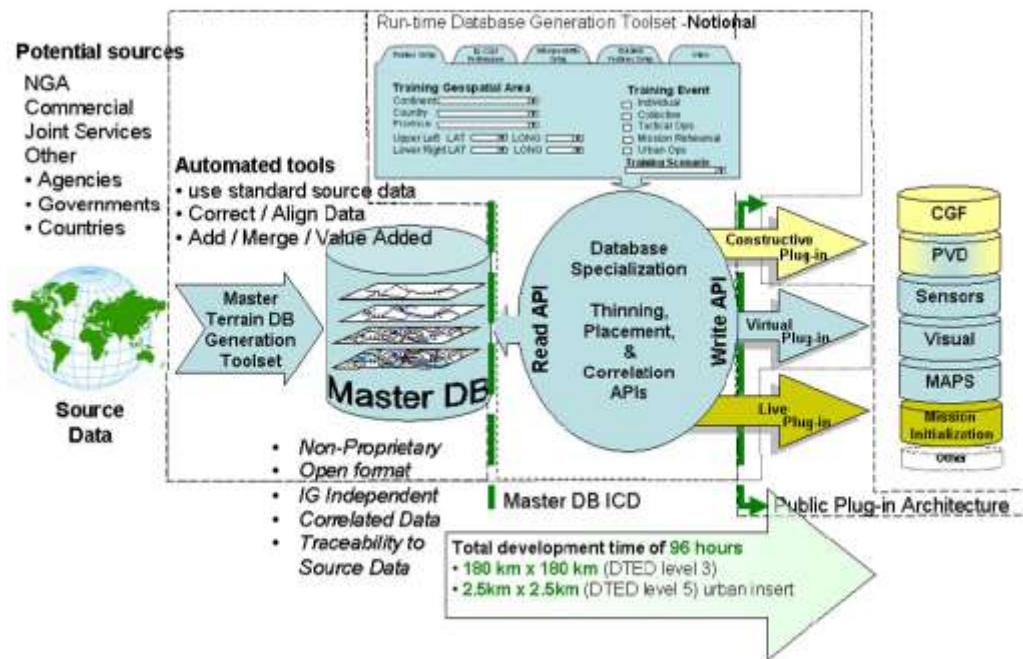


Figure 12 - SE-CORE TDB generation system (Shufelt 2006)

The DVED TDB generation system is referenced as the Standard / Rapid Terrain Database Generation Capability and its main components are shown on Figure 12. The main components of the DVED TDB generation system are;

- Master Terrain Database Generation Toolset
- Master Database (MDB)
- Runtime Database Generation Toolset.

The Master Terrain Database Generation Toolset is a set of commercial off-the-shelf tools that create, process and modify local geographical source data for the MDB. In this function the Master Terrain Database Generation Toolset provides a front-end for the import of data into the MDB.

The MDB contains local geographical source data which is ready for processing into a representation which supports the target formats. In a sense the MDB becomes a repository of value-added local geographical sourced data which is available for the generation of target formats. The MDB is populated with a union of authoritative source data layers and is a combination of local geographic source data which includes terrain elevation, feature vector data, geo-specific imagery, geo-typical textures and 3D models.

The geographical source data in the MDB is extracted and brought into the Runtime Database Generation Toolset where it is processed into the necessary expanded geometry representations which are needed for the export of target formats. In DVED this expanded geometry representations can be considered as the Common TDB from which all the target formats are generated. Therefore this common TDB representation on the Runtime Database Generation Toolset must contain enough information for the generation of all the necessary target formats.

Furthermore, like in CDB, changes in the expanded geometry representation cannot be fed back into the MDB. The actual formatting and export of the Common TDB into target formats is done by publisher applications (back-end) as it was done in the CDB. However, the publishers in DVED are not expected to support real-time publishing like CDB. The publishing applications in DVED serve as the back-end processes which format the Common TDB into the target formats.

In a similar way as CDB, the DVED process does not support modifications of the target format. Modifications are only allowed on the local source data contained in the MDB. Processes in Runtime Database Generation Toolset automatically extract MDB local geographical source data and bring it into the Runtime Database Generation Toolset to generate all the necessary expanded geometry representation which will be later converted into target formats.

In DVED, the set of TDB generation models that translate the local geographical source data into the common TDB are called Culture Compilers. If any one of the target formats needs modifications to repair problems or anomalies, the target modifications must be translated to equivalent modifications on the MDB local geographical source data. Furthermore, since the expanded geometry representation contained in the common TDB depends on the Runtime Database Generation Toolset generation models, there is the additional possibility that changes will be needed the Runtime Database Generation Toolset models.

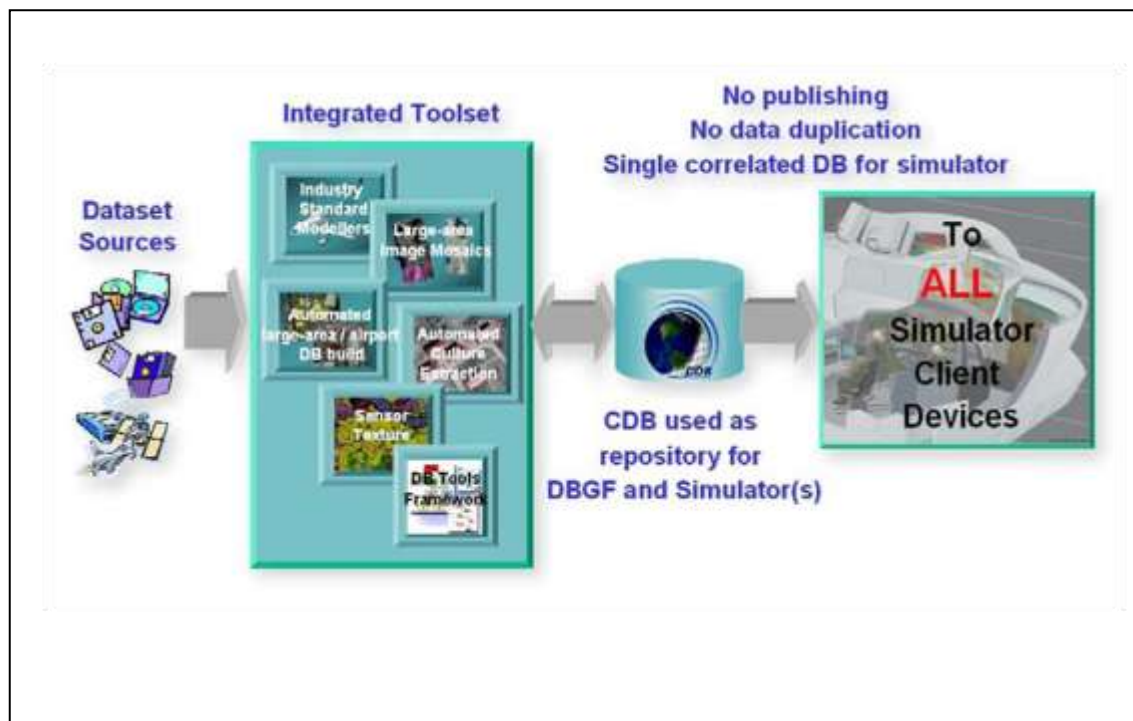


Figure 13 - CDB TDB Generation System (CAE USA Inc 2007)

### ***Common Database (CDB)***

The Common Database was developed by the U.S. Army Special Operations Aviation Training and Rehearsal System project (Simons R. 2004) in support of the US Army 160<sup>th</sup> Special Operations Aviation Regiment at Fort Campbell. The Special Operations Aviation Regiment employs mission rehearsal in synthetic environments as part of their continuous operations and therefore requires up-to-date TDB representations of the real world.

Simons and Lagace (Simons R. 2004) developed a TDB generation system that attempts to eliminate correlation issues related to non synchronized local source data and target formats. This TDB generation system, shown in Figure 13), uses a single homogenous runtime database or Common Database (CDB) which is used to update the runtime representations of a set of client network simulators in real time. The CDB is composed of independent layers or data sets which contain terrain elevation information, imagery, materials, cultural features, 3D culture and models (CAE USA Inc. 2007). These layers of information are represented internally using standard commercially available formats which include GeoTiff, JPEG2000, ESRI Shape files, and OpenFlight (CAE USA Inc. 2007). The CDB is also divided into tiles (bound by latitude and longitudes) which include a static synthetic environment representation of the whole world each one containing one or more specific set of data sets.

Among the main objectives of the CDB are the elimination of data duplication and correlation errors and the timely updates of target formats. Target format correlation is mitigated by generating the runtime representations from a single Internal TDB representation. In this TDB generation system, the local geographical source data and the expanded geometry representation are included in the CDB. In the CDB the duplication is eliminated by using a single representation for the TDB, thus eliminating the need for multiple compilations of the data into device specific virtual target formats. Target formats like visual, sensor, SAF and others are generated from the same CDB, therefore increasing correlation between these heterogeneous formats (CAE USA Inc. 2007). Note that only one virtual representation is needed as all the target formats share a common CDB representation. Runtime publisher applications perform the back-end functions which translate the CDB representation into target formats. This process synchronizes the CDB and the target formats on the simulators.

The approach taken by the CDB is similar to that of dynamic environments in that the environment is generated in real-time. However, the processing flows from CDB local source data instead of from runtime events at simulation time.

This TDB generation system regenerates the target format in response to changes in the CDB. The expanded geometry representation is regenerated whenever the local

source data changes in the CDB. Yet, in this implementation there is still no way to feed back changes on the targets database formats to the CDB or from the expanded geometry representation to the local source data. Nevertheless, since the CDB is composed of commercial off-the-shelf tool formats it is possible to operate on the CDB expanded geometry representation to fix anomalies.

Changes move from CDB to the target formats only. The back-end process update the target formats as needed and maintains consistency on all the target format implementations, thus achieving correlation between all target formats. Similar synchronization does not exist between the CDB expanded geometry representation and the local source data. This is still a one-way update pipeline process where data flows from the local geospatial source data to the expanded geometry representation and from there, to the target formats.

It is also important to note that the CDB approach also generates complete blocks of data instead of updating only the affected TDB data elements. For example, if one road in a transportation layer or data set is modified, the complete data set must be processed. This may include one or multiple target format blocks. These blocks of data may be as large as one degree by one degree geodetic tiles.

TDB generation systems up to this point are primarily concerned with the generation of TDB for visualization and or mission rehearsal. These M&S applications share some of the Command and Control requirements for rapid TDB updates for visualization and fidelity to the real world state. To achieve this, these systems rely on imagery draped over terrain with a limited number of 3D features and view point which is normally high above the ground and include large fields of view.

Although the cultural features may be integrated into the terrain the number and complexity of these features is small as compared to applications that operate on the ground. The following TDB generation systems address the generation of TDB for ground operations and on network environment.

### ***Summary***

This section is a summary of the TDB generation systems presented in this chapter. The main finding of the literature review of prior TDB generation systems was that simulation interoperability requires careful modeling and planning. The TDB generation systems discussed above did not foresee the need for additional attribution and interoperability with future systems. At the time they were developed they fulfilled the requirements for systems they were developed to support. Since most of the TDB systems were built through stove-pipe funding, there were few if any requirements or



resources to address TDB maintenance over time in an interoperable, b-directional, distributed simulation environment.

TDB generation systems have progressed to take into consideration the features and attributes needed for correlation of distributed heterogeneous target formats. The processing of geospatial source data needs to take into consideration common TDB requirements for all the systems that are expected to interoperate with the TDB.

The selection and attributes of the virtual TDB features is primarily driven by the supports of image generation functionality. For instance, in out the window applications these attributes include color, texture, surface normal and similar attributes which supported the rendering of a 3D environment. On sensor applications the feature attributes require materials classifications information which is used by sensor models to render a visual representation of the environment as seen through that sensor. For example polygons could be attributed as grass, water, dirt, asphalt, concrete and other materials. More advanced sensor models process material as a raster of values similar to those used to texture the visual TDB.

Early virtual TDB generation systems like TOPSCENE and SOF ATS generated TDBs which were characterized by the use of polygonal surfaces with orthorectified satellite imagery to provide a visual representation of the mission space. These TDB generation

systems like this were primarily driven by image and geographical feature processing tools. Initially a small number of cultural features were added to this environment in support of training and mission requirements. With the evolving requirements and advances in processing and image generation hardware and the availability of geospatial source data the number 3D features on the TDB increased. However, the number of these features included in the TDB was and is still primarily driven by the application frame rate requirements and hardware performance constraints.

Geographical feature processing tools are used to import geospatial source data products, resolve anomalies, attribute and augment the cultural feature data with more recent information. The base geospatial source data is primarily provided by agencies like NGA. Geospatial feature data used to be primarily developed for the generation of maps and support of command and control operations. However, with the addition of network simulation applications like SIMNET and CCTT the need for distributed and heterogeneous TDB feature rich TDB was added. The addition of constructive and SAF applications added the need for TDBs with a different set of attributes than those used before. Geographical feature content became a stronger requirement which required more careful consideration and planning of common and interoperable TDB regions. In order for these heterogeneous simulations to interoperate correlation between the TDBs data elements was necessary.

In addition to the multiple representations of similar features and the distributed simulation support multi-resolution models are added. Closer the interaction with the environment requires a larger number of features on the TDB. For example, ground vehicles require more detail on obstacles than flying aircraft. Therefore heterogeneous networked simulators include multiple TDBs at multiple resolutions. This multiple resolutions are driven by simulation requirements and hardware limitations.

Early TDB generation processes were stove pipe systems tuned for the generation of specific homogenous TDB. Seeking TDB re-use and interoperability between dissimilar simulators gives birth to interchange formats like SIF and SEDRIS. However the interchange formats cannot take into account information that is not included in the TDB.

Building on these new requirements TDB generation process like the WARSIM Terrain Data Fusion developed terrain models like the Terrain Common Data Model which contain sufficient information to describe all the features needed by a group of simulation models. However these efforts primarily concentrate on the needs for constructive attributes. More recent efforts like SE-CORE are attempting to provide similar standards for the generation of virtual TDB. Furthermore FCS is not only considering virtual and constructive simulation but also the use of command and control applications and embedded training.

In general, the generation of the target formats is based on the geographical source data that is selected for the generation of a set of TDB. The geospatial source data is transformed by the TDB generation system into an internal representation which contains enough information for the generation of all the required target formats. From this internal TDB generation system representation a correlated set of target formats are generated.

However, it is inevitable that M&S systems will evolve and new simulation capabilities will be added to existing as well as new systems. Therefore, requirements will change and different feature content and attribution will be needed. TDB generation systems need to evolve and accept new modeling requirements and perform updates in a timely fashion. As we move into network centric operations distributions of TDB updates will also need to evolve. Smart system that can perform incremental generation and updates is a natural transition for TDB generation systems.

## **CHAPTER 3: THEORETICAL BI-DIRECTIONAL ONTOLOGY-DRIVEN TERRAIN DATABASE RE-GENERATION ARCHITECTURE**

This chapter describes the theoretical aspects of an alternative partial bi-directional TDB Re-Generation architecture called the Bi-Directional Ontology-driven Terrain Database (TDB) Generation Architecture. The theoretical model of the Bi-Directional Ontology-driven TDB Re-Generation Architecture uses agents to control partial bi-directional TDB updates from up-stream and down-stream sources. Like in the generic TDB generation system (reference section A Theoretical Pipeline TDB Generation System) the back-end and front-end processes are assumed to only implement data import and exports for the TDB generation system. The primary focus of this chapter is the description of the mechanisms which allow for the incorporation of changes and the generation of updates of only the affected components. The key constructs and significant architecture components as well as the relationships between the components are presented.

The interface view of the theoretical architecture is shown on Figure 14 below. In this diagram the terrain database changes from any number of fielded target formats clients can be provided to the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server. Figure 14 shows the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server connected to a number of fielded client systems which have or use a target format. Any one of these N clients may provide changes to the Bi-Directional

Ontology-driven TDB Re-Generation Architecture Server. After processing the changes from the N client the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server provides updates to the remaining N-1 client. Clients incorporate the updates into the local target format to maintain the correlation of the collective set of TDB.

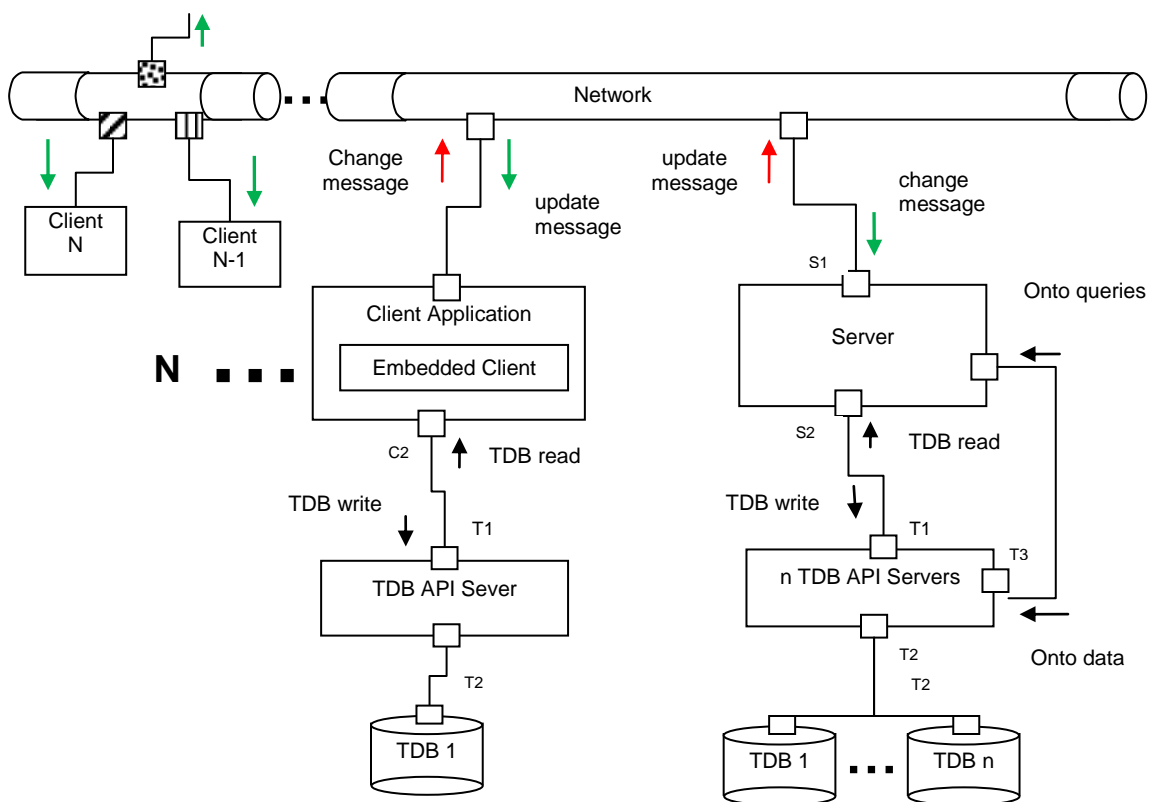


Figure 14 – DODAF SV-1 of the Bi-Directional Ontology-driven TDB Re-Generation Architecture (system interface view)

On arrival of TDB changes at the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server, a TDB update process is triggered by the new geographical data. Using the provided TDB changes the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server updates the internal TDB representation with the changes and starts a process that updates all other TDB representations.

The analysis, modification strategy and incorporation of changes in this Agent-based Ontology-driven TDB Re-Generation System Architecture will be controlled through sets of specialized processes based on the Blackboard architecture. In this architecture agents, which are also referenced as knowledge sources, are notified of changes to the Internal TDB Repository representation and implement the necessary modifications to bring back consistency or correlation between all the Internal TDB Repository representations.

Once all the Internal TDB Repository representations are correlated, the correlated state of the internal TDB is translated into updates and sent to all the clients. The clients received the updates and regenerate the local TDB representation through a similar back-end process. Different mechanisms exist for the notification and transmission of updates to the target formats. One possibility is to broadcast the updates to all systems on the network. Systems which are interested in the updates will retrieve the data from the network and implement the updates. Another possibility for the distribution of

updates will be for interested system to subscribe to updates. In this case the updates are provided only to the subscribed clients. The decision of the best method for providing the updates to the necessary target formats is beyond the scope of this research and it is left for future research.

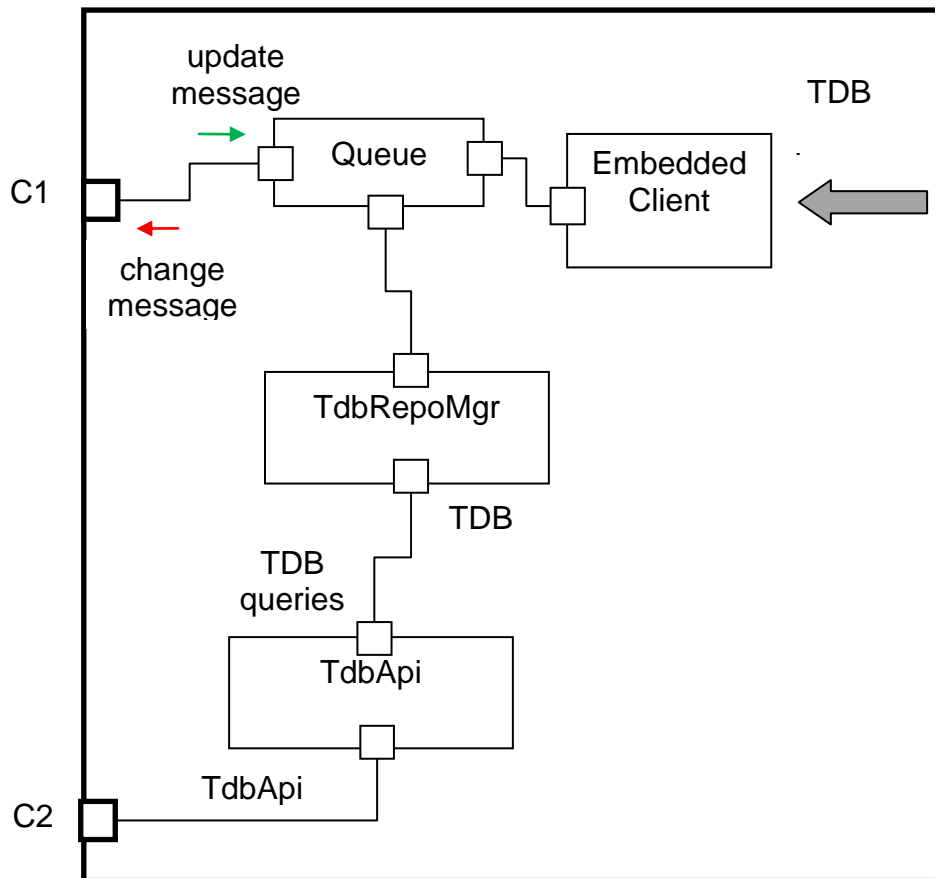


Figure 15 – DODAF SV-1 of the Embedded Client internal (internal interface view)



## **Architecture Components**

This section provides details on the individual components of this architecture. First a logical view of the Bi-Directional Ontology-driven TDB Re-Generation Architecture client is provided followed by a description of the server component. From this point on the term server will be used to reference the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server and the term client will be used to reference the Agent-based Ontology-driven TDB Re-Generation Client.

### ***Client Application***

This section describes the main components of the client applications and how they are connected as well as the information that is exchanged between them.

A view showing the internal interfaces and main components of the client application is shown on Figure 15. The main sub components of the client are the Queue, the TDB Repository Manager (Figure 15 TdbRepoMgr), the front-end and back-end TDB API (TdbApi) and the embedded client subcomponents.

The client application obviously has a need to use a TDB. The main purpose of the embedded client application in the Bi-Directional Ontology-driven TDB Re-Generation Architecture is to capture changes in the local TDB and send these changes to the Agent-based Ontology-driven Generation Architecture Server. Figure 15 shows how a

local TDB changes are received by the embedded client and placed on the message queue for processing. The TDB changes are then converted to a change message which can be sent over the network. The conversion from local TDB change format to change message is done through the TDB Repository Manager. The TDB Repository Manager relies on TDB API services for the conversion of the local format TDB changes to a change message format.

The other function of the client is to receive TDB updates from the Bi-Directional Ontology-driven Generation Architecture Server. These TDB updates messages are put into a message queue and distributed for processing to all interested components. The TDB Repository Manager uses the necessary front-end API to read the TDB and incorporate the corrections. Once the corrections are incorporated the local TDB is updated using the corresponding back-end API process.

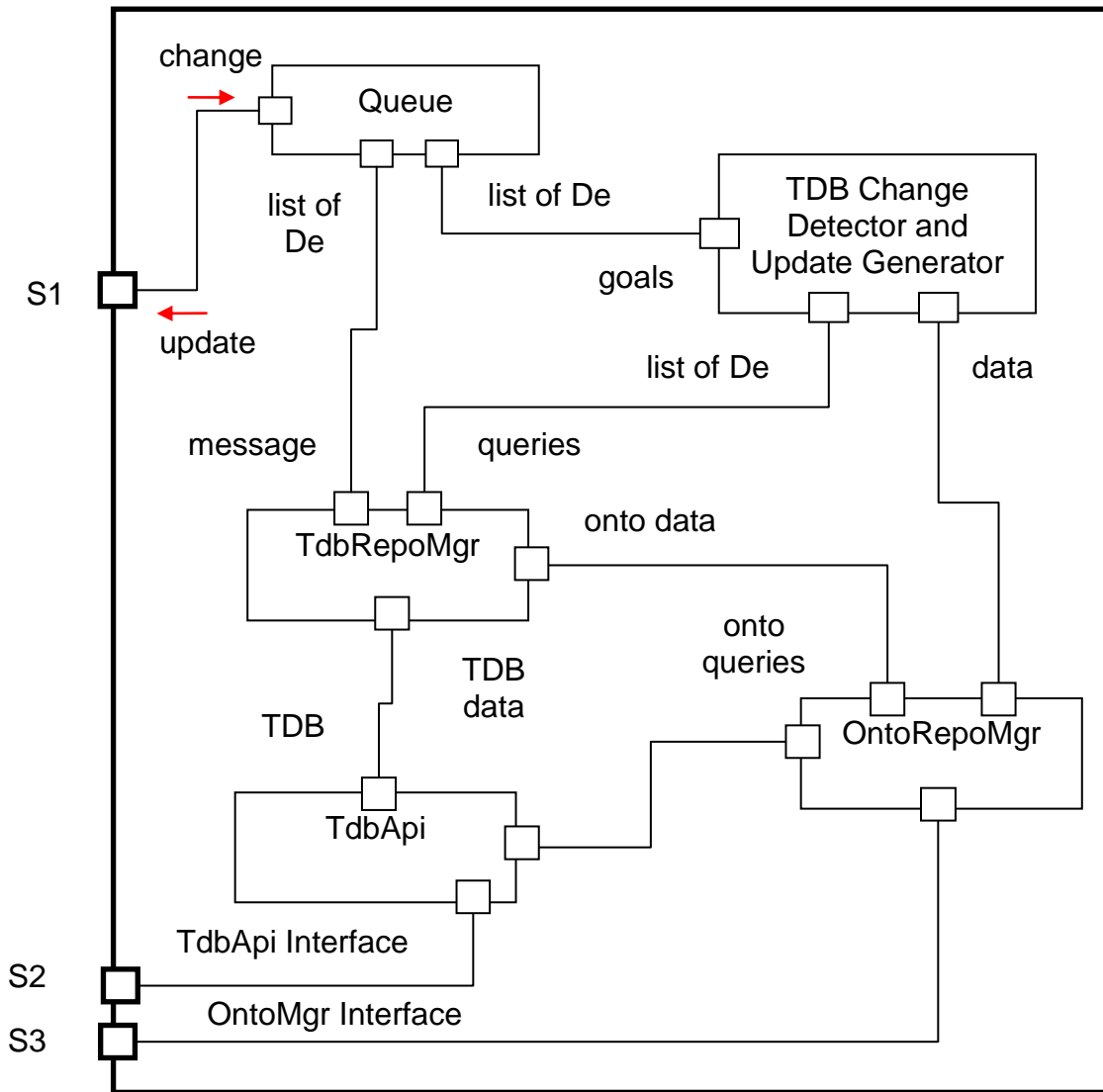


Figure 16 - DODAF SV-1 of the DBO-TDBG Server (internal interfaces view)

### ***DBO-TDBG Server***

This section describes the main subcomponent of the Agent-based Ontology-driven TDB Re-Generation server and how they are connected as well as the information that is exchanged between them.

The internal interfaces of the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server are shown in Figure 16. This architecture view shows the structure and organization of the components and interfaces inside the server. The main components of the server are the queue, the TDB Repository Manager (Figure 16 TdbRepoMgr), TDB API front-end and back-end subcomponents and the TDB Change Detector and Update Generator.

As the client TDB changes are received by the server they are placed on a queue for processing. Before the changes were introduced into the system the server Internal TDB Repository contained a correlated set of TDB. When changes arrive they can potentially create a miscorrelation state of the Internal TDB repository as well as inconsistencies inside the specific TDB. Consistency within the Internal TDB Repository target format for which the TDB changes are intended as well as correlation between the remaining target formats in the repository must be assessed and TDB corrections generated if necessary.

Before the change messages can be processed they need to be translated into an internal representation which can be processed by the system. This translation involves conversion from the client target format representation into an internal Data Element representation. More information will be later provided on the Data Elements structure but for now it is sufficient to say that this is the internal representation that the TDB Change Detector and Update Generator utilizes for updating the affected TDB stored in the Internal TDB Repository. The TDB Repository Manager contains a library of TDB API front-end and back-end subcomponents which are used for reading and writing the target formats supported by the system. Each supported client application is responsible for implementing the TDB API and provided a front-end and back-end component that can be used to read and write data to the particular target formats.

In this architecture only the necessary TDB data elements are updated. For this reason it is necessary to assess the impact of the changes. The recognition of these changes, testing and transformations happen in the TDB Change Detector and Update Generator. The first step in processing TDB changes is the identification of the affected TDB extents. This includes the identification of TDBs in the repository as well as the TDB cells that are affected by the TDB changes. Changes may be isolated to cultural feature changes or changes may affect large extents. In any event the extent of the changes needs to be determined and translated to TDB cells which can be loaded for processing.

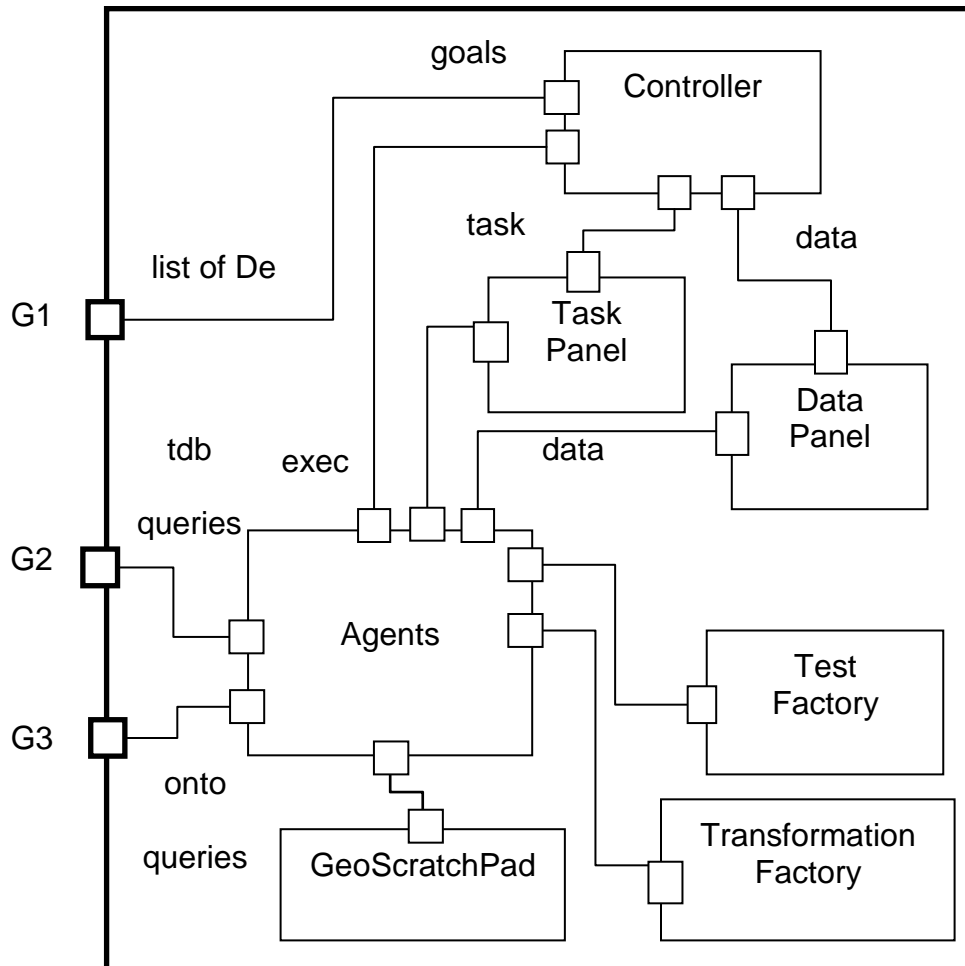


Figure 17 - DODAF SV-1 of the TDB Change Detector and Update Generator Components

### **TDB Change Detector and Update Generator**

The main components of the TDB Change Detector and Update Generator are shown on Figure 17. The main components are the Task Panel, Data Panel, Controller, Agents, the Geospatial Scratch Pad, the Test Factory and the Transformation Factory.

An approach similar to that described by, Dong (Dong J., Chen S., Jeng J 2005) is used to combine the blackboard architecture with implicit invocations of knowledge sources. In a blackboard architecture data, facts, and goals are available for all agents to see. The Data Panel and Task Panel are used for communication between the agents and coordination of the modifications to the Geospatial Scratch Pad. The Geospatial Scratch Pad (GeoScratchPad) contains the Internal TDB repository cells that need to be updated.

In a traditional TDB generation system features are processed based on a selector such as the combination of a classification attribute and geometry type. For example, cultural point features may be processed into buildings, trees, light poles, mail boxes, and other Common TDB representations. Recall the TDB generation models in Figure 4 which are used to process that Common TDB geospatial source data to generate expanded geometry and attribute presentation. These expanded representations contain enough information to generate all the target formats. The analogy for the common TDB shown in Figure 4 is the geo-scratch pad. The TDB generation models are process, functions

or transformations which convert data from one representation to another. In the case of the traditional TDB generation pipeline these models are used to process geospatial source data into expanded geometry and attribute representations. In a similar way as TDB changes arrive to the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server agents select the necessary Data Element tests and transformation models to test and if necessary update the representations. However in the Bi-Directional Ontology-driven TDB Re-Generation Architecture transformations are implemented not only considering the source data and local target format requirements but considering the actual distributed target format state.

It is important to note that agents control the selection of the tests and transformation based on the source of the changes and on the target formats that need to be regenerated. Other factor such as feature dependency and location of the change may be considered as well. The agents analyze the incoming TDB changes and based on its knowledge of the data elements it determines if the geometry or attributes of the changed or related data elements need to be updated. If necessary the agent selects and executes the necessary transformation models to update the affected TDB data elements. Note that the selected transformation may be similar to the transformation models used by the traditional pipeline TDB generation system. In fact, at some point in time when the amount of changes is large, this approach results in complete TDB regeneration. At this limit agents will take large sets of source data changes and



transform these source data into a Common TDB representation that can be used to regenerate updates for all target formats.

However, to support an efficient partial TDB regeneration it is necessary to minimize the amount of modifications. In this data-centered architecture, the system sends event messages to the agents responsible for the affected TDB cells. This mechanism triggers the creation of agents or knowledge sources that will process the changes on the affected areas of the Geospatial Scratch Pad. The Agents in this architecture are knowledgeable sources that dynamically register, withdraw, enter, leave and contribute to the overall TDB correlation problem inside the Geo-Scratch Pad. The agents are responsible for the assessments, measurements, tests, goal setting and modifications of the TDB Data Elements stored in the Geo-Scratch Pad.

A knowledge base provides information which helps the agents determine how to test changes and how to generate a modification strategy that can bring the dependent component back into correlation. For example, one of the agents may be responsible for identifying and loading the affected Internal TDB repository cells into the Geospatial Scratch-Pad. Other agents control regions on the Geo-Scratch Pad while other agents are responsible for specific Data Element testing and modifications.

In the TDB Change Detector and Update Generator, multiple contributions for any one task are possible. Therefore it is necessary to have a mechanism for moderating or controlling the updates of the TDB data elements. The Controller (reference Figure 17) component of the architecture is responsible for the selection of the most appropriate Agent contribution. The Controller selection criteria should be driven by a set of cost or utility functions. These functions should minimize anomalies between internal data elements and maximize correlation between the TDB cells. Other utility functions may provide priority criteria which will ensure that agent contributions are done in an orderly way.

Once an Agent is selected, the Controller allows the selected Agent to modify the TDB cells stored on the Geospatial Scratch Pad. After the operations are performed the process continues until consistency of each one of the TDB cells is achieved and correlation between all TDB cells in the Geo-Scratch Pad is at an acceptable level.

The communication mechanism between Controller and Agents is through the Data Panel and the Task Panel. The Data Panel is used to store the list of facts and goals which may be used by the agents to understand the correlation problem. These facts and goals are updated based on the needs and priorities of the correlation process. Facts and goals are generated by the Agents. Some of these facts may come from the agent Knowledge base, and the state of the TDB cells in the Geo-Scratch Pad. For

instance the state of the TDB cells in the Geo-Scratch Pad is perceived and updated from measurements and other assessment (tests).

The Task Panel is used by the Agents to propose contributions to the problem at hand. For example, if the current goal is to measure the correlation of the terrain between a number of different target formats, the agents which possess the capability to measure and assess terrain elevation for the particular TDB formats and extents may post their capabilities to the Task Panel. Once all the agents have been given a chance to contribute the list of contribution is sent to the Controller for review and selection of the most appropriate contribution.

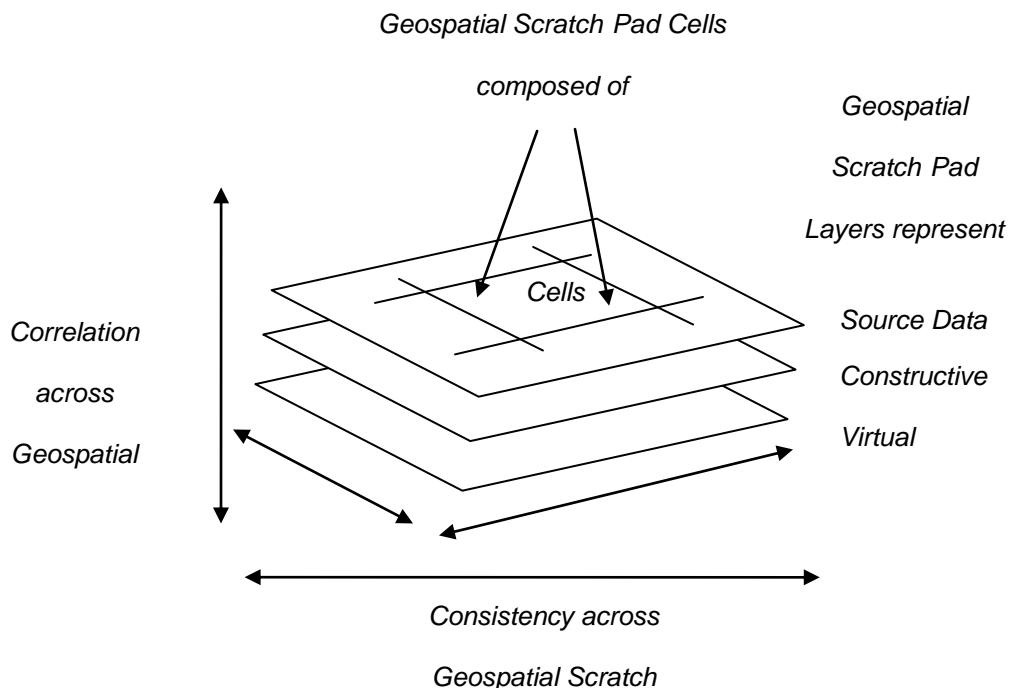
When all the Geo-Scratch Pad cells are correlated the TDB Change Detector and Update Generator generates a correction message which is sent to all interested components. These messages are eventually sent by the message queue to the Internal TDB Repository Manager and the Network Communication subcomponent. At that point the Internal TDB repository Manager takes the correction information and updates all of the necessary TDBs in the Internal TDB Repository. What remains is to update the fielded client target formats. The server converts the corrections into TDB update messages and sends this update messages for processing but clients. Client applications received the update message and incorporate the TDB correction into the

native target formats using a similar mechanism as that used by the Internal TDB Repository Manager.

### ***Geo-Scratch Pad***

The Geo-Scratch Pad holds the Internal TDB Repository of TDB cells which have been affected by the changes and need to be updated. The TDB representation in the Geo-Scratch Pad contains enough information to represent all the components of the TDB stored in the Internal TDB Repository. In addition this structure should also need to be able to support efficient modification of elements inside the cells.

The Geo-Scratch Pad consists of separate representations for all the target formats, each one stored on a separate layer. These Geo-Scratch Pad layers overlap a common geographical area and contain Data Elements that describe the geographical source data features and target format components.



**Figure 18 – Conceptual diagram of the Common TDB Layers and components**

For instance, all the geometry representation for high level of detail in a virtual representation may be contained in one layer of the Geo-Scratch Pad. The main idea is to group Data Elements into layers which have some common criteria which may be used to identify dependencies between Data Elements.

As shown in Figure 18 each layer is composed of cells, which in turn contains a set of Data Elements that represent TDB components in that cell. Once loaded into memory

the Geo-Scratch Pad is a runtime representation of the Layers, Cells and Data Elements that are stored in the affected TDBs in Internal TDB Repository.

### **Internal TDB Repository**

The Internal TDB Repository contains sets of pre build correlated TDB representations that mirror the external client target formats. It is assumed that an initial TDB Generation process will generate a set of TDBs which will be correlated to a particular degree after the initial generation. Copies of this TDB are initially distributed to the target applications and the Internal TDB Repository is populated. In this sense the TDB generation process falls back into a total regeneration process which initially populates the target formats on M&S applications and the Internal TDB repository. In other words, an initial set of correlated TDB is generated at some time  $t$ . As TDB changes are generated at some  $t+(\Delta t)$  the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server generates TDB updates that addressed the quality of the fielded target formats and correlation improves over time. The typical example is adjustments in terrain surface elevations. After building a set of correlated TDB, anomalies related to the terrain surface may be discovered. Some of these anomalies may be due to internal representation inconsistencies or model conflicts. For example, conflicts between building model footprints, terrain material, and terrain surface elevation may create undesired terrain surface anomalies such as terrain tears and spikes. Adjustments to the terrain surface are made to repair these anomalies and minimize elevation differences (Schiavone 1997).

The format used for the representation of the TDB in the Internal TDB is a topic of research of its own and is beyond the scope of this work. For example, the OpenFlight format is traditionally the de-facto virtual terrain database interchange format. OpenFlight is then post-processed or compiled into many different optimized run-time virtual target formats (Simons R. 2004). Many different commercial tools support editing and visualization of OpenFlight TDB. A format which can be used to store SAF information may be OneSAF Terrain Format. OneSAF was developed as a replacement for all ARMY SAF and the OneSAF Terrain Format evolved from a well know constructive simulation called WARSIM. A standard geographic source data format which can be used is ESRI shape files. Shape files are traditionally used to stored geospatial data in many different TDB Generation systems and the format is supported by many commercial tools.

Another alternative for the Internal TDB Repository will be to store the information in an interchange format like the SEDRIS Transmittal Format. SEDRIS was developed for the interchange of synthetic environments and it is able to represent a variety of different environment representations. However the SEDRIS Transmittal Format runtime performance and complexity may limit the overall system performance.

Flexibility of the Internal TDB repository is desirable of the architecture. To isolate the Internal TDB Repository from the rest of the system a number of plug-in components will convert Internal TDB Repository representations to the Geospatial Scratch Pad Data Element representation. Although important, the selection of the formats for Internal TDB repository is a topic of no of relevance to the goals of this research. To TDB API Front-End and Back-End isolate the architecture from the Internal TDB Repository formats. The TDB API Front-End and Back-End are responsible for the translation of the Internal TDB repository target formats. The goal is that the functionality of the TDB API Back-End and Front-End will be limited to translation of one format to another.



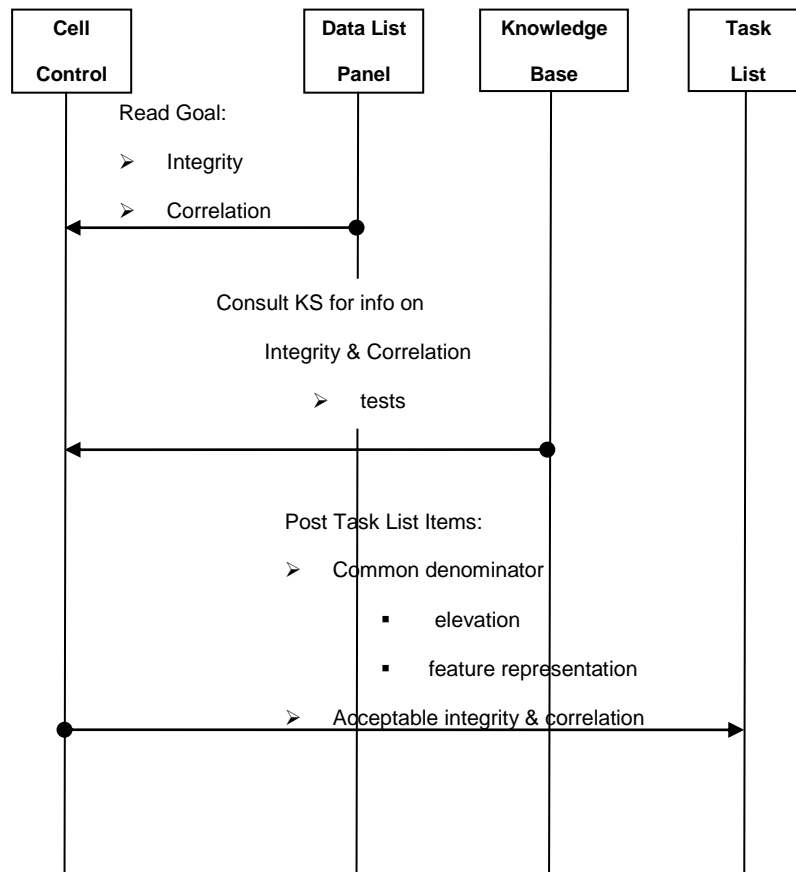


Figure 19 – DODAF SV-10c Event trace for Cell Control Agent behaviors

### Knowledge Sources

As mentioned before a combination of Agents are used to process changes in the Geo-Scratch Pad. This section provides more information on the types and functions of the different classes of Agents or Knowledge Sources and the sequence of operations.

### ***Factory Agent***

The Factory Agent, is responsible for loading the necessary TDB cell into the Geo-Scratch Pad. This agent relies on the Internal TDB Repository Manager for the conversion of the TDB representation stored in the Internal TDB Repository to the Geo-Scratch Pad Data Element representation.

### ***Cell Control Agents***

Cell Control Agents, are rational goal-based agents whose goals or intentions are to plan TDB modification and adjustments that will result in correlation between all the layers in the Geo-Scratch Pad at the cell level. The degree of TDB correlation needed for a particular application and therefore the degree of similarity between TDB is outside the scope of this work. This work concentrates on providing the mechanisms and processes to achieve a desired degree of similarities between the TDB representations on the Geo Scratch Pad. The knowledge used by this type of agent is captured is a knowledge base that is tailored for the particular TDB format and application. Schiavone (Schiavone 1997) proposed a number of statistical methods for the analysis of consistency between data elements in TDB. Similar metrics can be used to determine the most appropriate values to terrain elevation. It is assumed that the provided TDB changes on the change message are the desired state of the particular TDB data element within that TDB. The problem then becomes adjusting other related data elements within the TDB so that a consistent representation exists in the TDB that

received the changes. This internal TDB integrity state considers all the related data elements within the TDB. Once this TDB is adjusted the equivalent data elements on other TDBs are considered and adjusted to match the provide TDB changes. For example, if the location of a building is adjusted in the horizontal plane it may be necessary to adjust its elevation as well. Once all the TDB internal anomalies are addressed updates to the same building in on other representations will follow. A similar set of internal TDB integrity modifications may be necessary on the other representations after the corresponding TDB changes are incorporated. A knowledge base stores information on the data element interdependencies and transformations. The general processing mechanism of this agent allow for the query and use of this information. Other support elements provide for the actual implementation of measurements and transformations.

The event trace on Figure 19 shows the typical sequence of a processing cycle for a Cell Control Agents. The first step is to check the Data Panel to determine if there are any contributions that can be made. Based on the information gathered from Data Panel the Cell Control Agents consults the Knowledge base to determine what to do. Contributions by the agent are possible if the combination of goals and facts in the Data Panel match the agent capabilities. The applicable contributions are then posted to the Task Panel for consideration. The posts may be the creation of other Knowledge

Sources for the affected Data Elements, requests for correlation tests, parameters for transformations, goal or sub goals for other tasks and so forth.

Initially the agent needs to determine if the cell plus the new TDB changes in the Geo-Scratch Pad are consistent with the ontological structure described for that cell type.

Once this internal cell integrity is established for the reference layer correlation with cells on other layers may follow. The determination of TDB integrity within the cells in one layer of the Geo-Scratch Pad Data Element is controlled by an ontological description of the dependencies and tests. An example of a Data Element dependency is the relation between a building and the terrain. If the terrain is changed the building elevation must be tested and if necessary updated to match the terrain elevation.

Attribute dependencies may arrive from changes in geometry. For example, if the height and width attributes of a tree are modified the corresponding polygonal description may need to be updated to reflect the changes. This attribute to geometry mappings needs to be handled by the agents and ontological descriptions.

The Cell Element Control Agent's beliefs will result from its perceptions on the Geo-Scratch Pad environment. These beliefs include knowledge of the contents and the relations to other Geo-Scratch Pad cells and layers. The initial set of dependencies will be established at the time the TDB is generated and will evolve as the Internal TDB changed and updated by the system. The generation of these dependencies will be

based on information stored on the ontology which describes the potential relationships with other Data Elements. The actual dependencies will be based on the content of the TDB.

Additional perception information of the Geo-Scratch Pad state is obtained through the Data Panel. The actual measurements may be performed by other knowledge sources or processes. In this architecture Cell Control Agents are high level control agents which are responsible for the generation and supervision of lower level agents.

The assessment of the differences between the changed Geo-Scratch Pad cells and the cells that need to be updated will result in perceived differences in the environment. This perception of changes and differences allow for the detection of the specific Data Elements that have changed and are related within the particular cell and across layers.

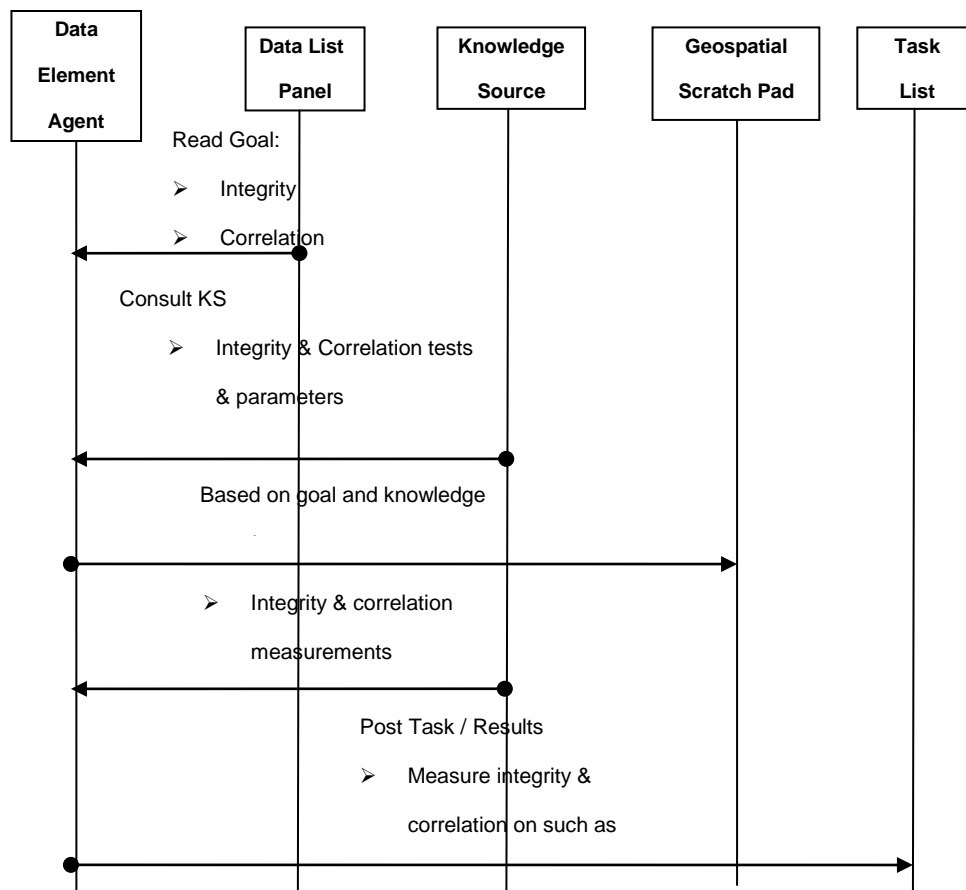


Figure 20 - DODAF SV-10c Event trace for Data Elements Agent Behavior

### ***Data Element Control Agents***

The Data Element Control Agents are simple reactive agents which are responsible for the actual implementation of the modification plan. In this case the Data Elements are the physical representation of the TDB components stored in the Geo-Scratch Pad. A particular Data Elements Agent is responsible for a particular Data Element. The Data

Elements Control Agents behaviors control and implement the analysis, test, and transformations between the different Data Element representations.

For example, the linear feature which represents a road feature will become a Data Element which will be assigned to a Data Element Control Agent. This Data Element Control Agent will manage changes to the road Data Elements geometry and attributes. In this case the road Data Elements geometry may be a series of points describing the road. Other Data Element representations of the same road may be a series of triangles that describe the virtual representation of a road. The road Data Elements attributes may include width, soil, texture and other attributes.

Just like any other Knowledge Source, the Data Element Control Agents monitor the Data Panel and post potential solutions to the problem on the Task Panel. Figure 20 shows the sequence of events that a Date Element Agent is allowed to execute at each Controller cycle. First the Data Element Agent is allowed to check the Data Panel and review the goals. These goals are then compared against the Agents capabilities and based on the pre-conditions potential actions are selected. These actions may require further information from the Data Elements on the cell. Once the potential actions are selected and all the data collected these potential contributions are submitted to the Task Panel for consideration by the Controller.

The Controller selects the most appropriate solution to the problem and allows the Data Element Control Agents to perform the proposed action. After the action is performed the Data Element post information which is used by the Controller to update the Data Panel to indicate that the task is complete. This cycle continues until the goals and sub-goals on Data Panel are fulfilled.

### **Knowledge base**

As mentioned in the previous chapter metadata will not be enough to store all the information needed by the agents to identify changes and generate a set of correlated TDB representations. Therefore, it is necessary to provide a mechanism that captures the Agent's knowledge about the environment components, relationships within the TDB, dependencies between TDB representation and the bi-directional transformations between these representations.

The knowledge used by the agents will be stored in ontologies and description logic statements that will describe the different TDB types inside the Internal TDB Repository, their dependencies and transformations. This information will help the agents determine what to do as changes are introduced into the TDBs. Models which describe the TDB structure, correlation and transformations will be described by OWL ontologies. These ontological Knowledge bases contain schemas that describe the structure, content and semantics of the different types of TDB that can be stored in the Internal TDB Repository. Instances of these schemas are used to represent actual TDB data stored



in the repository. The amount of information stored on these TDB instance ontologies should be minimized and generalized as much as possible.

For the purpose of this research, at least three ontological knowledge bases will be needed:

- Structure Ontology
- Correlation Ontology
- Transformation Ontology

Once loaded into the Blackboard Geospatial Scratch Pad, agents use the Structure and Correlation knowledge base information to understand the components within the layer and how this representation relate to the Data Elements on other layers. The Transformation knowledge information will describes how the TDB Data Elements may be transformed from one TDB layer representation to another.

The following sections provide more details on the concept for each one of these ontologies. However the process of modeling ontologies and their use by agents is a highly iterative process. Therefore it is expected that the ontological models will evolve as the agent design solidifies.

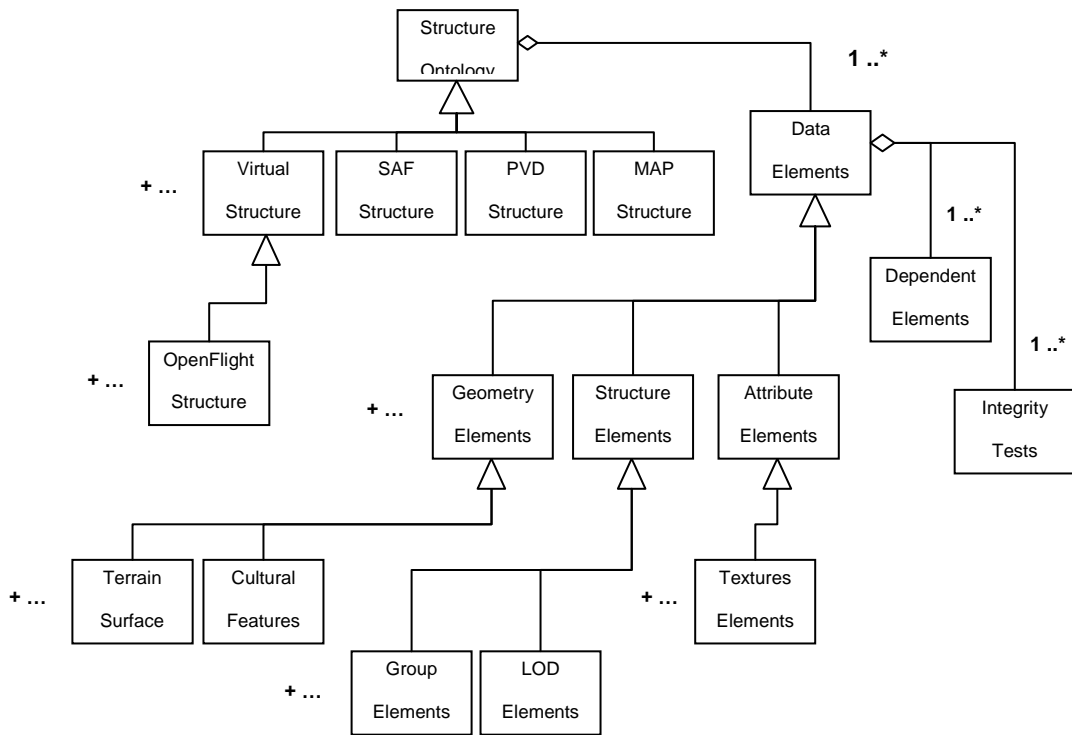


Figure 21 - UML class diagram of the conceptual Structure ontology

### ***Structure knowledge base***

Each one of the Geo-Scratch Pad layers will have a Structure knowledge base that will contains specific information on the Data Elements in the TDB. The Structure ontology provides the data model that describes the TDB and therefore needs to include enough information to describe the types of Data Elements stored in the system, how they are

arranged and the dependencies. In addition to the classes and relationships between the different components, specific instance information on structure, geometry and attributes will be needed, as well as the relationships and dependencies between the different components for particular a TDB.

One example, of a Structure ontology will be a generic data model for storing structure information on a Virtual TDB. This Virtual Structure ontology representation may include Terrain Surface Elements and Cultural Feature Element representations as well as Structure Elements like level of detail (LOD) and Group Elements similar to those shown on Figure 21. Examples of relationships between Data Elements may include the dependency of feature location based on terrain elevation. For instance, terrain normally conforms to building footprints to avoid floating buildings. In this case modifications to the terrain surface will require modification to feature elevation to ensure that the feature lies on the terrain. In this case the Terrain Surface Elements components will contain a list of Dependent Element references to all the Data Elements that will need to be checked and potentially transformed.

Another generic Structure ontology representation will be the SAF Structure ontology. This ontology will include classes that describe the different kinds of Data Elements included in SAF TDB. For example, one SAF implementation may compress the representation of terrain polygons and use different sets of Attribute Elements. In other

cases SAF instance representations may use elevation posts to describe the terrain surface.

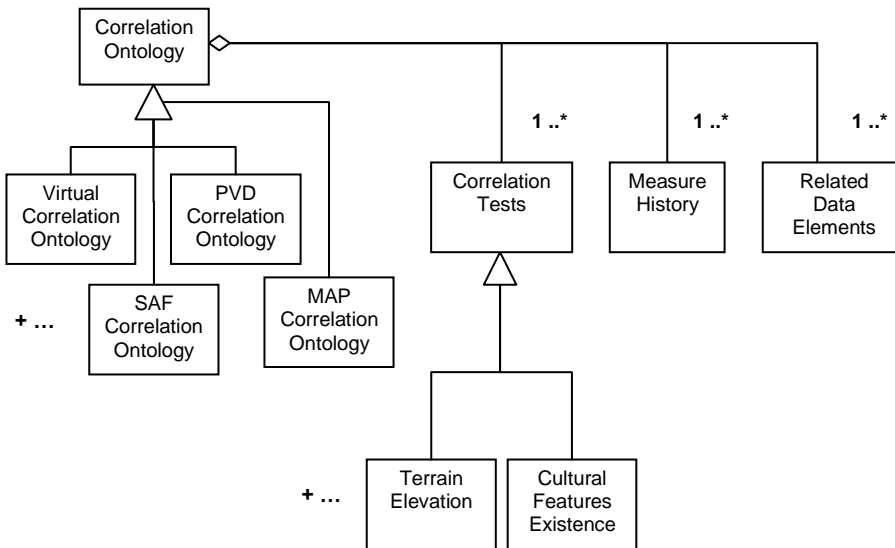
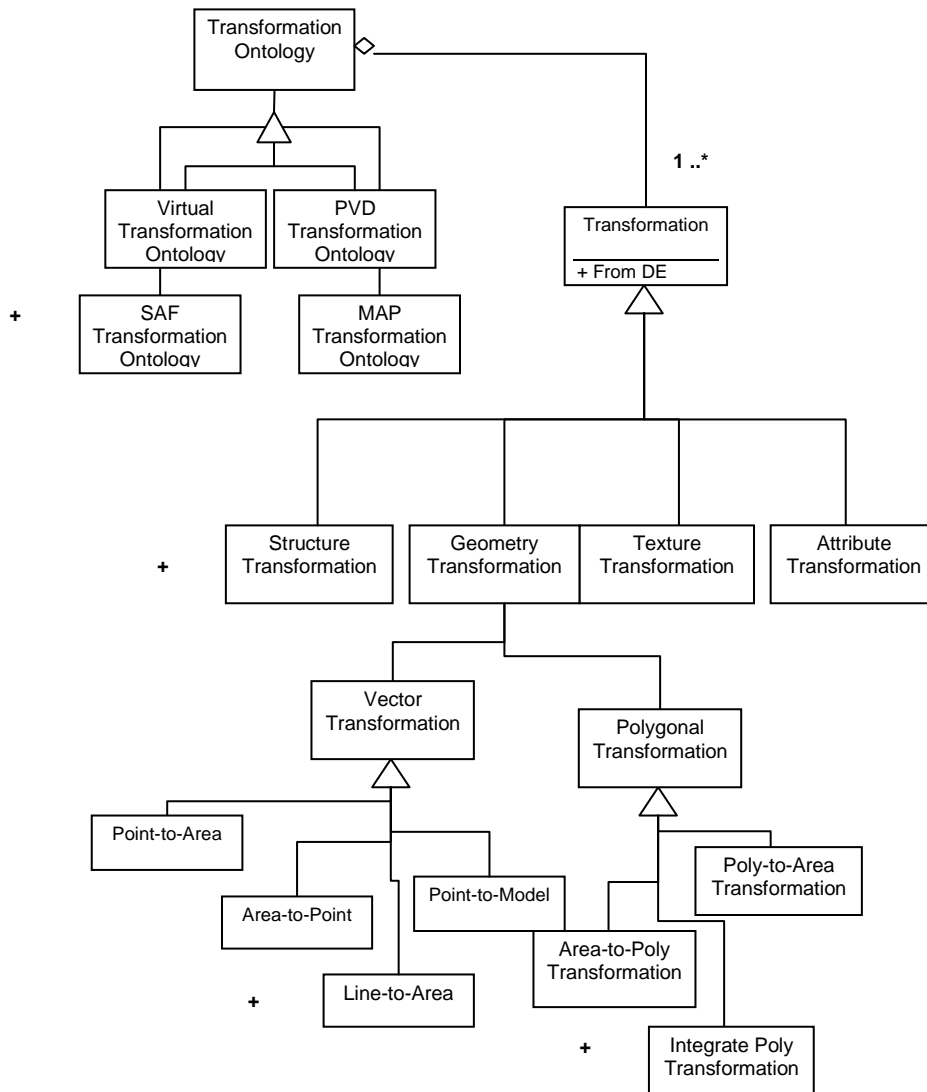


Figure 22 - UML class diagram of the conceptual Correlation Ontology

**Correlation knowledge base**

The function of the Correlation Knowledge base is to describe the polymorphic representations used by the different TDB. This ontology maps Data Elements on different layers of the Geospatial Scratch Pad. As show in , the classes in this ontology will describe objects that include Correlation Tests, Measured History, and Related Data Elements lists.



**Figure 23 - UML class diagram of the conceptual Transformation Ontology**

Whereas the Structure ontology is used to describe the data model of the Geospatial Scratch Pad Data Elements for a particular class of TDB, the Correlation ontology describes how the Data Element in one layer of the Geospatial Scratch Pad related to

each other and to Data Elements in another layers. These two types of relationships provide for integrity testing with the TDB and correlation between different TDBs.

Agents use the Related Data Elements class to determine the representation on other Geo-Scratch Pad layers that need to be tested and potentially modified. The ontology also provides information on how to measure or test the differences between the layers or representations and acceptable values for these measurements. For example, the relationships between a road representation in a Virtual format and a SAF format will relate the virtual representation road Data Elements to the SAF linear road Data Elements. In this case, the virtual road Data Elements may be represented by triangles whereas the SAF road representation may use linear segments.

Correlations Tests for Terrain Elevation and Cultural Feature Existence and others will let the agents know how to measure differences between the Data Elements at different layers. For example, polygonal terrain surfaces can be randomly sampled when compared to other polygonal representations but may need to be sampled at uniform intervals when compared to gridded terrain representations.

The Measure History will contain statistics on previous Correlations Tests. For terrain surfaces this measurements may include values like: mean, standard deviation,

maximum, minimum, median, and critical value (Sakude 1998) on terrain elevation differences.

### ***Transformation knowledge base***

The Transformation knowledge base includes the details on how to transform one Geo-Scratch Pad representation to another. The Transformation knowledge includes the normal source data to target format transformation included in the conventional TDB generation system pipeline. But it also contains the reverse transformations from target formats to source data not included in the conventional TDB generation system pipeline. This mechanism allows for the bi-direction transformation of TDB representations.

For instance, on the Transformation ontology shown on a Virtual TDB may include a transformation from a Point-to-Model (source-to-virtual) which allows for the generation of virtual 3D polygonal building from a point feature. The point data is normally provided as geographical source data to describe the building feature at location. Some of the specific parameters for the transformation may include values for the building height attribute and texture descriptions for the front, side and top of the building. The inverse transformation (virtual-to-source) may take a polygonal virtual representation of a building and generate geometry for an area that describes the building roofline this area at the terrain surface will in turn describe the building footprint. The building footprint can be considered as an area feature or it can be converted to a point feature with

associated length and width attributes. These are some of the possible transformations, but in our example the specific instances will be the transformation of the polygonal footprint of the building in the virtual representation to a point feature. In this case the Polygonal-to-Area transformation maybe used to combine a list of 3D polygons into a 2D area feature and from that 2D area to a point. Geometry as well as attributes will need to be generated and updated by these transformations. The main purpose of the transformations will be to provide information for the Agents to enable the modification of DataElements in the Geo-Scratch Pad to reestablishing correlation between the different representations.

### **Summary**

The Bi-Directional Ontology-driven TDB Re-Generation Architecture described in this chapter provides support for distributed partial bi-directional updates of target formats through the use of ontological knowledge. However, it is assumed that the internal TDB Repository will contain enough information to support the generation of all the necessary target formats. These internal representations are maintained and updated in response to changes in any of the previously generated target formats. When changes are introduced into any of the client target formats the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server receives the changes. The client TDB changes causes the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server to load the affected cells from the Internal TDB repository into the TDB Change Detector and Update Generator which triggers a process which will bring all dependent



representation into correlation. Agents and knowledge bases ensure that only the affected Data Elements are updated. After the Internal TDB repository changes are incorporated into the local server representation, TDB updates for external client target formats are generated by the Server and implemented in the Client target formats.

This process runs continuously and as fast as possible to support TDB client changes in a distributed network. Thus, this architecture supports network centric changes to target formats across the network with the goal to maintain temporal consistency across all representations.

## **CHAPTER 4: RESEARCH PLAN**

The objective of this research plan is to evaluate the conceptual approach of distributed bi-directional partial terrain database regeneration through the Bi-directional Ontology-driven Terrain Database (TDB) Generation Architecture presented in the previous chapter concerning the following research question.

What is the appropriate terrain database generation system that will achieve correlated TDB representation among a distributed network of trusted, partnering, simulations given the implicit and explicit conditions of: global distribution; bandwidth, time, expertise, monetary, and labor constraints; and increased update frequency?

Due to resource limitations, this research will not address global distribution, will assume a fixed bandwidth capacity, and provide informed comments only on expertise, monetary, and labor constraints. Fidelity or correlation of terrain databases with the real-world is beyond the scope of this dissertation, but rather correlation in so far that distributed databases are consistent with each other is all the further that correlation will be considered.

The research hypothesis is:

Partial bi-directional target format regeneration approach shall reduce network utilization and regeneration processing times from the traditional database update paradigm while maintaining consistency between heterogeneous terrain databases distributed across the simulation network.

To test this hypothesis, a case study strategy was used and further restricted to a case study of military simulations. The military categories for simulation are live, virtual, and constructive. A set of terrain databases, each representing the same geospatial area but each formatted for one of these three categories, constitute a heterogeneous set of databases. As each set represented the same terrain, interoperability of the databases may be achieved over the network using a network protocol such as DIS or HLA.

The assumption of the research hypothesis is that agents, using a shared ontology and a partial regeneration technique, can monitor and detect changes to a terrain database utilized by members of a distributed network of simulations. Further, using appropriate protocols, agents can provide TDB updates to members of the network more quickly and with less network utilization and regeneration processing time than the prevailing current technique, defined in Chapter three, while maintaining TDB consistency.

The plan for testing this hypothesis is to implement a working prototype using the three heterogeneous terrain databases and collect data to determine if the results from the proposed approach supports the hypothesis. To support the hypothesis the data must show reductions in the transmission of TDB changes through the network as well as the times it takes to regenerate the TDB while at the same time maintaining consistency between the distributed TDBs representations.

The experiment that tests this general hypothesis introduces changes into a set of distributed target formats while monitoring the transmission of the changes throughout the network and the incorporation times. In addition a mechanism is necessary to determine that the distributed TDBs are correlated or consistent with each other.

First a look at the terms network utilization, processing time, consistency and determine how these values will be measured for the existing TDB generation process. Then the proposed experiment is described.

### **Network Utilization**

To determine that a reduction in network utilization is achieved a test network within a laboratory setting is used. To do this, it is necessary to determine the time it currently takes to transfer TDB changes across the network and compare that time to the network utilization times of the Bi-Directional Ontology-driven TDB Re-Generation Architecture. For this purpose, a computer program was developed which allows for a directory of

TDB files to be transferred across the network in a similar fashion as the changes and updates will be transferred by the Bi-Directional Ontology-driven TDB Re-Generation Architecture. Details on this application are provided in APPENDIX A:. In this application, the TDB directories and files are recursively transferred across the network while the size of the transfer and the time is recorded. Therefore, the network utilization times for legacy TDB transfers can be calculated. In addition to network utilization the application calculates the network throughput.

The time spent transferring data across a computer network is dependent on the available network as well as other factors like network utilization, network throughput and bandwidth capacity (Blum 2003). The bandwidth on a network is related to the data rates that can be supported by the network connection. Bandwidth is usually expressed in terms of bits per second (bps) or bytes per second (Bps). Large bps may be scaled to Kilo bits per second (Kbps) by dividing the bps by 1024 or to Mega bits per second (Mbps) by dividing by  $1024 * 1024$ . Since different target format representations exist, different disk size representations will result and therefore different network loads will exist for each different target formats. In addition the extents of the TDB may also vary. Thus, it will be necessary to normalize to a particular TDB extent size. For testing purposes the size of a typical geo-cell (i.e. one-degree by one-degree) will be used and extrapolation on network transfer times will be performed based on the measured network throughput.

### **LVC Terrain Databases**

The set of TDBs used for this research are of an area in Bartow California. Details on the TDB are provided in CHAPTER 5:. This section provides a summary of the main characteristics of the TDBs and in particular the measured network utilization times. The network load and expected utilization times for each TDB were measured using the application at APPENDIX A:. The Appendix F application was used to transfer the TDBs across the network and establish a baseline for the transfer of a complete TDB on the test network. The following section provides a brief description of the TDB and the network utilization times.

### ***Legacy Virtual TDB Network Utilization***

The virtual TDB used for the experiment was in OpenFlight (FLT) format and was generated using the Presagis TerraVista terrain database generation tool. The TDB has an extent of 8200 X 6150 meters or 50.43 kilometers square. The FLT TDB was generated from DTED level 2 terrain elevation data. Bridge and building models were added to increase initial correlation and to support the experiment. This virtual TDB occupies a disk space of 104171169 bytes (99.345 MB) and the measure average network transfer was 81.4 Mbps with standard deviation of 3.8 Mbps. At this network throughput the 99.345 MB would be transferred across the network in 9.8 seconds.

However, the since the area occupied by the FLT was smaller than one geo-cell it is necessary to adjust the file size. To account for the difference in area the file size was adjusted to 25600236490 bytes or 24414.288 MB. The transfer time for a TDB of this size was calculated based on the average FLT network transfer rate of 81.4 Mbps. At this rate the 24414.288 MB would be transferred in 2400.589 seconds. Based on this information the network utilization threshold for traditional transfer of a complete legacy virtual FLT TDB over the specified available bandwidth is estimated to be;

\*LegacyVirtualNetUtilization = 40.010 minutes

### ***Legacy Constructive TDB Network Utilization***

The complete OneSAF Terrain Format (OTF) myNTC\_terrain\_database was composed of exactly 1 geo-cell and occupies a disk space of 25196734 bytes or 24.029 MB. The OTF transfer throughput was at an average of 83.594 Mbps with a standard deviation of 2.481 using the application in APPENDIX A:. At this throughput the 24.029 MB was transferred in 2.301 seconds. No compensation is needed as this TDB occupies on geo-cell. Therefore, the network utilization threshold for legacy constructive TDB will be:

\*LegacyConstructiveNetUtilization = 0.038 minutes

### ***Legacy Live TDB Network Utilization***

The Live Terrain Format (LTF) terrain database c7\_textured has a disk file size of 1807829 bytes (1.724 MB) and occupies an area of 1.109 square kilometers (1150 by 963 meters). The network throughput measurements on the test network for the LTF TDB measured an average of 75.506 Mbps with a standard deviation of 3.371. At this throughput the 1.724 MB was transferred in 0.183 seconds.

Since the area occupied by the LTF was less than one geo-cell is necessary to adjust the file size. To account for the difference in area the file size was adjusted to 20192514288 bytes or 19257.082 MB. The transfer time for this file size was calculated based on the average network transfer rate of 75.506 Mbps for the LTF. At this rate the 19257.092 MB would be transferred in 2040.337 seconds. Therefore the network utilization threshold for legacy live TDB is estimated at:

\*LegacyLiveNetUtilization = 34.006 minutes



### **Processing Time**

Regeneration processing time is another dependent variable. Processing time is related to the time it takes to process the target format changes and regenerate the TDB.

Traditional processing time includes both computer processing and a human labor processing. In this context processing time can vary greatly but is a measure of the amount of time it takes to regenerate the target format.

As the labor component of traditional TDB processing varies widely and is application and organization dependent, the reductions in processing times in this research will be compared against the current US Army requirements for rapid TDB generation. The current objective for rapid TDB generation for the U.S. military is 72 hours (Shufelt 2006). Therefore, the TDB Processing Time Threshold that will be used for testing the hypothesis will be:

$$\text{LegacyTdbGenProcessingTimeThreshold} = 72 \text{ hours}$$

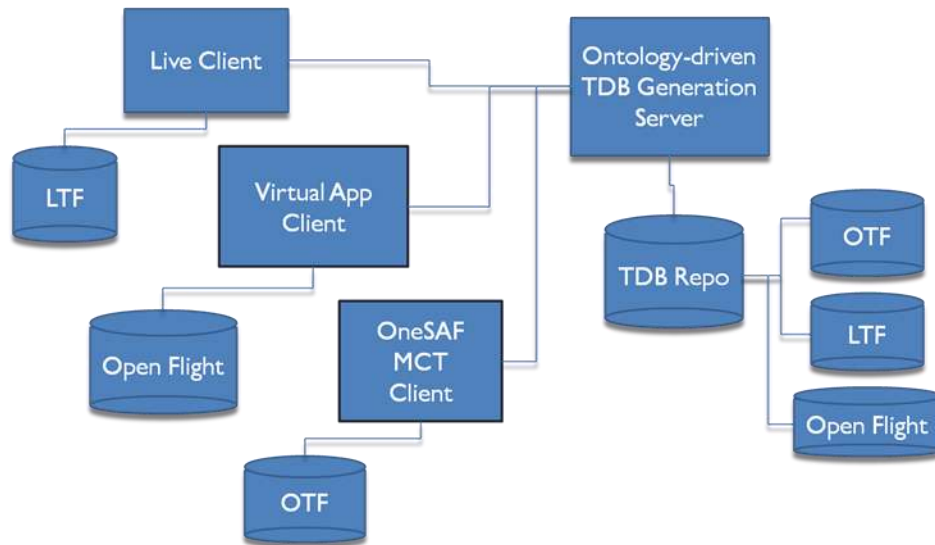
### **Consistency**

Since the live, virtual, and constructive databases have significant differences in function and since they are built to perform optimally in that function domain, the traditional three database types are not the same. Consistency between the target formats is an indication of similarities between the heterogeneous TDB representations.

Similarities between the representations will consider the fact that differences between the representations will exist due to differences in the representation. Similar geographical feature classification and attributes should exist in all the representation but the abstraction used to represent the features may be different. For instance, visual representations may encode information in polygonal geometry, visual attributes, normal's and textures whereas constructive application may use information which is stored in point line or area features and attributes.

Consistency will be measured between the live, virtual and constructive application by visually inspecting that the feature under test has been modified on all the client applications. The result of the test will be true or false.

ConsistentClientRepresentations : { *true / false* }



**Figure 24 – Generic block diagram of experiment client and server applications**

### **Proposed Experiment**

The proposed experiment will include live, virtual and constructive client applications and the corresponding live, virtual and constructive target formats as well as a server. The following paragraphs describe the client and server applications, the experiment, the metrics that will be collected as well as the derived hypothesis that will be tested. Figure 24 shows the client and server application block diagram.

### ***Constructive Client Application***

The constructive client application generates and processes OneSAF Terrain Format (OTF) changes and process update messages to and from the server. This client

application uses a modified OneSAF Environment Runtime Services (ERC) library to implement the read and write capabilities for OTF. The OTF client application subscribes to ERC changes inside OneSAF Management and Control Tool (MCT) application and generates a TDB change message whenever environment changes are detected. The TDB change message is sent to the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server and processed. If necessary update messages are generated for the virtual and live clients.

The OTF client application will also respond to Server TDB update messages by loading the local OTF, updating this representation with the update message data and regenerating the OTF on the local machine. Front-end and back-end components similar to those used by the Bi-Directional Ontology-driven TDB Re-Generation Architecture Server will be used to load, incorporate and re-generate the OTF.

### ***Virtual Client Application***

The virtual client application will process OpenFlight (FLT) server update messages. This client application uses the OpenSceneGraph OpenFlight plug-in libraries to implement the read and write capabilities for FLT. The FLT client application will respond to Server TDB update messages by loading the local FLT, updating this representation with the update message data and regenerating the FLT on the local machine. Front-end and back-end components similar to those used by the Bi-

directional Ontology-driven TDB Generation Architecture Server will be used to load, incorporate and re-generate the FLT.

### ***Live Client Application***

The live client application will process Live Terrain Format (LTF) update messages. This client application uses the LTF API developed by Advanced Research Associates (ARA) for the Army Research Command (RDECOM) OneTESS program. The LTF client application will respond to Server TDB update messages by loading the local LTF, updating this representation with the update message data and regenerating the LTF on the local machine. Front-end and back-end components similar to those used by the Bi-directional Ontology-driven TDB Generation Architecture Server will be used to load, incorporate and re-generate the LTF.

### ***Server Application***

The Ontology-driven TDB Generation server application will process TDB change messages from the clients and if necessary provide TDB updates. The server application is responsible for incorporating the TDB changes and updating all dependent representation in the server. The server is also responsible for the transmission of updates to all affected clients.

## ***Experiment***

To test distributed bi-direction partial regeneration, changes will be generated in the constructive client through the OneSAF MCT as modification to two environment features. One test case will include modification to the GENERAL\_DAMAGE\_FRACTION attribute value of a BRIDGE\_SPAN feature. A GENERAL\_DAMAGE\_FRACTION attribute value representing a destroyed bridge span will be used. The second test case will include modifications to the GENERAL\_DAMAGE\_FRACTION attribute value of a BUILDING to destroyed state.

The feature attribute modification will trigger the generation of feature updates message to all subscribed components inside OneSAF. The embedded constructive client application will receive notification of the feature changes and will generate a change message that will be sent to the Bi-directional Ontology-driven TDB Generation Architecture Server for processing.

Network utilization of the change message transfer will be measured at this point for the client to server change message. The size of the change message will be logged as ChangeMsgSize in bytes and the transmission time will be logged as ChangeMsgTime in seconds.

Once the changes arrive at the Bi-directional Ontology-driven TDB Generation Architecture Server they will be processed and incorporated into the sever Internal TDB repository. The server processing will generate updates to all the affected TDB (live, virtual and constructive) stored in the sever Internal TDB Repository. By the end of the server update process all three TDB (live, virtual and constructive) will be once again correlated in the server Internal TDB Repository. Processing time of the partial regeneration change will be recorded as ServerPartialRegenTime in hours.

In addition the Bi-directional Ontology-driven TDB Generation Architecture Server will generate update messages for the live, virtual and constructive clients. The virtual, live and constructive clients will receive the update message and incorporate the updates into the client Internal TDB repositories. At this point network utilization of the update messages will be measured. The size of the messages sent to each client will be logged as VirtualUpdateMsgSize, ConstructiveUpdateMsgSize and LiveUpdateMsgSize in bytes and the transmission times will be logged as VirtualUpdateMsgTime, ConstructiveUpdateMsgTime and LiveUpdateMsgTime in seconds. The processing time of the partial regeneration at each client will be recorded as VirtualPatialRegenTime, ConstructivePatialRegenTime and LivePatialRegenTime\_in minutes or hours.

Measurement of the above parameters and calculation of utilization and processing times will be automated as much as possible. For example, a notification of target

format regeneration by the clients will be sent to the server. Total processing time will be measured when all the clients have completed regeneration.

Consistency will be measured between the live, virtual and constructive application by visually inspecting that the bridge has been modified on all the client applications as well as all the TDB in the server Internal TDB repository. As a result of the client updates the partial regeneration at the client updates the TDB in the Internal TDB Repository. To verify the updates the TDB will be reloaded and the features inspected on all three clients.

ConsistentClientRepresentations will be recorded as yes if all three TDB contain representations of damage features (bridge and building) at the test location.

The specific hypothesis for the constructive application is decomposed in two. One tests the reductions of network utilization and the other for regeneration times.

Hypothesis on Network Utilization Reduction

IF network utilization is related to partial target format regeneration THEN when partial target format regeneration is triggered by a constructive client the network



utilization may be reduced below the legacy constructive network utilization threshold while maintaining consistent client representations.

This hypothesis will be fulfilled if

$$\begin{aligned} \textit{ExperimentNetUtilization} \\ < \min \{ \textit{LegacyConstructiveNetUtilization}, \textit{LegacyLiveNetUtilization}, \\ \textit{LegacyVirtualNetUtilization} \} \end{aligned} \tag{3}$$

where,

$$\begin{aligned} \textit{ExperimentNetUtilization} \\ = \textit{ChangeMsgNetUtilization} + \textit{VirtualUpdateMsgNetUtilization} \\ + \textit{ConstructiveUpdateMsgNetUtilization} \\ + \textit{LiveUpdateMsgNetUtilization} \end{aligned} \tag{4}$$

and,

*ConsistentClientRepresentations is true*

Hypothesis on Processing Time Reduction

IF processing time is related to partial target format regeneration THEN when partial target format regeneration is triggered by a constructive client the regeneration time may be reduced below the legacy TDB generation time threshold while maintaining consistent client representations.

This hypothesis will be fulfilled if

$$( ServerPatialRegenTime + VirtualPatialRegenTime + ConstructivePatialRegenTime + LivePatialRegenTime ) < LegacyTdbGenProcessingTimeThreshold$$

( 5)

and,

ConsistentClientRepresentations *is true*

### **Limits of Evaluation / Scope Limitation**

TDB generation can be quite complex. A wide variety of target formats exists and their contents, extents and representations vary significantly. This experiment uses a small sample of target formats as subjects and small number of features within those formats to determine if the partial regeneration approach results in reductions of network utilization and processing times while maintaining consistency between the three databases. It is expected that the analysis of the collected data and the prototype architecture will provide a sharper understanding of the mechanisms that control bi-directional, partial regeneration and correlation in a network centric environment. Only changes originated on the constructive client are considered in this research plan. Changes at the virtual and live clients are also possible but were not included in this experiment due to time and resource limitations.

The hypothesis only looks at the network utilization, regeneration times and consistency aspects of the partial regeneration paradigm. The measures used to evaluate the hypothesis do not address labor and time consuming savings of avoiding compilation of the entire database into new live, virtual, and constructive applications and/or compression of files prior to transfer that are characteristics of the traditional terrain database update paradigm. Nor does the hypothesis address the labor and time consuming aspects of manually uninstalling the old database and installing the new database. These tasks can take hours in the traditional database generation paradigm. These tasks do not exist in the partial regeneration paradigm and therefore are not taken into consideration in the measures but rather simply reported as additional benefits.

Security is another factor that is not taken into consideration in the measures used to evaluate the hypothesis. This research assumes that a set of trusted partners is used. Hence, measurements related to time and network bandwidth or time associated with verification that the partners attempting to update the terrain database are not considered.

The primary intent of this research plan is to assess the capability of the proposed time-constrained partial regeneration of distributed, simulation through a Bi-directional

Ontology-driven TDB Generation Architecture to maintain correlation between a distributed set of TDB as modifications are introduced into the system as well as produce reduced network utilization and processing times as compared to the current process. In this research ontological modeling was limited to a small number of features. However, since the system is data driven through the use of an ontological knowledge base, the addition of new TDB information should not require significant architecture modification and eventually allow for generic agents and system components. The analysis of the collected data and the ontological models will be used to gain a sharper understanding of the mechanism that enables and control bi-directional, partial regeneration and correlation.

## CHAPTER 5: EXPERIMENTAL EXECUTION AND PROTOTYPE ARCHITECTURE REALIZATION

### **Introduction**

An instance of the Bi-directional Ontology-driven Terrain Database (TDB) Re-Generation Architecture (aka prototype architecture) was developed and implemented on an apparatus to assess the architecture ability to address key research issues such as:

1. Distributed bi-directional processing of heterogeneous terrain databases
2. Partial regeneration of terrain databases
3. Distributed TDB consistency of heterogeneous terrain databases
4. Harmony in heterogeneous knowledge representations

This chapter presents details on the experimental execution of the case study and the prototype architecture. This chapter is divided into the following sections:

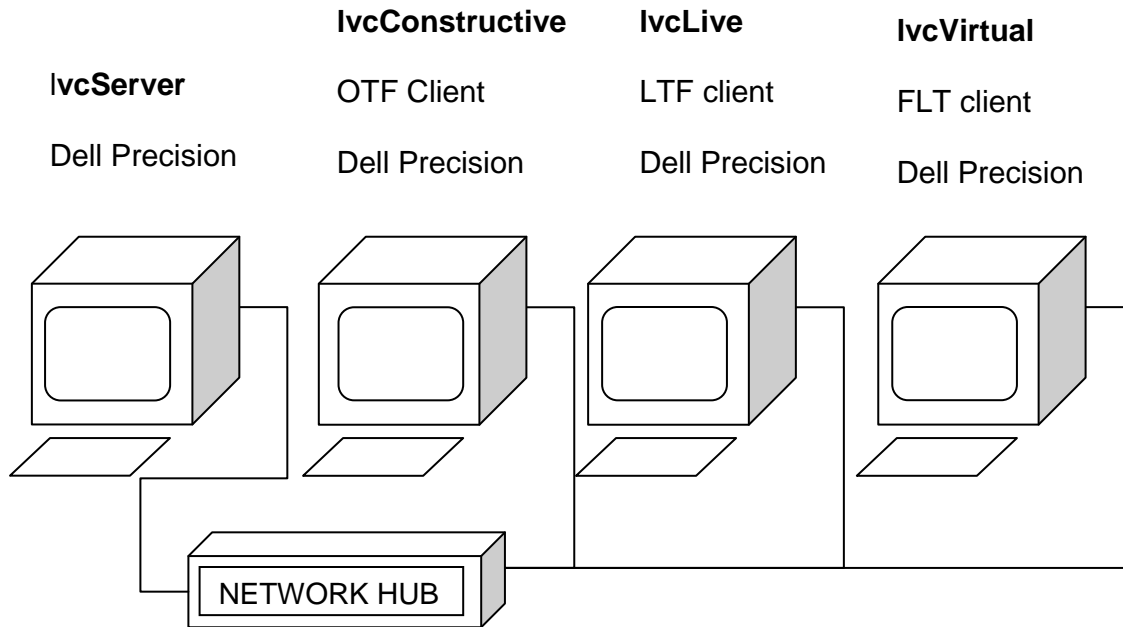
1. Apparatus
2. Experiment Description: Apparatus and Architecture Integration
3. Prototype Architecture Realization

The first section provides a description of the hardware, software and terrain databases used in the development and support of the prototype architecture and execution of experiment. The next section provides details on the experiment. The final section provides a description of the prototype architecture realization, its major sub-

components, and the ontology used in support of the experiment. The theoretical discussion of this architecture (i.e. theoretical architecture) was given in Chapter three. This chapter focuses on the prototype architecture actually implemented during this research. The information provided in this chapter is not an exhaustive description of the implementation details. This chapter provides a description of the apparatus used to implement the prototype architecture and information on the most significant prototype architecture components and features with the idea to highlight issues and trade-off that arrived during the implementation. The main intention is to provide enough information to support interpretation of the results and the conclusions.

### **Apparatus**

This section provides a description of the hardware, software, and database apparatus components used to support the development of the prototype architecture and the execution of the experiment. This section also provides information on the terrain databases used for the experiment.



**Figure 25 - Development and experiment hardware apparatus**

### ***Hardware and software***

The prototype was developed in Java 1.5 and implemented on an hardware apparatus consisting of four separate machines interconnected through a dedicated 100 Mbps network hub. The machines used were Dell Precision T5500 Workstations with dual core 2.13 GHz processors, 4 Gig RAM, and running Red Hat Enterprise version 5.3. Figure 25 shows the names of the client machines (IvcConstructive, IvcLive and IvcVirtual) and the corresponding client type (OTF, LTF FLT client) as well as the prototype architecture server (IvcServer).

**Table 2 - Main software apparatus packages**

<b>Software</b>	<b>Version</b>	<b>Native read/write library</b>
OneSAF Objective System Architecture and Integration	version 4.5  OneSAF contract: N613339-00-D-710	The Environment Runtime Component (ERC) was used for read/write access to OTF.
Advance Research Associate (ARA) Live Terrain Format (LTF) libraries	version 1.0  OneTESS contract: N61339-00-D-0706	LTF libraries were used for read/write
OpenSceneGraph	version 2.6.1	The OpenFlight plug-in libraries were used for read/write access OpenFlight.
Pellet	version 2.0	OWL read/write  OWL DL reasoner

The main software apparatus components loaded into the prototype architecture machines are listed in Table 2. These software apparatus libraries were used for access of the low level functionality of the OTF, LTF and OpenFlight databases and Ontology



Web Language (OWL) files. The OneSAF Objective System Architecture (i.e. OneSAF architecture) Environment Runtime Component (i.e. ERC) libraries were used for read, write and processing of OTF databases. ERC was implemented using Java and C++ source code. The Java source code was used by the OneSAF Architecture components and provided high level environment services and information on the OTF. The ERC lower level C++ code was access through Java Native Interface (JNI). Read, write and processing of the LTF was through C++ libraries developed by ARA and provided by RDECOM. The OpenSceneGraph C++ OpenFlight plug-in libraries provided read and write functionality for OpenFlight databases. The Pellet API was used for read, write and queries to the Ontology Web Language (OWL) files use by the prototype architecture.

### ***Terrain database apparatus used in the experiment***

This section provides information on the terrain databases used as apparatus in the experiment. Background information on the selection criteria and feature content is provided. As proposed in the Research Plan in chapter 4 the case study experiment included different live, virtual and constructive TDB representations. The TDB selection criterion was based on;

1. Availability
2. Compatibility with the available versions of the OTF, LTF and OpenFlight libraries
3. Matching extents
4. Common features between the TDB.



**Figure 26 - Prototype architecture TDB common area of interest**

Figure 26 shows the final experiment common area of interest. The OTF extents are shown in brown, the LTF extents in amber and the OpenFlight extents in blue.

The selection of the OTF for the experiment was primarily based on the version of the OneSAF Environment Runtime Component (ERC) that was used in the prototype architecture. Early development on the architecture OTF API interface and partial regeneration was performed using the OneSAF Architecture. Partial OTF re-generation

modifications to the OneSAF ERC were used as proof of concept on an early pilot test. The final OneSAF ERC modifications took a considerable amount of time and effort to complete and were developed to work under OneSAF version 4.5 and used ERC / OTF build 7 - version 1 terrain databases.

The selection of the specific LTF was primarily based on the available LTF libraries, availability of LTFs, and common features between the OTF and LTF. After development of the OTF API interface implementation was complete, development of the LTF API interface started. The version of LTF that was selected for the experiment was provided by RDECOM and it was an early version of LTF format that was developed by ARA as part of RDECOM OneTESS program. After numerous consultations with RDECOM and ARA it was determined that the best selection of LTF would be around the town of Barstow in CA. ARA had done work for RDECOM under the OneTESS program that generated a correlated set of TDB. TDB in OTF, LTF and OpenFlight were available for Barstow in CA. At the time no documentation was available on the LTF API or any of the LTF databases. Understanding of the LTF API software and development of the prototype architecture LTF API interface implementation took a considerable amount of time as it was necessary to reverse engineer the LTF API and its use. Later on it was discovered that this LTF version 1.0 did not provide support the representation of bridge features. This presented a problem as the proposed methodology of chapter 4 was based on modification to a bridge

features. Instead of adding a bridge feature to the format and regenerating the LTFs it was decided to use an additional building feature for the experiment so that LTF could be used as provided. The selected LTF provided in the contract was named “c7\_textured”, probably because it contained textured representations of the buildings. The texture names in the c7\_textured LTF were also included as attributes for the LTF features.

Since none of the OTF databases provided by ARA contained bridges it was decided to use one of the original OneSAF version 4.5 databases as those databases contained bridges. The NTC\_terrain\_database was composed of 4 geo-cells around the National Training Center, with an area that overlapped the city of Barstow CA and contained bridge features in the area.

The selection of the FLT was primarily based on constraints imposed by the selection of the OTF and LTF described above. RDECOM / ARA also provided a number of OTF and OpenFlight TDBs along with the LTF. However, the LTF were small in extents and none of them contained overlaps with any of the bridge features contained in the NTC\_terrain\_database OTF. Since none of the ARA provided OpenFlight database overlapped the OTF and LTF it was decided that an OpenFlight database would have to be built. The OpenFlight database would overlap the OTF NTC\_terrain\_database and LTF ct\_texture and contain the bridge and building features.

The OpenFlight database was developed using TerraVista version 5 and was named myNTC.flt. The myNTC.flt was generated in OpenFlight and contained an external reference model for the bridge in the NTC\_terrain\_database OTF and an external reference model for the building features contained in both the LTF c7\_textured and the NTC\_terrain\_database OTF.

**Table 3 - Experiment TDB apparatus names and extents**

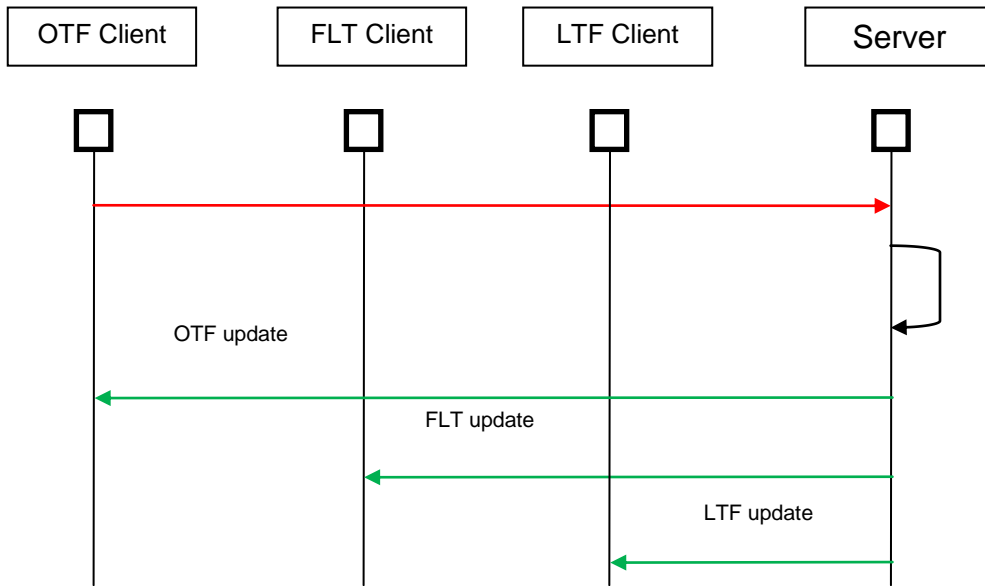
TDB name	Format	south west corner		south west corner	
		N Latitude	W Longitude	N Latitude	W Longitude
myNTC_terrain_database	OTF build 7 v 1	34	117	35	116
c7_textured	LTF	34.89800	117.01868	34.88481	117.02510
myNTC.flt	OpenFlight v 15.8	34 51 58.4395	117 3 57.9035	34 51 58.4395	117 3 57.9035

As explained in the methodology chapter 4 the TDB areas covered by the TDB were to be eventually normalized to 1 geo-cell. Therefore it was decided to reduce the original size of the NTC\_terrain\_database from 4 to 1 geo-cell. In addition to the reduction in size the OTF contained no buildings in the LTF overlap area. Therefore it was also necessary to add at least one building which could be used for the building change test.

The modifications to the original NTC\_terrain\_database that reduced the OTF extents and added a point feature building were saved under the name myNTC\_terrain\_database. Table 3 provides the names and extents of the TDB used in the experiment.

### **Experiment description: Apparatus and Architecture Integration**

As proposed in chapter 4 the experiment included live, virtual and constructive apparatus with client applications that are part of the prototype architecture built upon them. These clients are described in more detail below in the prototype architecture section. The primary function of the clients was to understand the corresponding live, virtual and constructive target formats that they serviced. The target formats used in the experiment were described in the previous section and are listed in Table 3. As shown on Figure 25 the hardware used for the experiment included 4 machines. One machine (IvcConstructive) hosted the OTF client which was embedded into OneSAF Architecture Management and Control Tool (MCT) component. This client was used to provide TDB changes for the experiment. The other two clients were developed primarily to interpret server update messages and incorporate the server TDB updates into local TDB repository. The machine IvcVirtual hosted the OpenFlight (i.e. FLT) client application and the machine IvcLive hosted the LTF client application. The prototype architecture server was hosted in the IvcServer machine shown in Figure 25 . More details on the implementation of the server and clients will be provided later.



**Figure 27 – DODAF (SV-10c) Event trace for change and update messages**

In the experiment changes were generated in the constructive OTF client through the OneSAF Management and Control Tool (MCT). Figure 27 provides an event trace for the change and update messages. One test case included a modification to the GENERAL\_DAMAGE\_FRACTION attribute value of a BRIDGE\_SPAN feature. The GENERAL\_DAMAGE\_FRACTION attribute value for a destroyed bridge span was set on the OneSAF MCT. The bridge span attribute change in the OneSAF MCT generated ERC attribute updates within OneSAF Architecture that were delivered to the OTF embedded client. The local attribute changes were translated to an XML change message and sent to the prototype architecture server for processing and update of the

other clients. The second test case included modifications to the GENERAL\_DAMAGE\_FRACTION attribute value of an ERC BUILDING feature. Processing of this building attribute changes was similar to the bridge modification.

In the experiment, changes occurring within the constructive client were communicated to the server using XML messages. XML was used to represent and transmit the TDB change messages. Other formats like ASCII and Java RMI or even HLA may also be applicable for the transmission of the message. No attempt was made to define the components of a standard change or update message as that challenge is beyond the scope of this research and left for future researchers. Example XML messages and more details are provided on APPENDIX C:.

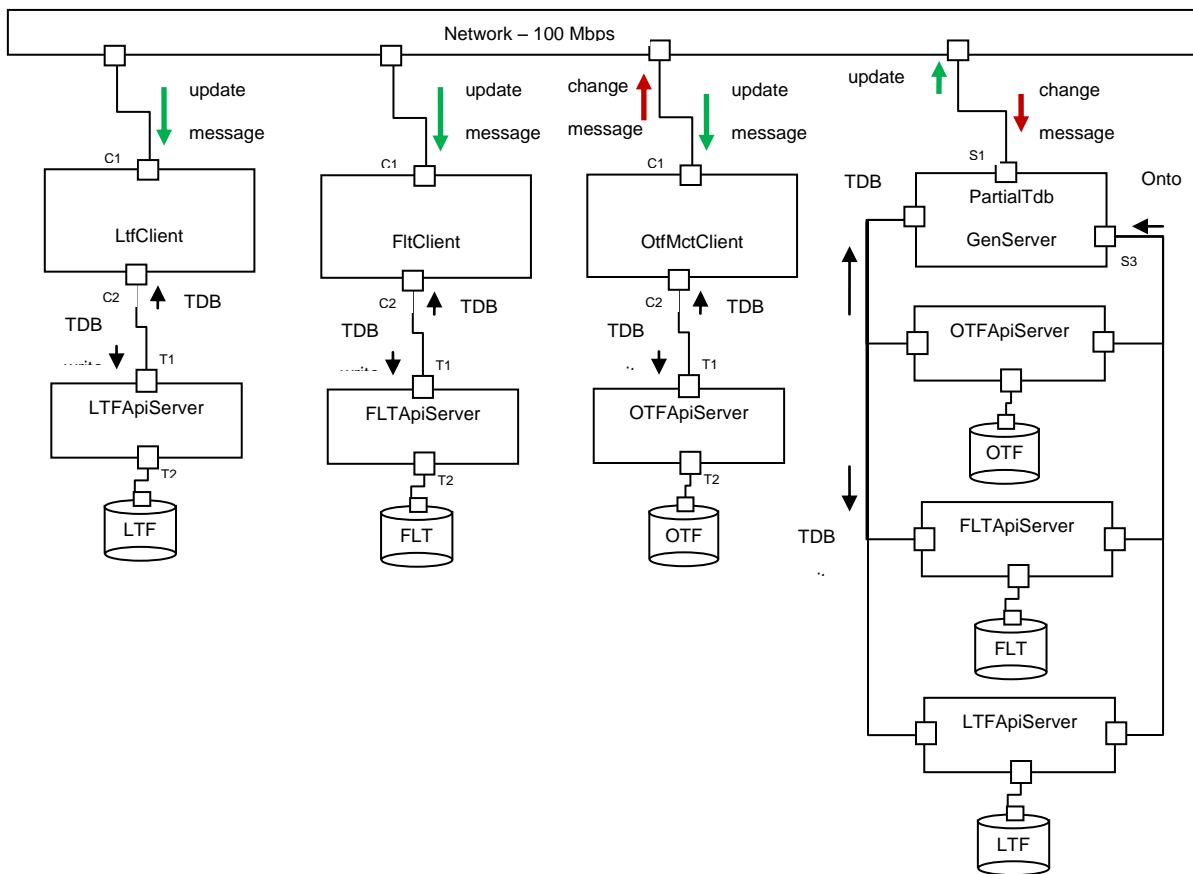
Log files for the server and client application were generated after every experiment run. A log file set of included log files for the server, and all clients. Log files including information collected on August 04, 2011 for a building attribute change are provided in APPENDIX B:. The log files contain information on the execution of the different software functions as well as timing information. Log statements capturing the TDB client change and server update message size along with the arrival times were use for the calculation of network utilization data. Log statements with time stamps indicating the start and end of different process were used in the prototype architecture to assess and debug functionality. The prototype architecture also included server and client logs



time for total processing times. The total processing times were used as data for the calculation of overall TBD change and update processing time.

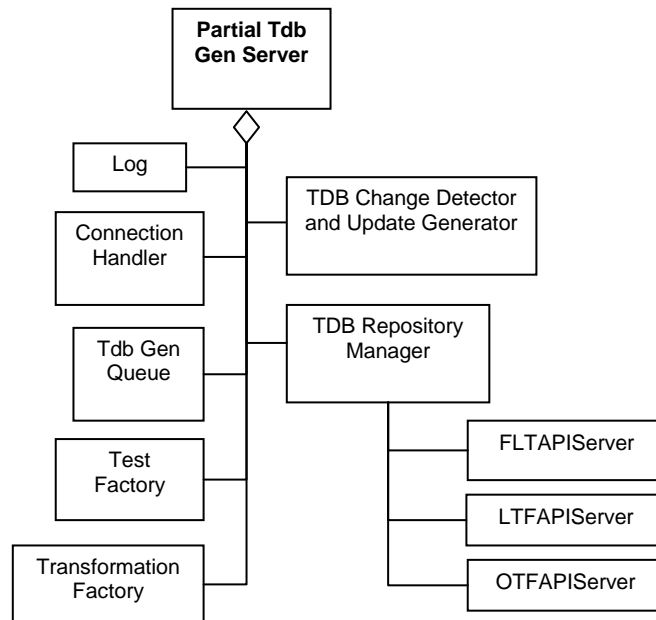
### **Architecture realization**

This section focuses on the prototype architecture actually implemented during this research. The theoretical discussion of this architecture was given in Chapter three. The discussion of the architecture starts with a description of the sever implementation. The main topics of the server discussion focus on the agent and the ontology models that support the processing of TDB changes and the generation of consistent TDB updates for the heterogeneous TDB clients. After the server functionality is explained, the details on the client implementations are provided.



**Figure 28 – DODAF SV-1 system diagram used to implement the Bi-directional Ontology-Driven TDB Generation Architecture. Experimental tested flows are highlighted in red and green.**

The Bi-directional Ontology-Driven TDB Generation Architecture prototype (i.e. prototype architecture) shown in Figure 28 is a special implementation of the theoretical architecture shown in Figure 14. As mentioned elsewhere the case study prototype architecture includes FTL, LTF and OTF clients as well as a server. The red and green arrows in figure 24 show the flow of client-to-server TDB change message and server-to-client update messages.



**Figure 29 - UML class diagram of the Prototype Architecture Server (PartialTdbGenServer class)**

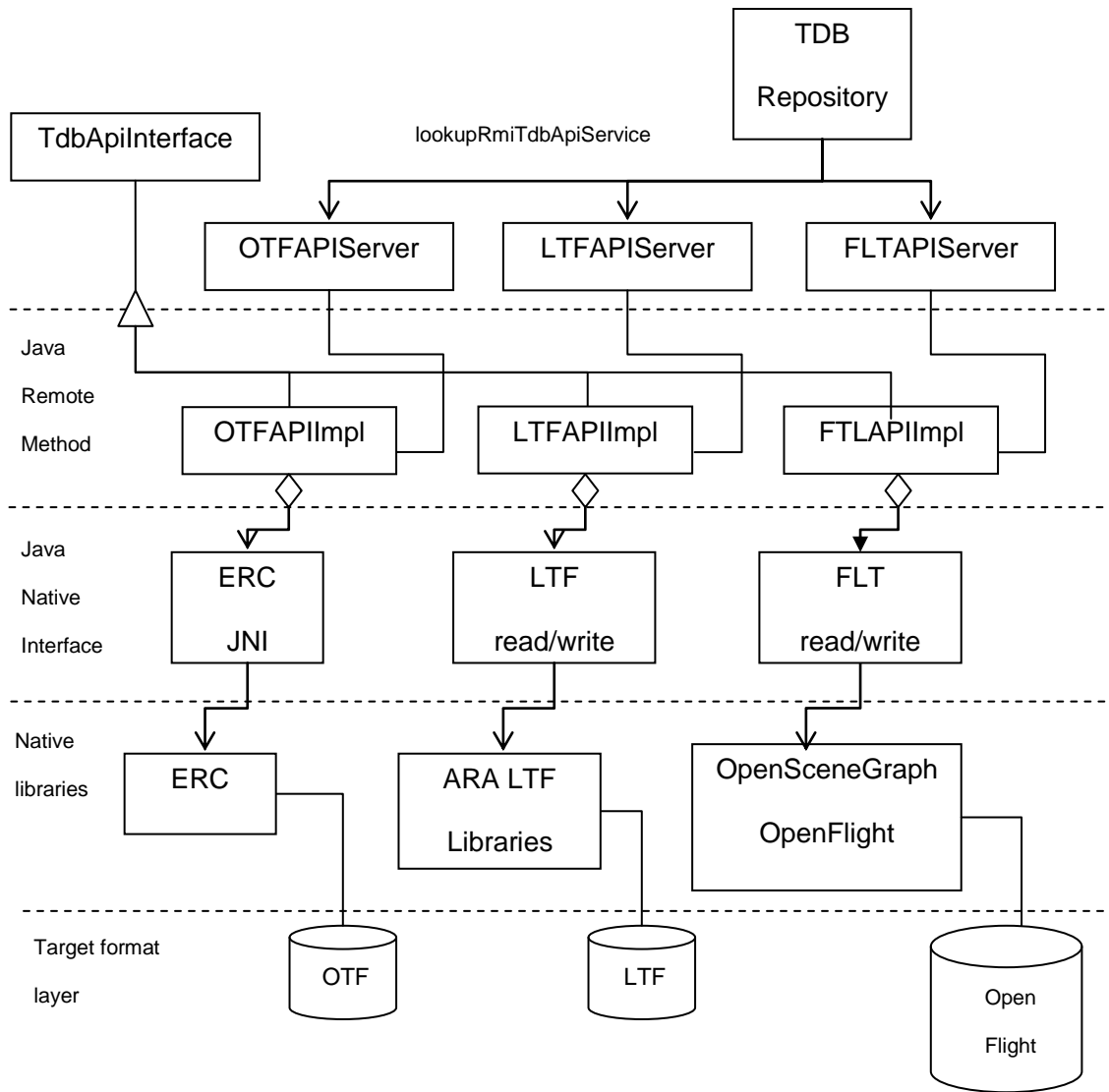
### ***Prototype architecture Server***

The Prototype Architecture Server (PartialTdbGenServer class) was implemented as proposed in Chapter 3 Figure 16. The UML class diagram the server is shown in Figure 29 and the interaction between server and the client are shown on the Figure 28. The main components of the server included a logger (Log class), network connection handler (ConnectionHandler class), message queue (TdbGen\_Queue), TDB Change Detector and Update Generator, and TDB Repository Manager. The first part of this section describes the TDB API interface and provides and insight into the way that the architecture implementation was isolated from the OTF, LTF and FLT read and write

implementation details. The next section describes the TDB Repository Manager by highlighting the central and generic point of access for TDB data element information. A similar approach was used for access to the ontologies through the Ontology Repository Manager. The Ontology Repository Manager section provides information on the OWL knowledge based implementation. The discussion the ontologies lead to the discussion of the TDB Change Detector and Update Generator and its components. In the TDB Change Detector and Update Generator section the implemented agent behaviors are discusses and related to the ontological information.

#### **TDB API INTERFACE**

The TDB API interface included implementations for a number of generic XML generation and interpretation services as well as TDB read, update and write interfaces that provided TDB data to all the component of the architecture. The TDB API interface provided a layer access approach that isolated the TDB native read/write libraries shown in Table 2 from the rest of the architecture. At the lowest layer or target format layer were the OTF, LTF and OpenFlight (FLT) target formats used in the experiment.



**Figure 30 – UML class diagram of the TDBRepositoryManager and the different TDB API implementations and libraries**

Above the physical layer were the Native libraries included in Table 2. One layer above that the JNI layer provided Java access to the C++ native libraries below. For ERC it

was necessary to extend both the OneSAF ERC JNI and the ERC C++ implementation to include to partial regeneration. The LTF read/write JNI and FLT read/write JNI shown in Figure 30 were completely developed to include the functionality needed by the LTF API implementation and FLT API implementation that was not provided by the native libraries.

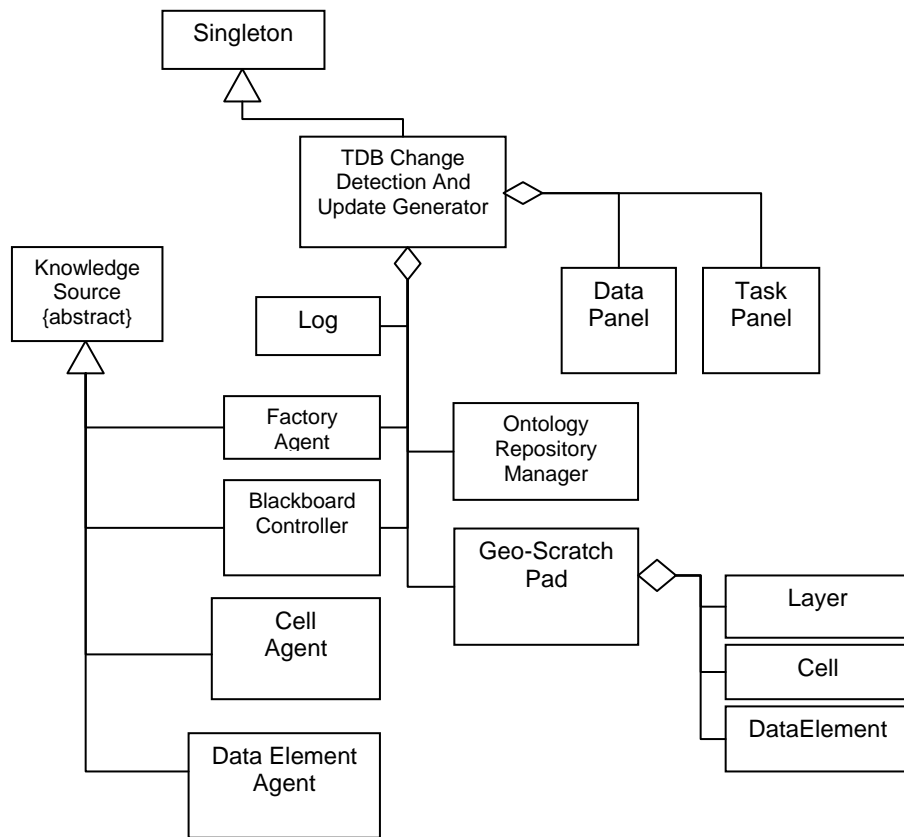
The TDB API interface (TDBApiInterface class) included a number of generic XML generation and interpretation services as well as TDB read, update and write interfaces that needed by the prototype architecture. This functionality needed to be implemented by the read/write libraries at the “Native library” layer at the bottom of Figure 30 . This resulted in target format specific version of the interface for OTF (OTFApiImpl class), LTF (LTFApiImpl) and the FLT (FLTApiImpl class).

The Java Remote Method Invocation (RMI) layer (shown on Figure 30) was necessary to isolate the runtime environments due to variation in environment settings, compiler versions and operating system runtime libraries. The legacy OneSAF ERC version that was used in the prototype architecture required a GNU compiler (gcc v 3.3) that conflicted with the more recent OpenSceneGraph compiler (gcc v 4.X) and runtime shared object libraries. The approach used in the prototype architecture included the use of Java Method Invocation (RMI) to invoke methods on a separate Java virtual machine (OTFApiServer, LTFApiServer and FLTApiServer) therefore isolating the

runtime environments. This approach resulted in a more stable system but required the implementation of an additional TDB API server application within the server and client machines.

#### **TDB REPOSITORY MANAGER**

The TDB Repository Manager (TdbRepositoryManager class) was implemented as proposed in Chapter 3 (reference Figure 16). As shown on Figure 30 it provided a common access point to the TDB API interfaces. The TDB Repository Manager communicated with the necessary TDB API server (OTFApiServer, LTFApiServer and FLTApiServer) which in turn obtained the necessary information through the corresponding OTFApiImpl, FLTApiImpl and or LTFApiImpl. In turn the TDB API implementations relied on the native TDB libraries (ERC, ARA LTF and OpenSceneGraph OpenFlight) for direct access to the TDB data. This approach enabled the use of the native TDB read and write libraries but isolated the implementation details from the rest of the architecture.



**Figure 31 -UML class diagram for the TDB Change Detector and Update Generator**

#### **TDB CHANGE DETECTOR AND UPDATE GENERATOR**

The TDB Change Detector and Update Generator

(TdbChangeDetectionAndUpdateGenerator class) was implemented as described in chapter 3 as a multi-agent blackboard architecture. The TDB Change Detector and Update Generator provided a way for multiple agents to work together to integrate the client TDB change message into the TDB database repository. The TDB Change



Detector and Update Generator provided and managed the resources for a set of agents as they operated on TDB data element in a common memory area called the Geo-Scratch Pad. In the multi-agent blackboard architecture all the agents worked towards a common set of TDB integrity and correlation goals. The design and implementation functionality of the agents were driven by the TDB data element change integration and correlation goals and the knowledge base.

The main component of the TDB Change Detector and Update Generator are shown on Figure 31 and included an event logger (Log class), factory agent, (FactoryAgent class) blackboard controller (BlackboardController class), task panel (BlackBoardTaskPanel class), data panel (BlackBoardDataPanel class), ontology repository manager (OntologyRepositoryManager class) and Geo-Scratch Pad (GeospatialScratchPad class). The following sections describe these components in more detail.

#### **Blackboard Task and Data Panel**

The data panel and a task panels (BlackBoardDataPanel and BlackBoardTaskPanel classes) were the main communication medium between the agents in the multi-agent blackboard architecture. Data and goals were posted to the data panel and potential agent contributions or actions were posted to the task panel.

The TDB change message information that arrived to the server was loaded into the data panel with the intention to provide context for the incorporation and correlation

task. For example, when the OneSAF bridge span attribute was modified in OneSAF client, the change message that arrived at the server was used to create an entry in the blackboard data panel that indicated that a specific bridge span data element was modified. The information in the data panel included data element information such as a type, unique id, extents and attribute changes. The log file on APPENDIX B: includes information collected on the server on August 04, 2011 for a building attribute change. The server August 04, 2011 log contains the specific "FeatureId" for the modified OTF building, which in this particular test case was the OTF unique identifier 9c6d352c4ca211e08459002421a8c4c6.

The data element unique identifiers implementations varied with the target formats. Unique ids for the OTF happen to match the universal unique identifiers used in the OTF, but for LTF and OpenFlight it was necessary to generate unique identifiers not contained with the TDB. The unique identifier implementation for OpenFlight was eventually based on the data model. A technique for generating unique ids for groups, external references, level of detail, and other OpenFlight node types was needed. For example in OpenFlight a 3D model may be stored within a group or as an external reference model. The latter would use a reference to an external file that contains the 3D model representation. In OpenFlight the unique identifier for external reference models was built using a combination of the OpenFlight database file name and the name of the external reference model file. This was necessary, because the same

external reference model could be used in multiple files. In LTF the unique identifier for data elements was built from a combination of the internal LTF tile, column, row, layer and the feature indices that provide for a unique identification. As describe previously unique identifiers were used by the ontology individuals to identify specific data elements in the TDB and provide specific information on a specific data element contained in the TDBs.

### **Geo-Scratch Pad**

The Geo-Scratch Pad (GeospatialScratchPad class) was implemented, as described in chapter 3, as a container of geo-spatial data that was described by layers, cells and data elements (reference Figure 31). The Geo-Scratch Pad was basically a common TDB where the internal TDB repository data and client change message was loaded for processing. In the prototype architecture the type of data element that could be loaded from the TDB repository included specific OTF, FLT and LTF data elements (DataElement, DataElement\_FLT and DataElement\_LTF class). The attributes of the DataElement, DataElement\_FLT and DataElement\_LTF classes were developed to match the particular TDB data model.

### **Ontology repository manager**

The Ontology Repository Manager (OntologyRepositoryManager class) was implemented as proposed in Chapter 3 (reference Figure 16) and its main function was to provide read and write access to the ontologies as well as support for agent queries discussed below. In the prototype architecture the Ontology Repository Manager used

the Pellet open-source Java based API for loading, writing and inference of OWL version 2 ontologies.

The Ontology Repository Manager provided support for member functions such as listing TDB in the repository, providing dependent data elements for a given ontology class, providing integrity and correlation tests for ontology individuals, and providing transformation data for ontology individuals. The next section provides a description of the ontologies that the Ontology Repository Manager controlled.

#### ONTOLOGY REPOSITORY

The ontologies supporting this prototype architecture are a set of descriptive statements that describe TDB structure, data element integrity and correlation tests, and data element transformations. The ontologies were implemented in OWL 2.0. The statements that make up the ontology are called axioms. In OWL 2, objects are individuals, categories are classes and relations are properties. Properties in OWL 2 are further subdivided. Object properties relate objects to objects (i.e. OTFLineBridge isComposedOf OTFPointBridgeSpan), while datatype properties assign data values to objects (i.e. ECBridge hasClassificationCode BRIDGE).

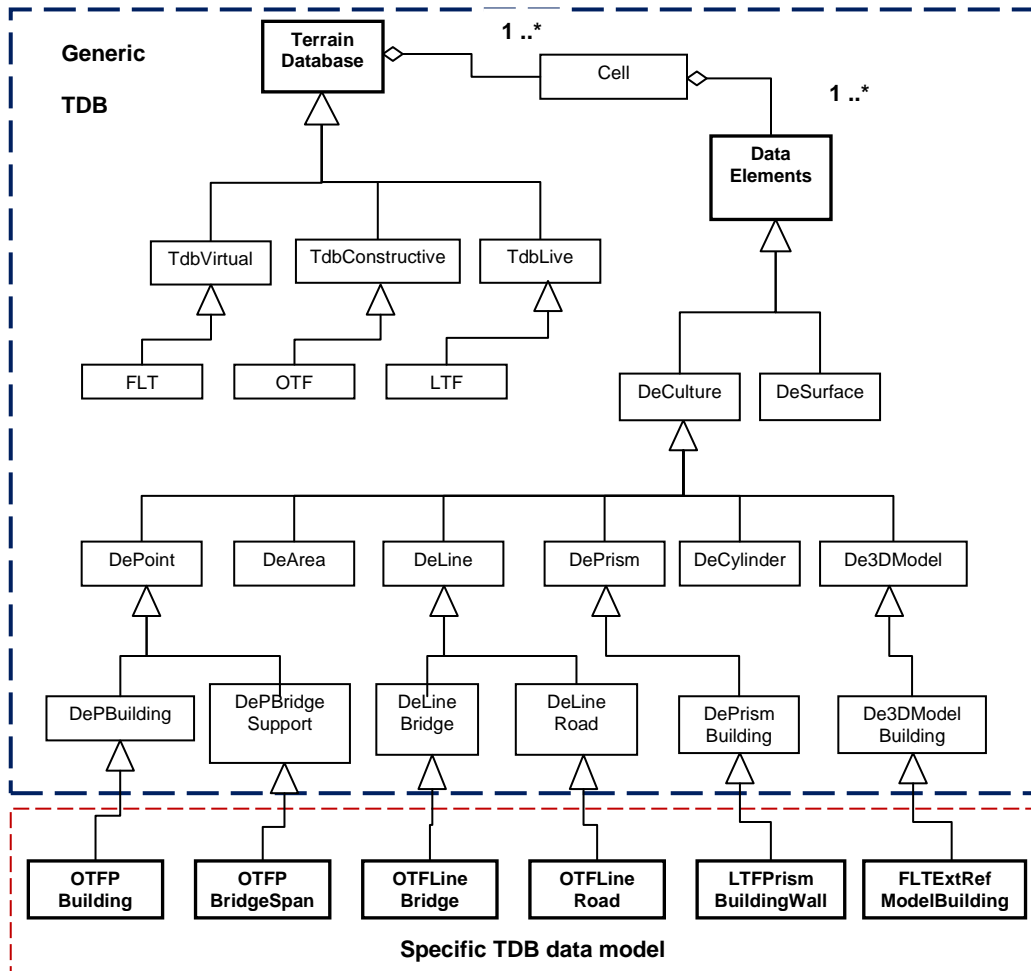


Figure 32 UML class diagram of the ontology TerrainDatabase class

*ONTLOGY TERRAINDATABASE CLASS*

The top level of the ontology included a TerrainDatabase class and subclasses for constructive (TdbConstructive class), live (TdbLive class) and virtual (TdbVirtual classes). The particular ontological TDB classes used in the case study OTF, LTF and

FLT are leaf nodes in this taxonomy of classes. Figure 32 shows the TerrainDatabase class and the lower level OTF, LTF and FLT classes. Inside the OTF, LTF and FLT classes there were definitions for the cell (Cell class) and data elements (DataElement class) classes that were used to describe the data models of the OTF, LTF and FLT TDB.

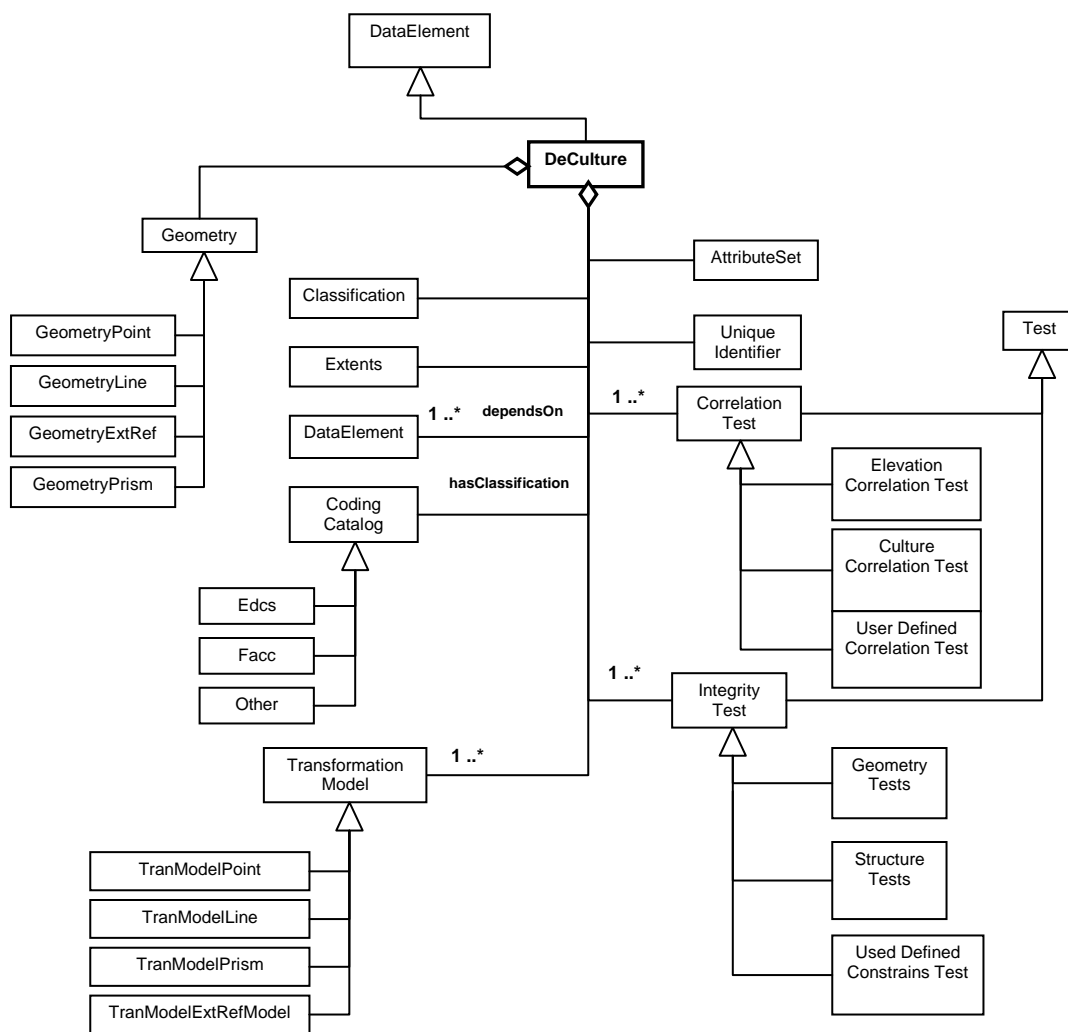
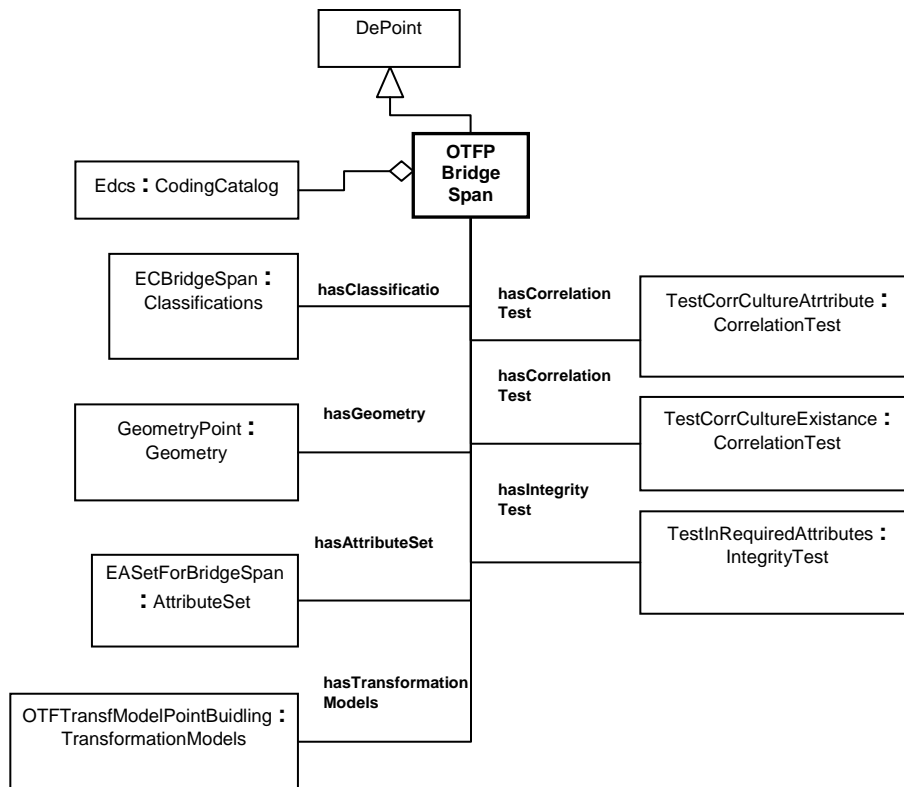


Figure 33 – UML class diagram for the ontology DataElement class

#### *ONTOLOGY DATAELEMENT CLASS*

The main purpose of the DataElement class and subclasses was to capture the TDB data element properties that not only described the data model but also information that agents needed to test and transform the data elements. The ontology DataElement class, shown on Figure 33, was used as the parent class for the cultural data elements (DeCulture class) class within the live, virtual and constructive TDBs. In the case study the DeCulture class contained object properties such as coding catalog classification (Classification class), extents (Extents class), unique identifiers (UniqueIdentifier class), dependent data elements (dependOn property and DataElement class), integrity (IntegrityTest class) and correlation tests (CorrelationTest class) and transformations (TransformationModel class). The object properties in the ontology provided support for the information that the agents needed in order to determine dependent data elements, run integrity and correlation test, and perform data element transformations.



**Figure 34 - UML class diagram of OTFPBridgeSpan**

Derived classes of the DeCulture class represented the actual data elements used by the OTF, LTF and FLT TDBs. For example the class diagram shown in Figure 34 shows that the OTFPBridgeSpan class extends the DePoint class by adding specific information needed by this data element. Figure 34 shows that an OTFPBridgeSpan uses the Edcs coding catalog, hasClassification ECBridgeSpan, and hasGeometry of type GeometryPoint. Note how the OTFPBridgeSpan has specific integrity and correlation tests names. In this case the integrity tests name was TestIntRequiredAttributes and the



correlation tests were TestCorrCultureExistance and TestCorrCultureAttribute. The OTFBridgeSpan ontology object properties match the OTF data model for a bridge span features.

The coding catalog, classification code and geometry type was used to pinpoint a particular ontology data element class that described TDB data element stored in the Geo-Scratch Pad. Recall that the mappings from the target formats feature types to the data element types in the Geo-Scratch Pad were done by the TDB API interface implementation. Once the ontology class was identified it was then possible to obtain more information the particular data element. The additional information for the data element included the class and super class attributes shown in Figure 33 and Figure 34. Some of the most important included the dependsOn, hasIntegrityTest, hasCorrelationTest and hasTransformationModelId object properties.

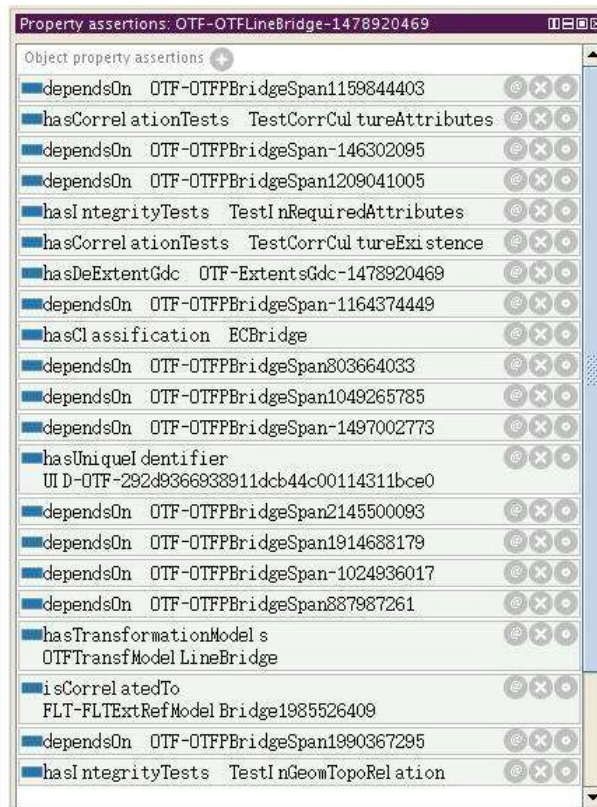
Superclasses 

● (depSupports <b>some</b> OTFLineRailroad) or (depSupports <b>some</b> OTFLineRoad)
● DeLineBridge
● depComposedOf <b>some</b> OTFPBridgeSpan
● hasAttributeSet <b>value</b> EASetForBridgeDefault
● hasClassification <b>value</b> ECBridge
● hasCorrelationTests <b>value</b> TestCorrCultureAttributes
● hasCorrelationTests <b>value</b> TestCorrCultureExistence
● hasGeometry <b>value</b> GeometryVectorLine
● hasIntegrityTests <b>value</b> TestInGeomTopoRelation
● hasIntegrityTests <b>value</b> TestInRequiredAttributes
● hasTransformationModels <b>value</b> OTFTransfModelLineBridge
● usesCodingCatalog <b>some</b> Edcs

**Figure 35 - DeLineBridge object properties**

The dependsOn object property pointed to dependent data elements within the TDB. These were data elements that for one reason or another needed to be consider for testing and potential regeneration. There were a number of derived object properties from dependOn such as depIn, depNextTo, depComponentOf, depComposeOf, depOver, depSupports, depUnder. Figure 35 shows the depSuports and depComposedOf object properties object properties of the OTFLineBridge class. This model shows that a OTFLineBridge may supports (depSupports object property) a road or railroad and is composed of (depComposedOf object property) OTFPBridgeSpans.

Integrity and correlation tests was another type of information that was provided through object properties. Note on Figure 34 how the OTFPBridgeSpan has specific integrity and correlation tests names. In this case the integrity tests name was TestIntRequiredAttributes and the correlation tests were TestCorrCultureExistence and TestCorrCultureAttribute. These two tests objects are examples of ontology individuals.



**Figure 36 - Example NTC\_terrain\_database line bridge individual properties**

Another important object property was the hasTransformationModels. This ontology class property was used to identify the transformation test that generated objects of this type. For example Figure 34 shows that the transformation model called

TDBTransfModelLineBridge that could be used to generate data elements of type OTFLineBridge.

#### *INDIVIDUALS*

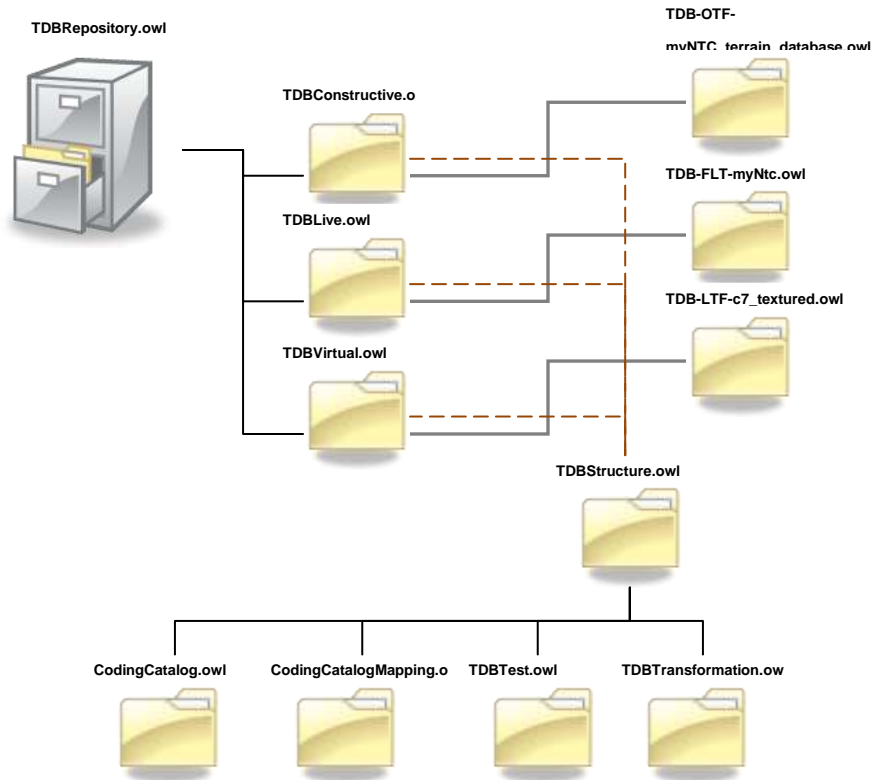
The ontology classes in the case study were used to group individuals that have similar properties in common. Individuals in the case study ontologies represent actual objects within the TDB structure, coding catalogs, tests and transformations as well as actual data elements within the TDB used in the experiment. The general OTF line bridge relationships became specific individual relationships present in the TDB. For example the ontology OTFLineBridge class (reference Figure 35) defined the object properties for OTF line bridges but it did not pointed to any specific bridge within the myNTC\_terrain\_database. Figure 36 shows data for one of the line bridge individuals contained in the myNTC\_terrain\_database. In this particular case the OTF individuals were stored in an OWL file called myNTC\_terrain\_database.owl. The OTF line bridge depended on (dependsOn object property) a number of specific bridge span individuals that actually exist with the myNTC\_terrain\_database. These are no longer potential relationships like the ones that may be provided by the OTFLineBridge class, these are actual relationships present in the myNTC\_terrain\_database. This is precisely the type of relationship that data element agents used to determine data elements that need to be considered for testing and regeneration.

Other examples of individual include coding catalog classification codes such as ECBridge, ECBridgeSpan, and FCBuilding. These individuals were used to provide specific object property values that uniquely identified data element classes. For example, Figure 35 shows how the OTFLineBridge class used the “hasClassification value ECBridge” axiom to assert that OTF line bridges had a classification of ECBridge. The supporting ECBridge individual contained a property string “BRIDGE” that was used to identify this individual.

Ontology individual data similar to that presented in Figure 36 was generated for the OTF, LTF and LFT terrain databases used for the case study. The OTF, LTF and LFT terrain databases in Table 3 were pre-processed to extract data element individuals. Each TDB data element individual was provided data such as classification code information, unique identifiers, specific individual dependent data elements, extents, correlated data element individuals, integrity tests individuals, correlation tests individuals and transformation model individuals.

Functions that supported the generation of this ontological individual information were added to the specific TDB API implementation. The myNTC\_terrain\_database OTF, myNTC.flt OpenFlight and c7\_textures LTF were processed and the individual data stored in the corresponding TDB-OTF-myNTC\_terrain\_database.owl, TDB-LTF-c7\_textured.owl and TDB-FLT-myNtc.owl OWL files. This allowed for the separation of

class and individual ontological data. The separation of ontological class and individuals allows for other terrain databases to be added to the TDB repository thus generalizing the architecture to other terrain database applications.



**Figure 37 - OWL file hierarchy**

*OWL FILES*

The knowledge base classes, properties, axioms and individuals described on previous section were stored in Ontology Web Language (OWL) files. OWL supports the sharing and or reuse of ontologies by making it possible for one ontology to import another

ontology. When an ontology imports another ontology, all of the class, property and individual definitions that are in the imported ontology are available for use in the importing ontology. The OWL import mechanism was used to build a TDB repository of information that enable import of other ontologies as well as the addition of new TDB data models and target formats.

As shown on Figure 37 the TDBRepository.owl file was the primary container of information as it imported or referenced the OWL data models for TDBConstructive.owl, TDBLibe.owl and TDBVirtual.owl files. The TDBConstructive.owl, TDBLive.owl and TDBVirtual.owl files included specialized descriptions of the corresponding OTF, LTF and FLT formats as well as individual data for the specific TDB used in the experiment. The main idea in the design of this hierarchy was that new TDB data models would be added to the TDBRepository.owl by importing the new TDB data model description.

**Table 4 - TDB file name to OWL file mapping**

<b>Format</b>	<b>TDB dir/file name</b>	<b>Ontology file name</b>
OTF	myNTC_terrain_database	TDB-OTF-myNTC_terrain_database.owl
LTF	c7_textured	TDB-LTF-c7_textured.owl
OpenFlight	myNtc.flt	TDB-FLT-myNtc.owl

Table 4 shows the ontological individual OWL data file and the corresponding source TDB in TDB repository. These OWL files contained specific extents, data elements, coordinates, as well as the necessary relationships and properties for the TDB data stored in the corresponding TDB. Similar approach can be followed to add additional OTF, LTF and FLT databases to the repository.

The OWL files TDBStructure.owl, CodingCatalog.owl, CodingCatalogMapping.owl, TDBTest.owl and TDBTransformation.owl, shown in Figure 37, contained the generic data model for TDB. The generic data model included supporting information on the classes and object properties, data properties and in some instances individuals for live, virtual and constructive TDBs. For example the generic data model included all of the Figure 32 classes above the red dashed line. This set of core ontology classes defined basic concepts that were specialized by lower level classes contained in the TDBConstructive.owl, TDBLibe.owl and TDBVirtual.owl files (reference leaf nodes of the taxonomy shown in Figure 32). The idea was to provide a common data model that could be specialized for the specific TDB data model.

### **Knowledge Source Agent**

The prototype architecture implemented the agents proposed in Chapter 3. The abstract functionality of the agents proposed in Chapter 3 was included in a Knowledge Source Agent (KnowledgeSource class). Since this was an abstract agent no instances of this particular agent are possible only the derived classes can be instantiated. The agents



used by the prototype architecture are shown in Figure 31 and included the Blackboard Controller (BlackboardController), Factory Agent (FactoryAgent class), Cell Agent (CellAgent class) and Data Element Agent (DataElementAgent class).

Complex multi-agent architectures can either explicitly attempt to model human psychology (i.e. cognitive architectures) or simply exhibit some aspects of general intelligent behavior. Modeling human psychology was beyond the scope of case study and what it will take for identifying data element and integrating them into an internal TDB repository and client TDB. The agents in the prototype architecture contained enough functionality and knowledge to assess the client TDB data element change and relate those changes to an unbalanced, inconsistent or uncorrelated state of the Geo-Scratch Pad. Furthermore, this inconsistent or uncorrelated state lead the agents to the selection of adjustments or transformation that modify the collective set of data elements in the Geo-Scratch Pad to achieve the best possible correlated description for all TDB. Transformations were implemented on the affected data element and only if the data element was found to contain an inconsistent representation within an across representations. This approach enabled the efficient and partial regeneration of the TDBs. The following sections provide more details the specialized versions of the Knowledge Source Agent.

## Blackboard Controller Agent

As part of the changed data elements processing the Blackboard Controller

(BlackBoardController class) loaded a number of process goals into the data panel

(DataPanel class).

**Table 5 – Implementation of the Controller from Figure 17: goal and sub-goals**

#	Goal	Sub-Goals	Pre conditions	Action	Outputs
1	Create Agents			<ul style="list-style-type: none"> <li>Load DataElements</li> </ul>	
2		Create Cell Agents	Load DataElements	<ul style="list-style-type: none"> <li>Create CellAgents</li> </ul>	<ul style="list-style-type: none"> <li>Create CellAgents</li> </ul>
3		Create DataElement Agents	<ul style="list-style-type: none"> <li>Create CellAgents</li> <li>Load DataElements</li> </ul>	<ul style="list-style-type: none"> <li>Create DataElement Agents</li> </ul>	<ul style="list-style-type: none"> <li>CreateDataElement Agents</li> </ul>
4	Integrity Test Goals	Run DataElement Integrity Test	<ul style="list-style-type: none"> <li>Create CellAgents</li> <li>Create DataElement Agents</li> </ul>	<ul style="list-style-type: none"> <li>Run DataElement Integrity Test</li> </ul>	<ul style="list-style-type: none"> <li>Geo-Scratch Pad LayerIntegrityOK</li> <li>Regen Related DataElements</li> </ul>
5		Regen Dependent DataElements	<ul style="list-style-type: none"> <li>Create CellAgents</li> <li>Create DataElement Agents</li> <li>Regen Related DataElements</li> </ul>	<ul style="list-style-type: none"> <li>Regen Related DataElements</li> </ul>	<ul style="list-style-type: none"> <li>Run DataElement Integrity Test</li> </ul>
6	Correlation Test Goals	Run Correlation	<ul style="list-style-type: none"> <li>Create CellAgents</li> <li>Create DataElement Agents</li> <li>Run DataElement IntegrityTest</li> </ul>	<ul style="list-style-type: none"> <li>Run DataElement Correlation</li> </ul>	<ul style="list-style-type: none"> <li>DataElements Correlated</li> <li>Regen GSPDataElement</li> </ul>
7		Regen DataElementsAfter	<ul style="list-style-type: none"> <li>Run DataElement Integrity Test</li> </ul>	<ul style="list-style-type: none"> <li>Regen GSPDataElement</li> </ul>	<ul style="list-style-type: none"> <li>Run DataElement Integrity Test</li> </ul>

#	Goal	Sub-Goals	Pre conditions	Action	Outputs
		Corr Failure	<ul style="list-style-type: none"> <li>Regen</li> <li>GSPDataElement</li> </ul>	t	<ul style="list-style-type: none"> <li>Geo-Scratch Pad</li> <li>LayerIntegrityOK</li> </ul>
8		Regen Geo-Scratch Pad Cells	<ul style="list-style-type: none"> <li>Run DataElement Integrity Test</li> <li>Geo-Scratch Pad Layer IntegrityOK</li> <li>Regen</li> <li>GSPDataElement</li> <li>Regen GSPCells</li> </ul>	<ul style="list-style-type: none"> <li>RegenGSPCells</li> </ul>	<ul style="list-style-type: none"> <li>Run DataElement Correlation</li> <li>DataElements Correlated</li> </ul>
9		Run Cell Correlation	<ul style="list-style-type: none"> <li>Run DataElement Integrity Test</li> <li>Geo-Scratch Pad Layer IntegrityOK</li> <li>DataElements Correlated</li> </ul>	<ul style="list-style-type: none"> <li>Run Cell Correlation</li> </ul>	<ul style="list-style-type: none"> <li>Geo-Scratch Pad Correlated</li> </ul>

The set of sub-goals used by the prototype are included in Table 5. Each sub-goal is composed of a set of pre-conditions that must be met in order for the action to be executed. Each sub-goal also included a set of outputs (data or state variables) that may be updated as a result of the action. As actions were executed, state variables were updated, pre-conditions met and this condition enabled other sub-goals and actions to be active for execution. For example, the pre-conditions for running the integrity test action were that all of the cell agent and data element agents were created. As shown in Table 5 (row 4 outputs column) after executing the integrity test the state of the variables Geo-ScratchPadLayerIntegrityOK and RegenRelatedDataElements were outputs. The state of the Geo-ScratchPadLayerIntegrityOK and

RegenRelatedDataElements were set by the agents to indicate the state of the data element integrity test. If the result of the test indicated that the state of the data element was not good (ScratchPadLayerIntegrityOK=false) the re-generation of the data element was necessary and indicated by the RegenRelatedDataElements=true. The state data for goals, sub-goals, pre-conditions, actions, and outputs was stored in the data panel and available to all the agents.

```
WHILE (!DONE) {  
    // ASK FOR AGENT CONTRIBUTIONS  
    CHECKFORKNOWLEDGESOURCECONTRIBUTION();  
    // SELECT AND EXECUTE AGENT CONTRIBUTION  
    MAKEKNOWLEGE SOURCECONTRIBUTION();  
    // CHECK GOALS  
    IF ( ISGOALACHIEVED() ) {  
        DONE = TRUE;  
    }  
}
```

The control loop for the Blackboard Controller agent (shown above) included a check for agent contributions followed by the selection, execution of agent actions. At every loop agents were given an opportunity to review the data panel and propose potential

contributions. After that the Blackboard Controller agent reviewed the contributions and selected the most applicable action for execution. In the prototype architecture each data panel item contained a level of confidence on the data item that could be used to weight or determine the importance of each contribution. However, the data panel items confidence level was not used for the selection of the most appropriate contribution. In the prototype architecture every agent that proposed an action was allowed to execute it. The Knowledge Base Agent provided basic primitive agent behavior that only allowed agents to propose action for which all pre-conditions were met.

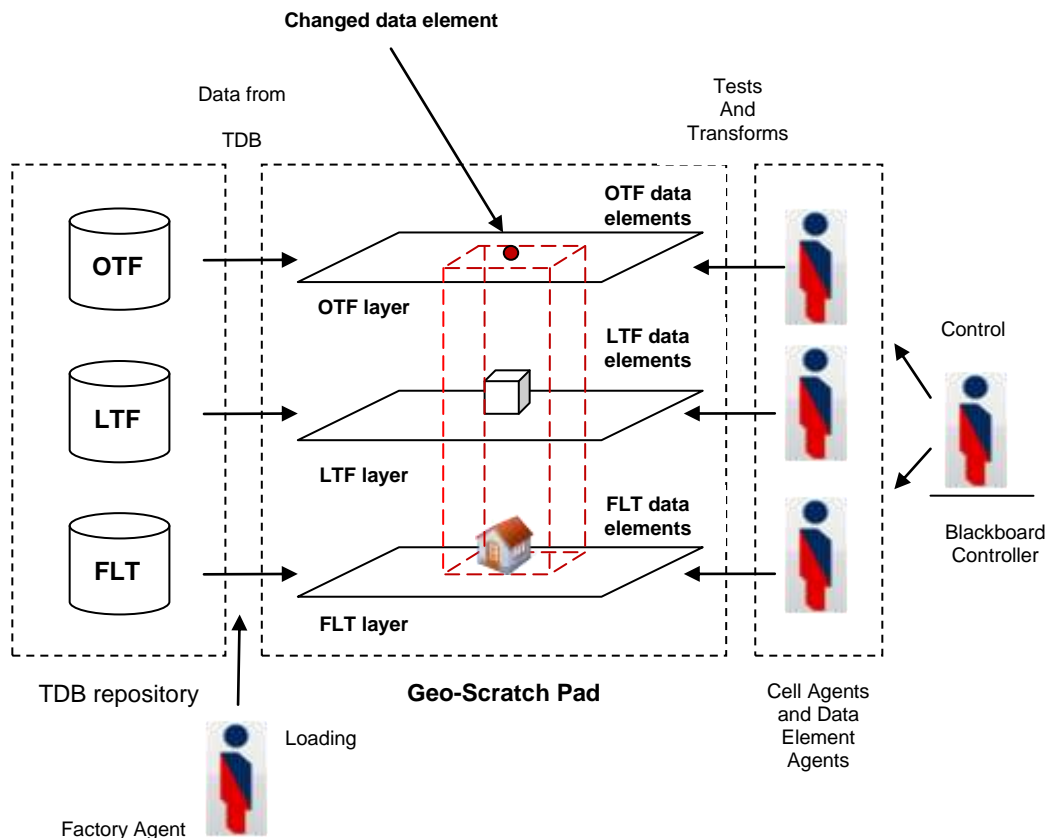


Figure 38 - TDB repository, Geo-Scratch Pad and Blackboard relationships

### **Factory Agent**

The Factory Agent was responsible for loading the data elements and for the creation of the necessary Cell Agents. The Factory Agent used the information stored in the data panel to load the changed data element into the Geo-Scratch Pad.

The strategy for loading data element was based on the change data element extents. The Factory Agent would issue a request to the TDB Repository Manager all for all the data elements that were contained within the area of interest in internal TDB repository. Figure 38 shows a red box for the extents on the top OTF layer of the Geo-Scratch Pad to illustrate the changed data element extents. The Factory Agent proceeded to created layers on the Geo-Scratch Pad for each one of the different data element types. For the prototype this included a potential set of OTF point, line and area data elements, LTF prism and cylinders and FLT external reference model. For the changes of the OTF client building attributes the Factory Agent created data elements of type OTF point, LTF prism and FLT external reference model in different Geo-Scratch Pad layers similar to those shown on Figure 38 . After loading the data elements the Factory Agent proceeded to identify and update the changed data element with the provided information on the data panel. A flag on the DataElement class was used to identify the changed data element as the source of the changes.

**Table 6 - Created Prototype Architecture agents by changed data element**

#	Changed Data Element	Data Elements on Geo-Scratch Pad	Cell Agents	Data Element Agents
1	1. Bridge Span	1. OTF Point bridge span 2. OTF Line bridge 3. OTF Line road 4. FLT External reference model bridge	1. OTF Cell, Point Layer Agent 2. OTF Cell, Line Layer Agent 3. FLT Cell External reference model Layer Agent	1. OTF Point bridge span Agent 2. OTF line bridge Agent 3. OTF line road Agent 4. FLT external reference model bridge Agent
2	1. Building	1. OTF Point building 2. FLT External reference model building 3. LTF prism building	1. OTF Cell, Point Layer Agent 2. FLT Cell External reference model Layer Agent 3. LTF Cell, Prism Layer Agent	1. OTF Point building Agent 2. FLT external reference model building Agent 3. LTF prism building Agent

After loading the data elements the Factory Agent proceeded to create cell agents (CellAgent class) for each one of the created layers in the Geo-Scratch Pad. As covered above the number of layers and data element in the Geo-Scratch Pad at any point in time was function of the change data element contained in the client change message and the ontology. Table 6 contains the particular Cell Agents that were created for the differnt changed data elements in the prototype architecture. As part of the creation the

Cell Agents were also register with the Blackboard Controller and data panels. This allowed the Blackboard Controller to be aware of their existence of the newly created agents.

### **Cell Agent**

As proposed in Chapter 3 the Cell Agents (reference Figure 19 and Figure 38 ) were designed to create and manage the necessary set of data elements agents that would achieve internal TDB integrity and correlation across TDB as defined in the knowledge base. The main functionality of the cell agents in the prototype architecture was the creation of the necessary Data Element Agents (DataElementAgent class).

In addition to the changed data element other dependent data elements were loaded into the Geo-Scratch Pad (reference Table 6). For the prototype this was limited to OTF, LTF and FLT data elements. The knowledge base ontologies provided information on dependencies between data elements within the TDB and across TDBs. For example, as shown in Figure 38 , the changes of the OTF client building attributes resulted in the creation of additional data elements of type LTF prism and FLT external reference model in different Geo-Scratch Pad layers. However, the provided ontological descriptions also allowed for more complex and indirect relationships. As shown on Table 6 the OTF client point bridge span attributes changes resulted in a Geo-Scratch Pad configuration that contained one OTF layer of point bridge span, one OTF layer of



line bridge, one OTF layer of line roads, and a FLT layer of external reference models. This was possible through the dependent data element relationship between the OTF point bridge spans, line bridge and line road features that was provided by the OTF ontology `depComposedOf` and `depSupports` properties (reference Figure 35 and Figure 36). The relationship between the OTF bridge line and the FLT external reference bridge model was provided by correlation relationships also stored in the ontology similar to those shown in Figure 36. The specific `isCorrelatedTo` property shown in Figure 36 links the OTF-OTFLlineBridge-1478920469 to the FLT-FTLExtRefModelBridge-1985526409. As part of the creation the Data Element Agents were also register with the Blackboard Controller and data panels. This allowed the Blackboard Controller to be aware of their existence of the newly created agents.

#### **Data Element Agent**

The data elements agents were designed in accordance with the proposed chapter 3 behavior and event trace shown in Figure 20. As described in Chapter 3 the Data Element Agents were directly responsible for a specific data element in the Geo-Scratch Pad. Figure 38 shows an illustration of the relationship between Cell and Data Element Agents and the data elements in the Geo-Scratch Pad and how these data elements relate to the TDB repository. The specific Data Element Agents created on the prototype experiment use cases are provided in Table 6. Like the layers in the Geo-Scratch the

number of data element was also a function of the changes and ontological relationships.

Once all of the Data Element Agents were created, state variables and goals were updated, the Data Element Agents tested the integrity of the data element within the TDB. In general, data element integrity within the architecture relates to the consistency and accuracy of the data elements representation within the TDB as described by the ontological model. In the experiment, Data Element Agents performed Integrity tests on the data elements to make sure that they complied with the data model restrictions as described in the ontology. The Data Element Agent's main function was to perceive the state of the data elements within the Geo-Scratch Pad through measurements, evaluate the results and transform the data elements if necessary. The agent behaviors were controlled through ontological descriptions which provided what test to run. In the experiment, the integrity test verified that all the required attributes exist on the data element. Support for test limits was provided within the prototype architecture ontology and agents. However, test limits were not used as there were no clear foundations for test limits values. Data Element Agents also performed correlation tests. Correlation tests both verify that all the necessary attributes and verify existence of features for correlation exist on all the representations. In summary, the Data Element Agent list of capabilities provided with in the prototype architecture included;

1. **Run data element integrity tests**
2. **Regenerate related data elements**
3. **Run data element correlation tests**
4. **Regenerate data element**

With this set of generic capabilities the Data Element Agent was equipped to propose integrity and correlation tests and to regenerate data elements (reference chapter 3 Figure 20). The specific ontological integrity and correlation tests as well as the transformations properties for the particular data element were provided by the Ontology Repository Manager. This data driven approach allowed for the specific details to be stored on the knowledge base. As shown in Figure 36, the prototype architecture ontology class properties that provided this information for the individual data element were the `hasIntegrityTests`, `hasCorrelationTests` and `hasTransformationModel` properties.

Each one of the agent's test and transformation capabilities was matched to a member function which was executed if the task was selected by the Blackboard Controller. In addition to these functions there were functions that allowed the agent to review the data panel and check for data elements inconsistencies flagged by other Data Element Agents. This functionality was necessary as it was possible for dependent data elements on one layer to be flagged as inconsistent as in the case of the bridge span and bridge line. In the prototype experiments the OTF point bridge span and line bridge

were stored in two different layers. The data elements inconsistency flagged notification mechanism allowed for the OTF point bridge span to flag the OTF point bridge line data element as potentially inconsistent data element. This allowed the OTF line bridge to test and discover that the OTF line bridge data element was inconsistent with the OTF bridge span and needed to be regenerated

### **Test Factory**

The following discussion provides more details on the process and test types developed for the experiment. The first step in the Data Element Agent integrity test process was to get a list of integrity tests for the data elements from the Ontology Repository Manager. The information returned by the Ontology Repository Manager was used to request a test object from the Test Factory (TestFactory class). The Test Factory implemented a software factory design pattern that provided generic interfaces for the creation of test object. The idea behind this design was to provide a central location interface and hiding the source the tests. In this way tests could be provided by a wide variety of sources, on different machines, and for different TDB formats.

The information on what tests to perform was stored in the ontology but the actual test implementation and execution code was provided by the Test Factory. The ontology provided a test name and that name pointed to a test object which was controlled by the Test Factory. Test parameters provided by the ontologies were designed to modify the

test execution. After the tests were performed the test results were provided back to the Data Element Agent for interpretation.

**Table 7 - Prototype tests classes**

Class	Description
TestIntegRequiredAttributes	Integrity test – Verify that all the required attributes exist on the data element.
TestCorrAttributeCompare	Correlation Test – verify that all the necessary attributes for correlation exist on all the representations.
TestCorrCultureExistence	Correlation Test – verify existence of features.

A generic framework was implemented within the Test Factory that allowed for any number test to be added to the system. Each test class inherited generic functionality that was specialized for the particular test. To add new test it was necessary to registration test object with the Test Factory and the addition of the test name to the ontology data elements. This would then enable the agents to use the new test.

Table 7 includes the main set of integrity and correlation tests used by the prototype architecture. The main integrity tests were related to attributes. The integrity test TestIntegRequiredAttributes was used to verify that all the required attributes existed in

the data element (reference Figure 35). The prototype architecture correlation tests included a verification of feature existence (TestCorrCultureExistence class) on other representation and the verification of correlated attributes (TestCorrAttributeCompare class).

In the prototype architecture testing of differences between attribute values is how the Data Element Agents were able to determine that changes in attribute values of the OTF point bridge span required regeneration of the FLT external reference model bridge. For example in the prototype architecture OTF ontology the OTF bridge span was related within the OTF to a specific OTF line bridge, which in turn was related to the FLT external reference model (reference Figure 35). Then, differences between the OTF EDCS coding catalog GENERAL\_DAMAGE\_FRACTION attribute and the FLT FACC coding catalog EXT attribute resulted in a attribute compare test failure. This test failure event flagged the FLT external reference model bridge data element for regeneration.

### **Transformation Factory**

The actual data element re-generation was performed by transformations provided by a Transformation Factory. The Transformation Factory implemented a software factory design pattern that provided generic interfaces for the creation of transformation objects. The idea behind this design was to provide a central location interface and hiding the source the transformation or TDB regeneration models. In this way the data

element transformation models could be provided by a wide variety of sources, on different machines, and for different TDB formats thus enabling the architecture to literary plug-in into other TDB Generation system.

Data element re-generation was performed by the Data Element Agent after detecting an integrity or correlation test failure. After determining that regeneration was necessary the first step for the Data Element Agent was to consult the Ontology Repository Manager for a list of transformation models. The transformation process then was to iterate over the list of transformation models. The list of transformation models contained the name of the transformation models that were needed. The names were provided to the Transformation Factory and transformation model were provided and executed on the data elements in the Geo-Scratch Pad.

**Table 8 - Prototype transformations**

<b>Class</b>	<b>TDB</b>	<b>Description</b>
OTFModelTransLineBridge	OTF	Generate a line bridge
OTFModelTransPointBridgeSpan	OTF	Generate a point bridge span
LTFModelTransfPrismBuilding	LTF	Generate a building
FLTModelTransfExtRefBridge	FLT	Generate external reference bridge model
FLTModelTransfExtRefBuilding	FLT	Generate external reference building model

A generic framework was implemented within the transformation factory that allowed for any number transformation to be added to the system. Each transformation class inherited generic functionality that was specialized for the particular transformation model. Registration of the transformation object with the factory and addition of the transformation name to the ontology data elements would then enable the agent to use the new transformation.

The actual transformation model execution code was provided by the Transformation Factory (TransformationFactory class). The Data Element Agent generated a set of parameters that controlled the transformation models execution. After the transformation was implemented the corresponding data element on the Geo-Scratch Pad was modified according to the transformation and parameters. The transformations implemented by the prototype architecture are provided on Table 8. The main transformations used by the architecture included the transformation for OTF line bridge (reference Figure 35), OTF point building, FLT external reference model bridge, FLT external reference model building and LTF prism building.

#### **Client Update Message Generation**

The agent test and transform iterations preceded until all the goals were achieved or no more contributions were possible. In the prototype architecture a confidence level was set on state variables and goals after every task was performed. The main idea was to be able to assess confidence on goals, tests results and transformations. This



information was only used in the prototype architecture to change the state of sub goals pre-requisites in the data panel. In the prototype architecture the states only included binary pass or fail and or success and failure.

After the Blackboard Controller detected that the goals were reached or no more contributions were possible by the agents it concluded the Geo-Scratch Pad modification were completed and returned control to the TDB Change Detector and Update Generator. At that point the TDB Change Detector and Update Generator generated sent internal server messages to all the server components for incorporation of the TDB updates into the server TDB repository and generation of the update messages for the clients.

After receiving the update messages the server TDB Repository Manager implemented the necessary TDB repository updates through corresponding TDB API servers. After submitting each server TDB update the server also submitted update messages for the client. Once completed the server and clients internal TDB repositories contained similar versions of the TDB.

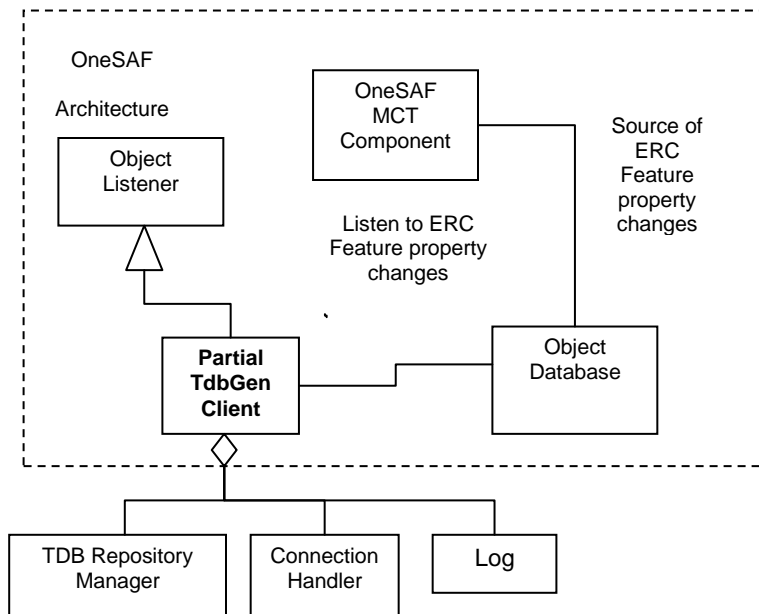


Figure 39 - UML class for the OTF Client (PartialTdbGenClient class)

### ***Prototype architecture Clients***

The clients were implemented in accordance with the theoretical Bi-directional Ontology-Driven TDB Generation Architecture concepts presented in chapter 3. The main components of each one of the embedded clients included a Logger (Log class) Connection Handler (ConnectionHandler class), and TDB Repository Manager (TdbRepositoryManager class).

## OTF CLIENT

The OneSAF embedded client (shown on Figure 39) was developed as a composition inside OneSAF. The embedded OTF client application implemented the OneSAF Object Listener class and was subscribed to OneSAF feature changes. When the feature attributes were modified in the OneSAF MCT the feature changes were distributed by the Object Database to all subscribed objects. For example, when the point bridge span GENERAL\_DAMAGE\_FRACTION attribute was modified the ERC feature changes arrived at the OneSAF embedded client then, converted into a XML messages and sent to the prototype architecture server for processing. The OTF embedded client relied on the TDB Repository Manager for the translation from a local ERC feature to the XML change message. After the change message was processed by the server an update message arrived at the client Connection Handler with the necessary updates. The log file on APPENDIX B: OTF client log - otfApiServer-aug04-5.log includes information collected on the OTF client on August 04, 2011 for a building attribute change in the OneSAF client.

The OneSAF ERC version used for the experiment did not directly support partial OTF regeneration. ERC provided support for dynamic terrain by storing the terrain modifications along with the OTF. However, the dynamic terrain modifications are not part of the OTF. The ERC approach to dynamic terrain was to first load the OTF into memory and then perform updates all the in-memory features with the dynamic terrain

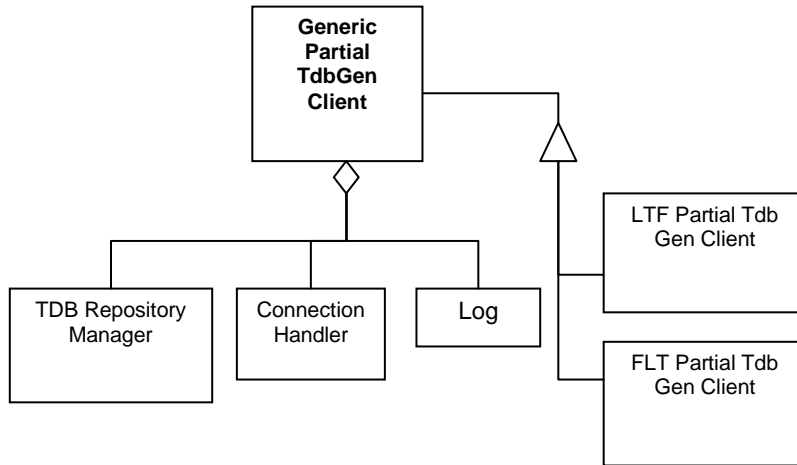
feature modifications. The intent of this work was to implement partial regeneration and generate an updated OTF on disk representation that contained the actual changes.

The mechanism for the TDB regeneration was based on a set of tools and procedures used to update OTF from one version to another. Every time a new version of the ERC is release it is necessary to re-compile all the OTF using the new ERC version. The technique used by OneSAF generated an intermediate representation which contained the features and terrain information contained in the old version of ERC. Using this feature and terrain information the new ERC was used to generate an OTF for the new ERC release. This process is manual and includes the following steps;

- 1) Setup and environment for the conversion. This included the copy of a number of configuration files.
- 2) Use the stand alone test driver (standalone\_td) tool to generate binary representations of OTF using the old ERC version.
- 3) Run a terrain compiler tool using the new ERC version to generate the new ERC OTF version.

Under this effort this process was modified and ERC support for an automated process was developed using the same principles. A binary representation (containing feature and terrain data) of the myNTC\_terrain\_database OTF was used as cached version of

the OTF. This binary representation was loaded into memory using similar techniques as those used by the terrain compiler application. At that point the OTF changes were incorporated and eventually written to disk.



**Figure 40 - UML class for the Generic Client (GenericPartialTdbGenClient class)**

### ***LTF Client***

The main components of the LTF client, shown in Figure 40, included a Logger (Log class) Connection Handler (ConnectionHandler class), and TDB Repository Manager and (TdbRepositoryManager class). The LTF client (LtfPartialTdbGenClient class) was developed with the sole purpose of subscribing to the prototype architecture server update messages and incorporating the LTF updates into the local LTF. When the update message arrived at the LTF client the XML update messages was translated by a combination of TDB Repository Manager and LTF TDB Implementation (LTFTdbImpl

class). The log file on APPENDIX B: LTF client log - ltfApiServer-Aug04-5.log includes information collected on the LTF client on August 04, 2011 for a building attribute change in the OneSAF client.

#### **FLT CLIENT**

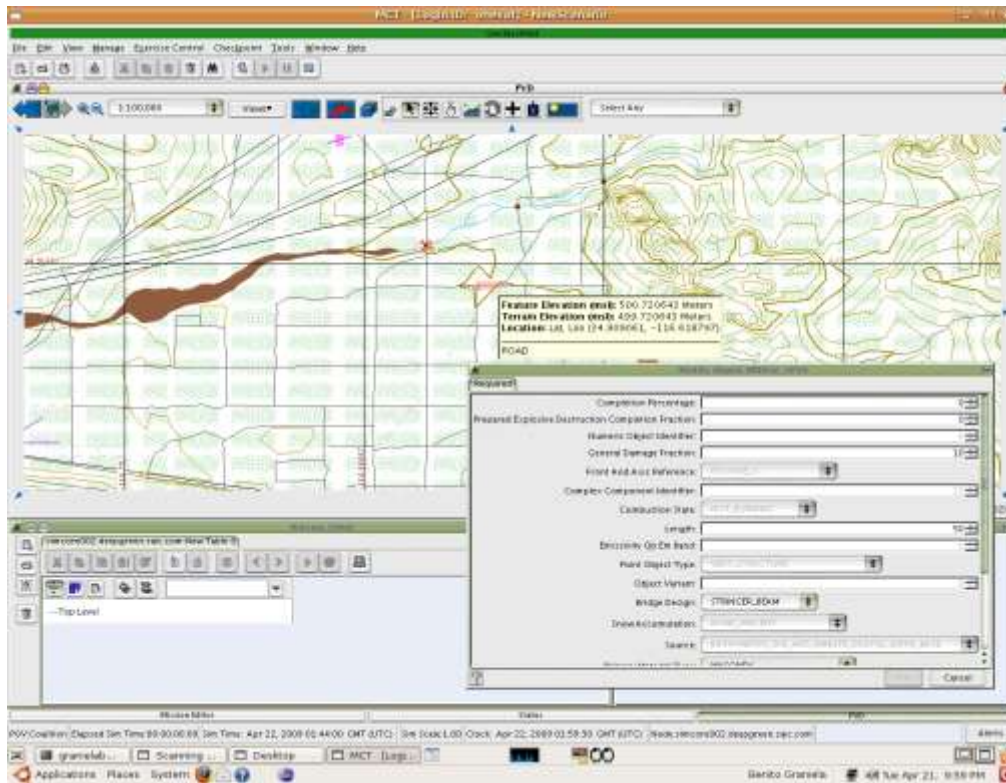
The main components of the FLT client, shown in Figure 40, included a Logger (Log class) Connection Handler (ConnectionHandler class), and TDB Repository Manager and (TdbRepositoryManager class). The FLT client (FltPartialTdbGenClient class) was developed with the sole purpose of subscribing to prototype architecture server update messages and incorporating the FLT updates into the local OpenFlight. When the update message arrived at the OpenFlight client the XML update messages was translated by a combination of TDB Repository Manager and FLT TDB Implementation (FLTtdbImpl class). The log file on APPENDIX B: FLT client log - fltApiServer-aug04-5.log includes information collected on the LTF client on August 04, 2011 for a building attribute change in the OneSAF client.

The FLT API implementation was developed using the OpenSceneGraph plug-in OpenFlight libraries. On some formats like OpenFlight the classification and attributes content are not sufficient to support adequate relationships between components in the virtual format and other formats. Therefore it was necessary to add classification and attributes that could be relate components in the virtual format. In addition, it was also

required to provide support for unique identifiers which could be assigned to these components. In OpenFlight the scene graph is composed node such as group, level of detail, external reference, switch and object nodes. The generation of unique ids for external reference nodes included the TDB file name and external reference model file name. The unique ids were stored on the ontology and allowed for mapping between the scene graph components and the ontology individuals. This mapping of scene graph components to ontology individuals was used to obtain extents, related features, integrity and correlation tests, and transformation information for FLT external reference models.

### ***Screen Shots of Transformations***

Screenshots for before and after TDB modifications are provided to illustrate the modifications and highlight the distributed TDB consistency results. As mentioned previously, in the case study TDB updates were generated at the server (IvcServer) machine for clients on the IvcConstructive, IvcLive, and IvcVirtual machines. After the changes were incorporated in the server and clients, the content of the corresponding IvcServer TDB repository (LTF, OTF and FLT) were synchronized with the corresponding IvcConstructive client OTF, IvcLive client LTF and IvcVirtual client FLT.



**Figure 41 - OneSAF bridge feature changes**

The OneSAF MCT (shown in Figure 41) was used to introduce the feature changes in the IvcConstructive machine. The window on the lower right corner of Figure 41 is called the Modify Object Window and it was used for the inspection and modification of feature attributes. After pressing the “OK” button on the Modify Object Window the feature attribute changes on the IvcConstructive machine were translated into a change message and sent to the prototype architecture server for processing. This started processing of the changes and eventual update delivery to the clients.





(a)

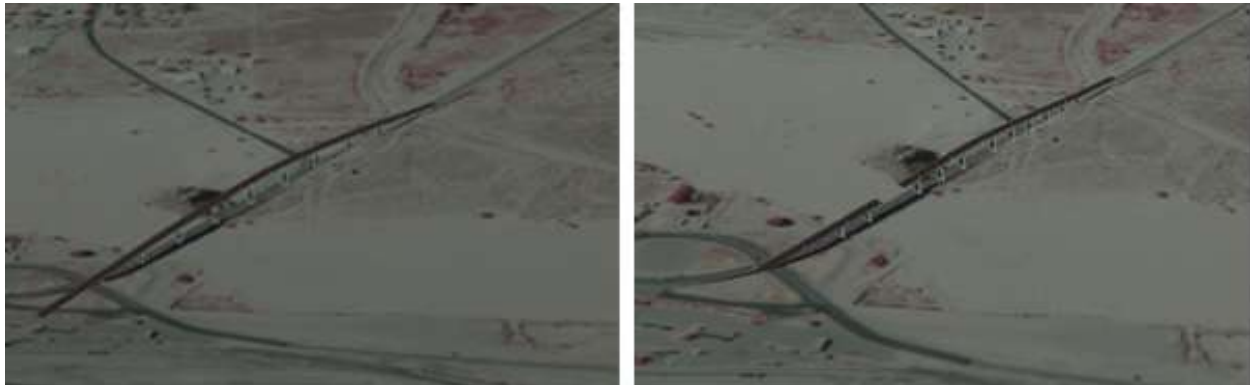
(b)

**Figure 42 - OTF before (a) and after (b) bridge attribute change**

#### **BRIDGE MODIFICATIONS**

The OTF bridge span attribute changes on the IvcConstructive client resulted in modifications to the server OTF and OpenFlight (FLT) as well as updates to the OTF in the IvcConstructive machine and updates to the FTL in the IvcVirtual machine.

Examination of the updates in the OTF was done by loading the updated myNTC\_terrain\_database in the OneSAF MCT application verifying the bridge attribute changes. Figure 42 shows the before (a) and after (b) bridge changes in the OTF myNTC\_terrain\_database.



(a)

(b)

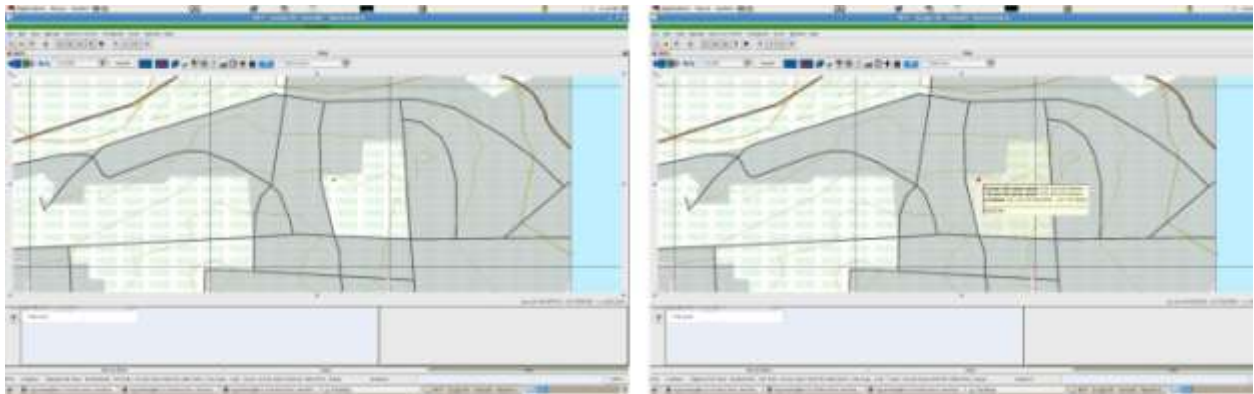
**Figure 43 - OpenFlight before (a) and after (b) bridge change**

Figure 43 shows the before (a) and after (b) bridge representation in the myNtc.flt OpenFlight. Figure 43 (a) shows the initial unmodified representation of the bridge rendered by the OpenSceneGraph osgviewer application. The osgviewer is an OpenSceneGraph application that allows visualization of a variety of different TDB. As a result of the prototype architecture server processing the bridge model contained within the myFlt.flt FLT was changed to the model of damaged bridge shown in Figure 43 (b). After the incorporation of the updates by the lvcServer and lvcVirtual machines the two TDB repositories contained a consistent representation of the FLT (shown in Figure 43 (b)).

#### **BUILDING MODIFICATIONS**

The second test case of the case study experiment included modifications to a building feature. In this test case changes in the OneSAF client machine generated building

attributes changes that were send to the prototype architecture server (lvcServer) for processing. The lvcServer processed the OTF changes to the building, incorporated the changes into its local TDB repository and provided updates for the lvcConstructive, lvcLive and lvcVirtual clients.

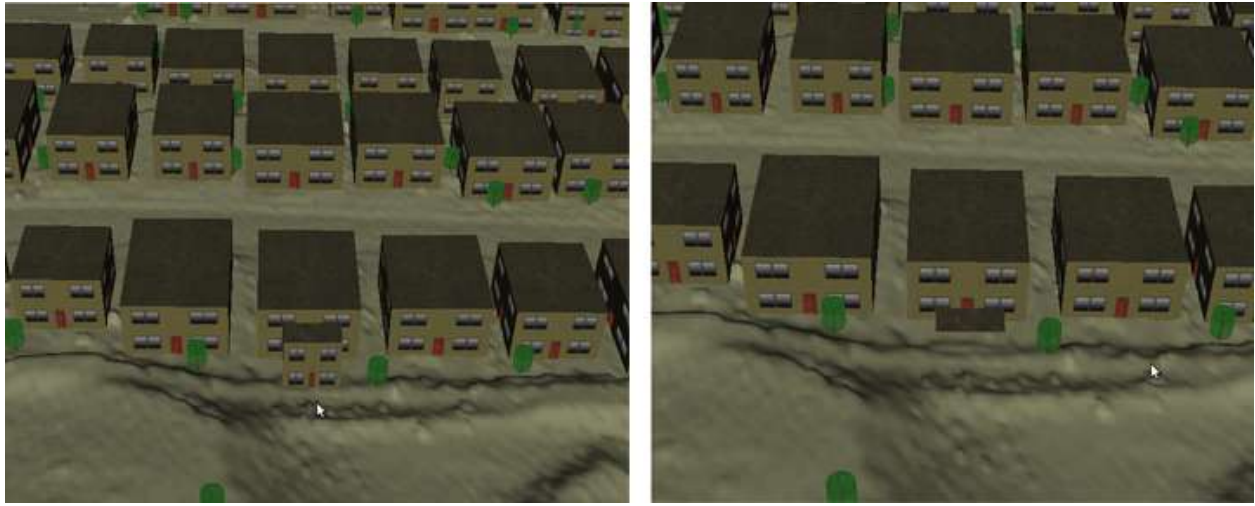


(a)

(b)

**Figure 44 - OneSAF building feature changes**

Figure 44 shows screenshots of the OneSAF MCT application before (a) the building attribute changes and after (b) the building attribute change. OneSAF provides a red dashed circle around modified features (reference Figure 44 (b)) to indicate that a feature has been modified. Once the server OTF updates were incorporated into the lvcConstructive client the myNTC\_terrain\_database was consistent with the server myNTC\_terrain\_database.



(a)

(b)

**Figure 45 - LTF c7\_textured before and after building changes**

Figure 45 shows the before (a) and after (b) building representation of the c7\_textured LTF as rendered by the QtLtfVisualizer. The QtLtfVisualizer is a LTF API v1.0 application based on OpenSceneGraph that allows visualization of the LTF content. As part of the server processing of the OneSAF client building attribute changes the LTF building prism height was modified to represent a damaged building. After the incorporation of the updates by the lvcServer and lvcLive machines the local TDB repositories on each machine contained consistent representations of the destroyed LTF building (shown in Figure 45 (b)).



(a)

(b)

**Figure 46 – OpenFlight myNtc.flt before and after building changes**

Figure 46 shows the before and after building representation in the FLT named myFtl.flt. After the server completed processing the OneSAF client building attribute change, the building model reference contained within the myFtl.flt was changed to that of a damaged building. After the incorporation of the updates to the FLT in the lvcServer and lvcVirtual machines the TDB repositories contained a consistent representation of the destroyed building (shown in Figure 46 (b)).

## CHAPTER 6: DATA AND ANALYSIS

As described in the previous chapter an instance of the theoretical Bi-directional Ontology-driven Terrain Database (TDB) Generation Architecture (i.e. prototype architecture) was developed and an experiment conducted. Sample data was collected as part of the experiment to test the hypothesis on network utilization and processing time presented in CHAPTER 4:. This chapter presents the experiment data, analysis and how it supports the hypothesis on network utilization and processing time presented in CHAPTER 4:.

### **Network Utilization Data**

This section contains the summary network utilization data collected using the prototype architecture. More details on the data are provided in APPENDIX B:.

**Table 9 - Server network utilization data**

		Server					Server		
		transmit		msg			transmit		msg
		time (sec)	Mbps	bytes			time (sec)	Mbps	bytes
BUILDING		0.079	0.319	3307	BRIDGE		0.083	0.149	1620
		0.073	0.210	2013			0.072	0.172	1620
		0.095	0.162	2013			0.070	0.176	1620
	average	0.082	0.230	2444		average	0.075	0.166	1620
	standard					standard			
	deviation	0.011	0.080	747		deviation	0.007	0.015	0

Table 9 provides the server network utilization data collected on the prototype architecture. The server network utilization includes messages size (msg bytes), transmission times (transmit time) and computed network throughput (Mbps) for building and bridge features. The amount of data (change message size) needed to convey the TDB client change is a factor of data element parameter such as feature type, the type of change, and the amount of changes on the features. The transmit time is the time it took the message to arrive at the server.

On the average the building change message took 0.082 seconds to arrive at the server and the average building change message size was 2444 bytes. The bridge changes message also on average took 0.075 seconds to arrive at the server and the average bridge change message was 1620 bytes. The differences in message size can be primarily attributed to the number of attributes included in the message. The OneSAF embedded client was subscribed to changes on the Environment Runtime Component (ERC). For some unknown reason the OneSAF ERC provided attributes that were not changed as part of the experiment. This behavior was investigated and the client was modified in an effort to control the number of extra attributes. However it was not possible to completely eliminate the extra attribute parameters. More details on message format, data and size are provided in APPENDIX C:.

Table 10 - Client network utilization data

		FLT			LTF			OTF		
		transmit		msg	transmit		msg	transmit		msg
		time			time			time (sec)	Mbps	bytes
		(sec)	Mbps	bytes	(sec)	Mbps	bytes	time (sec)	Mbps	bytes
<b>BUILDING</b>		0.069	0.069	1811	0.188	0.115	2824	1.262	0.047	7725
		0.055	0.256	1847	0.138	0.156	2824	2.335	0.025	7725
		0.054	0.260	1847	0.399	0.053	2824	0.767	0.077	7725
	average	0.059	0.195	1835	0.242	0.108	2824	1.455	0.050	7725
	standard deviation	0.008	0.109	21	0.139	0.052		0.802	0.026	0

		FLT			LTF			OTF		
		transmit		msg	transmit		msg	transmit		msg
		time			time			time (sec)	Mbps	bytes
		(sec)	Mbps	bytes	(sec)	Mbps	bytes	time (sec)	Mbps	bytes
<b>BRIDGE</b>		0.171	0.076	1709				1.272	0.027	4469
		0.121	0.108	1709				1.608	0.021	4469
		0.173	0.075	1709				1.603	0.021	4469
	average	0.155	0.086	1709				1.494	0.023	4469
	standard deviation	0.029	0.019	0				0.193	0.003	0



Table 10 provides the prototype architecture data collected on client network utilization. This data includes transmit time, message size (msg size) and network throughput (Mbps). Data for processing of building and bridge feature changes are included in this table for all three clients. Note that the data for Live Terrain Format (LTF) bridge is not included as there was no bridge feature implementation in the LTF format. This situation is actually a realistic situation and it highlights the flexibility of the approach to include only the needed data element dependencies. Some formats do not provide a representation for all possible environment features. The number and type of features included in the TDB representation is determined by the models required by the application. Even if it was possible to represent all the features on the environment, constrains such as performance and storage may limit the modeling of these features on any one TDB. The modeling of data element components such as geometry and attributes is captured by the ontology descriptions explained in CHAPTER 5:. To account for attribute mappings it is necessary to provide correlation mappings of attributes across multiple coding catalogs. In the prototype architecture the lack of data element or attribute correlation information was interpreted as non critical data elements or attributes. Only those data elements and attributes which are critical for correlation were included in the ontology.

**Table 11 - Average legacy TDB Generation network utilization data**

	<b>FLT</b>	<b>OTF</b>	<b>LTF</b>
<b>Total Transfer Size (bytes)</b>	25600236490	25196734	20192514288
<b>Average Transfer time (sec)</b>	2336.463	2.301	2040.337
<b>Average Network Throughput (Mbps)</b>	81.361	83.594	75.505

The average legacy network utilization to all the TDB used in the experiment are provided on Table 11. More details on how the network utilization data was obtained can be found in APPENDIX A:. The average transfer times for OpenFlight (FLT), OTF and LTF were calculated to be 2336.463, 2.301 and 2040.337 seconds for one geo-cell of data. Since not all of the TDB were one geo-cell in size it was necessary to extrapolate the size and transfer time. For more details on how this data was obtained is referenced in APPENDIX A:. Basically the transfer times were calculated for the TDB and the transfer times normalized to one degree by one degree geo-cells. Based on the information on Table 11 the minimum network utilization was achieved by the transmission of the OTF and it is 2.301 seconds.

**Table 12 - Server-Client average network utilization data**

<b>Building</b>			<b>Bridge</b>		
<b>Average total throughput Mbps</b>	<b>Average total transmit time</b>		<b>Average total throughput Mbps</b>	<b>Average total transmit time</b>	
	<b>sec</b>	<b>min</b>		<b>sec</b>	<b>min</b>
0.583	1.838	0.031	0.275	1.724	0.029

The measured network utilization for the prototype architecture is the total sum of the network transfer times for all the clients. The total average includes the time the network was utilized to transmit the TDB change message plus the times the network was utilized to provide updates to all the clients. Table 12 shows the average total network utilization for the building and bridge data elements. For the change in the OTF building attribute the average total network utilization was 1.838 seconds and 1.724 seconds for the OTF bridge feature. Correlation between the OTF, LTF and FLT in the server TDB repository was verified by visual and attribute inspection to ensure that the changes were consistent between the TDBs. Correlation between the server and the corresponding clients was verified through the experiment log that indicated that the update message arrived and was processed. Comparison between the corresponding server TDB and client included file size and content checks to ensure that the TDB in the server and client were the same.

As presented in chapter 4 the null hypothesis on network utilization reduction can be rejected if the measured network utilization is smaller than the minimum of the legacy network utilizations. At 1.838 seconds the average network utilization of the prototype architecture was significantly lower than the legacy TDB generation network utilization of 2.301 seconds. A t-test hypothesis test of equality was conducted on the sample and resulted in rejection of equality ( $p$ -value=0.003). The small sample size results in a statistical power of 0.84 (Type II error;  $\beta = 0.16$ ;  $p=0.003$ ) using an alternative legacy processing time of 1.886 seconds (i.e. 18% reduction in processing time). In other words there is 16% probability of erroneously concluding a reduction in processing time. Since the statistical power is greater than 0.80 it is reasonable to conclude that the prototype architecture network utilization is smaller than the legacy network utilization. T-test calculations are provided in APPENDIX B:.

### Processing Time

Partial regeneration of TDB is supported by the prototype architecture through the use of agents and ontological descriptions which allow the system to determine what components need to be re-generated.

**Table 13 - TDB change message processing times**

	SERVER		FLT	LTF	OTF
	processing time		processing time	processing time	processing time
	Sec	min	sec	sec	sec
<b>BUILDING</b>	501.519	8.359	24.915	2.733	74.312
	391.953	6.533	22.415	2.739	80.295
	401.289	6.688	21.173	2.703	85.990
average	431.587	7.193	22.834	2.725	80.199
standard deviation	60.7425	1.012	1.906	0.019	5.840

	SERVER		FLT	LTF	OTF
	processing time		processing time	processing time	processing time
	sec	min	sec	sec	sec
<b>BRIDGE</b>	380.491	6.342	21.627		71.291
	350.29	5.838	20.391		75.193
	443.641	7.394	19.557		73.209
average	391.474	6.525	20.525		73.231
standard deviation	47.6348	0.794	1.041		1.951

Table 13 provides the processing times used by the prototype architecture to process feature changes and updates to the client. Data for the processing of building and bridge features are included in this table for server and all three clients. Note that the data for LTF bridge is not included as there was no implementation of bridge in the format.

For details on the experiment logs please reference APPENDIX B:. Table 13 shows the server average processing time for the OTF building attributes changes as 431.587 seconds with a standard deviation of 60.742 seconds. The average updates of the FLT, LTF and OTF clients were processed in 22.834, 2.725, and 80.199 seconds respectively. Table 13 also shows that the average processing time for the OTF bridge attributes changes as 391.474 seconds with a standard deviation of 47.6348 seconds. Average updates of the FLT and OTF clients were processed in 20.525 and 73.231 seconds respectively.

The processing of the client updates happened in parallel with the server updates so that the real processing time for all of the OTF building changes and updates could be accounted for in the 431.587 seconds or 7.193 minutes. For the same reason the OTF bridge change and update processing were accounted for in the 391.474 seconds or 6.525 minutes.

As presented in chapter 4 the null hypothesis on processing time can be rejected if the measured processing time was smaller than the documented legacy processing times requirements of 72 hours. At 7.193 minutes the average processing time of the prototype architecture is significantly lower than the legacy TDB generation processing time of 72 hours. Therefore the null hypothesis on processing time can be rejected and concluded that the prototype architecture is able to process TDB changes on bridge and building attribute features faster than the legacy TDB generation pipeline. Correlation between the OTF, LTF and FLT in the server TDB repository was verified by visual and attribute inspection to ensure that the changes were consistent between the TDBs. Correlation between the server and the corresponding clients included file size and content checks to ensure that the TDB in the server and the client were the same.

This nearly THREE magnitude REDUCTION (from 72 hours (4320 minutes) to 7.193 minutes) in TDB processing time to generate a new TDB is the primary advantage of the proposed architecture.

### **Data Collection Limitations**

Most of the limitations to the data collected are related to level of effort. Limited number of data element types and attribute changes were provided. The following paragraphs expand on these limitations.

No more than two types of TDB data elements were tested in this experiment.

Collecting data for a large variety of TDB data elements was beyond the scope of this work. The development of the prototype architecture investigated the implementation of components, knowledge base and agent process which could demonstrate the typical processing of this data. Although it is expected that changes to other TDB data element types may account for equivalent changes and updates that was not investigated.

Future research should explore the use of a wider variety of data elements.

The changes introduced by the OTF client only included attribute modification. Support for geometry modification was beyond the scope of this work. However, modification to feature geometry would have had an impact on the change and update messages size as well as processing times. Future research should explore geometry modifications.

The problem space of geometry and attribute changes only included attribute-to-attribute and attribute-to-geometry processing. Other aspects like geometry-to-attribute and geometry-to-geometry mapping and processing were beyond the scope of this research. The current prototype architecture explored limited mappings in this area.

Future research should explore the representation of this relationship on the ontology and provide support for the discovery of these dependencies.

### **Data and Analysis Summary**

The data obtained in the experiment supports the rejection of the two null hypotheses presented in chapter 4 and presents evidence that the prototype architecture provides reduced network utilization and nearly a THREE magnitude REDUCTION in processing



times while maintaining correlation between distributed TDB. Although the prototype architecture contained a number of limitations the results indicated that the proposed architectural model above may be generalized through: (1) its structural UML representations for component layout, agent and agent processing, and data flows, and (2) database and database translations described in generalizable OWL format. With this Bi-directional Ontology-driven TDB Generation Architecture a paradigm shift is possible taking Terrain Generation for simulation from the traditional one directional pipeline in use today to a distributed bi-directional TDB partial generation paradigm that can accommodate simulation terrain generation needs of the future.

## **CHAPTER 7: SUMMARY, CONCLUSIONS, LIMITATIONS, LESSONS LEARNED AND FUTURE RESEARCH**

Terrain Database Generation for military modeling and simulation is part of the field of Geographic Information Systems yet in many ways is far more complex than traditional civilian applications. For example, Ding indicates correlation requirements among traditional heterogeneous military M&S TDB representations contrast sharply with the networked but homogenous geographic representation used by commercial companies such as Google Earth (Ding 2007). Further, military M&S target formats representations for a given TDB also often contrast sharply with the shared “other-world” environment representations used by games like World of Warcraft (McGregor 2006).

The traditional modeling and simulation TDB generation process has evolved over time from an ad hoc process that updated individual proprietary systems to the current paradigm. In this TDB generation process the use of GIS applications and tools is limited to pre-processing of the geospatial source data (Schiavone 1997, Polis et al. 1995, Trott 1996). A set of TDB generation model processes perform complex model transformations on the geospatial source data to generate a number heterogeneous but correlated representations. TDB generation is a time consuming, iterative and therefore expensive process (Schiavone 1997, Bitters 2004, Polis et al. 1995, Trott 1996). The

current paradigm consists of one-directional update of a set of correlated TDB environmental data model types for a given area of the world. TDB Environmental data model (EDM) types for modeling and simulation are described by Miller (Miller 2004), Dobby (Dobby 2003) and Songer (Songer et al. 2000) and consist of heterogeneous format types applicable to the live, virtual and constructive application contexts. Actual executable target format types and the nature of object descriptions contained in the type format are often determined by government sponsors or major corporations. Examples include the OpenFlight (i.e. FLT) format type for virtual simulation, the LTF format type for live simulation, and the OTF format type for constructive simulation.

Original generation and update of a given TDB EDM of the world may require update of one or more formats types within these three application contexts. To maintain correlation between these heterogeneous format types, update processes may be performed in parallel with each other as each format type has uniquely different representations for the same objects in the environment. Differences between the TDB EDM types are found in the features and characteristics needed by the M&S simulations that use those formats.

The objective of this dissertation was to create a generalized architecture that harmonizes change in these three heterogeneous TDB EDM format types through an approach that utilized partial re-generation and that enabled bi-directional change in

each format simultaneously while achieving orders of magnitude reduction in processing time over the current TDB generation paradigm.

The motivation for the paradigm shift implicit to the proposed architecture rests in projected change in the nature of future models and simulations. Individual models and simulations in future systems like the Future Combat System will be increasingly autonomous as technology advances increasingly empower individual end-users. Future systems are expected to demand frequent updates, while having limited bandwidth and limited processing capabilities (Shufelt 2006, Cox 2009). Constraining the autonomy of individual systems is the need by organizations to have each team member have his/her unique M&S viewpoint of the shared SNE work environment while at the same time having those unique viewpoint be consistently correlated with one another.

Solutions to TDB correlation has been sought over the years and the two more recent approaches, SE-CORE and CDB, address some of the issues that have prevented distributed correlation in the past. For example, techniques such as the preservation of value added source data, generation of correlated databases from a common repository, and consideration of all the trade-offs between target formats at one point in time (Shufelt 2006) (Simons R. 2004) (CAE USA Inc. 2007). However, all of these systems and processes implement the same theoretical TDB generation pipeline

(presented in Chapter 1) which relies on external source data transformation and provides no links to the target formats (Schiavone 1997, Bitters 2004, Polis et al. 1995, Trott 1996). The current TDB generation pipeline solution for the frequent TDB updates is to re-generate the complete TDB more often and on demand (Shufelt 2006) (Simons 2004). As presented in Chapter 1, this approach requires regeneration of large portions of the TDB, which is process intensive and slow. As presented in chapter 1, TDB generation is a time consuming, iterative and therefore expensive process (Schiavone 1997, Bitters 2004, Polis et al. 1995, Trott 1996). . As mentioned in chapter 1 lack of bandwidth is one of the current operational shortcomings of network-centric operations (Luddy 2005) and therefore makes the transmission of complete TDB representation impractical. Limited resources on embedded training system as well as in many other systems of systems may prevent TDB generation processing on-board (Shufelt 2006, Cox 2009). But even if the processing power was available and the network bandwidth was not a problem all the affected representations need to be considered and if necessary updated to maintain correlation. The main problem is that in isolation client applications may not be aware of all the representations on the network or understand how to interoperate with these applications. As mentioned above the most recent approaches to TDB generation like SE-CORE and CDB generate target formats from a common TDB. Therefore, it is necessary to provide a central point that receives change information, is able to map changes between TDB representations, performs the necessary set of fidelity and performance tradeoff to enable correlation between all the

representations, and re-distribute the change to the participating models and simulations (Shufelt 2006, Simons R. 2004, Miller 2004, Dobey 2003, Songer et al. 2000).

By using automatic TDB generation considerable improvements in fidelity can be achieved as well as saving in development time (Polis et al. 1995). Current TDB Generation systems rely on experts to translate the desired target format changes into source data and TDB Generation processing models modifications. Capturing this expert knowledge into a knowledge base and providing automatic process for processing target changes may result in significant processing, time and cost savings.

### ***Bi-directional partial Terrain Database Re-Generation Architecture***

To address the limitation of the traditional TDB pipelines for network centric modeling and simulation, a new approach was investigated. A new solution to distributed, heterogeneous TDB update problem was proposed in chapter 3 that included bi-directional information flow and partial terrain database generation among the distributed and non-homogeneous terrain databases types. The theoretical Bi-directional partial TDB Re-Generation Architecture (i.e. theoretical architecture) that makes the approach possible relies on smart processes and a knowledge base that captures the structure, correlation and transformations necessary to restore harmony to distributed simulation terrain databases after disharmony was created by a local change

that has occurred in a member of the distributed simulation. In a distributed simulation the terrain database is spatially but abstractly shared by individual models and simulations within a distributed overall system as each has its own local version of the terrain database. Local formats of the terrain database may be identical with other members of the distributed simulation or may vary not. Distributed simulation members that have dissimilar formats require translation of the change from the originating format into a format that can be locally processed. In the proposed approach, agents on a system server process TDB changes locally generated and communicated by clients on each simulation to the system server. Using target format oriented ontologies, the agents concurrently and in a correlated process translates the client local TDB change into a TDB update for each of the other clients in the network and provides the TDB updates to all the affected simulations clients. This approach restores consistency between distributed heterogeneous TDB representations making possible harmonious distributed simulation activities.

### ***Experiment, Architecture Realization and results***

In the proposed experiment changes on the OTF client features were processed by a prototype architecture implementation and distributed to the OTF, LTF and OpenFlight clients for update. Measurements on network utilization, processing performance and consistency were made and tested against a number of hypotheses.

## **TDB APIs**

Terrain database target formats were isolated in the theoretical architecture through the use of a standard TDB APIs interface. The TDB APIs interfaces isolated functionality such as read, write and processing of change and update messages.

## **ONTOLOGIES AS OWL CLASS AND INDIVIDUALS**

The live, virtual and constructive knowledge on TDB structure, correlation and transformation was distributed among a number of classes, relationships, and individuals defined using OWL statements. The structure ontology was primarily used to capture the data model for OTF, LTF and FLT. For the case study this included point, line and area data elements for OTF, prisms and cylinders for LTF and external reference models for the FLT. The OTF, LTF and FLT data model provided specific guidance for the modeling of the data element dependencies. The correlation information was primarily dependent on the classification codes mappings stored in the ontology data coding catalog. Therefore, it was important that the lower level TDB API could identify and provide classification codes for the data elements as that were generated from the TDB features. In formats like OpenFlight it was necessary to add this feature classification functionality to the lower level FLT API read/write for support the mappings of ontological classes.



The ontology information on dependencies and correlation was used to enable partial regeneration. The data element dependencies provided guidance for the agents on the potential affected data elements. Harmony in internal and external representation was determined by a set of integrity and correlation tests. Integrity test were implemented to test the components and relationships between the internal TDB and ensure consistency with the TDB data model. Correlation tests were implemented to test the similarity between data element in different TDB data models.

Re-generation of inconsistent data element was supported by the ontology transformation models. The ontology transformation models included the provision for a number of transformation functions as well as parameters.

#### **TEST AND TRANSFORMATIONS FACTORIES**

The implementation and execution of tests and transformation was implemented through a set of factories. This design pattern provided tests and transformation objects for the agents without exposing details on their source. This abstraction allows for the factory to connect to repositories of tests and transformations on the server. In this architecture no interpretation of the results is provided by the test code, this is a responsibility of the agents. However, the provisions for providing test parameters and test limits criteria allowed for the test object to provide a pass fail answer for the agents.

## **AGENTS**

As presented in chapter 3 the original idea behind the theoretical architecture was to provide a swarm of hierarchical agents that could integrate client target changes into a common repository of TDB and at the same time bring back harmony among a number of distributed TDB representations. The implemented agent backboard architecture allowed agents to communicate through data and task panels and through a common set of TDB goals integrate client TDB changes and generate updates for the clients. The agents criteria for the integration and correlation to the TDB was data driven by knowledge base stored in a repository of Ontology Web Language (OWL) classes, properties and individuals. Sensing of the agents was through a number of integrity and correlation test. Transformation actions were used to modify those data element representations that were inconsistent or un-correlated.

## **CASE STUDY EXPERIMENT RESULTS**

The experiment included LTF, OpenFlight (FLT) and OTF client applications distributed on a 100 Mbps network. In the experiment changes to an OTF bridge span and building were generated in the OTF client, integrated into the server TDB repository and distributed to the OTF, LTF and FLT clients. After the incorporation of the updates into the sever and client OTF, LTF and FLT, the server TDB repository was consistent with the representation on the corresponding client OTF, LTF and FLT. Based on the sampled evidence it was extremely reasonable ( $p\text{-value}=0.003$ ) to assume that the null

hypothesis on network utilization reduction could be rejected. Sufficient evidence existed to conclude that the prototype architecture network utilization time was smaller than the legacy network utilization. Most importantly, the null hypothesis on processing time was also rejected as the processing time in minutes measured on the prototype architecture was significantly lower than the legacy TDB generation processing time of 72 hours. Correlation between the OTF, LTF and FLT in the server TDB repository as well as between the server and clients was verified by visual, attribute inspection, log files, and comparisons.

### **Conclusions**

The findings suggest that in general distributed bi-directional, partial TDB re-generation provided by the Bi-Directional Ontology-driven TDB Re-Generation Architecture will result in smaller network utilization and processing times that conventional pipeline TDB generation process while maintaining correlated TDB representations over time. The result of this work and the proposed Bi-Directional Ontology-driven TDB Re-Generation Architecture has the potential to change the traditional TDB generation pipeline and provide a new way to generate correlated TDB by enabling temporal correlation. Bi-directional changes allow for changes anywhere in the system and enable feedback of changes generated as the results of real world changes or enhancements to the environment needed to increase correlation or fidelity. This architecture enables consistency over time between the terrain databases and therefore enables

interoperability between simulators and system of systems in network centric environments.

This dissertation proposes a paradigm shift from the traditional set of TDB generation pipeline stove pipe processes to a paradigm that provides a more flexible TDB generation process that addresses bi-directionality of change using multiple formats and applications while achieving a nearly three magnitude reduction in terrain database processing time.

The research findings can be summarized into five areas;

1. Partial Re-Generation
2. Bi-Directional Processing
3. Distributed Correlation
4. Knowledge Representation
5. New TDB Gen paradigm for distributed environments

### ***Partial Regeneration***

Partial Re-Generation allowed the Bi-directional Ontology-driven TDB Re-Generation Architecture (i.e. theoretical architecture) to demonstrate improved processing times in the case study experiment. Partial Re-Generation in the prototype architecture was enabled by the efficient processing of agents and knowledge base. Bi-Directional

Processing allowed the case study prototype architecture to demonstrated reduced network utilization. The Bi-Directional Processing of client-to-server changes and server-to-client updates allows the theoretical architecture to support changes that happen at the target formats. Distributed Correlation was enabled by the architecture server processing and Geo-Scratch pad, agents and knowledge base and the TDB APIs. The case study knowledge representation expressed in OWL was achieved by capturing the TDB structure, correlation and transformation needed by the prototype architecture. And finally the above concepts and techniques were incorporated into a theoretical architecture that demonstrated superior performance as it relates to network utilization and processing times over the traditional TDB Generation pipeline.

Experiments with the prototype architecture demonstrated that a knowledge base could be build were ontological descriptions of building and bridge data elements could support processing of partial TDB changes in a given client that were subsequently translated in attribute changes for live, virtual and constructive target formats. Furthermore, it is expected that ontological classes and relationships can be generalized to support reduced processing times for other data element types as well as for changes in geometry.

Instead of performing manual interpretation and translation of the TDB changes happening on the target format, the Bi-directional Ontology-driven TDB Generation

Architecture uses a knowledge base to understand the impact of client target changes and automatically regenerate the necessary data elements to correct any TDB inconsistencies. In essence, a link is provided between the client target formats and the server TDB generation system that allows distributed TDB to be synchronized over time. This functionality is enabled by a persistent set of ontological descriptions that captures knowledge related to target formats structure, data element classification, attributes, tests, transformations and interdependencies. This data driven capability of this network centric TDB generation architecture has the potential to reduce the save time and costs associated with the manual translation and incorporation of TDB changes.

### ***Bi-Directional Processing***

The concept of bi-directional TDB re-generation is supported by the theoretical architecture through the use of a distributed processing which allows not only for changes to occur on the TDB generation machine (i.e. the server) but also on target formats (i.e. the clients). The research, case study and data shows that one way to support this functionality is to use a client-server architecture in which the clients have the capability to update the target formats using centrally processed TDB update information. In this network centric TDB generation architecture central processing by the server ensures that all the relevant TDB data element mappings and trade offs are considered at one point in time. Write only processing on the clients ensures that no

other information is added by the client that was not considered by the server and therefore could affect TDB correlation.

The prototype architecture demonstrated that reductions in network utilization were possible using this architecture for changes in building and bridge data elements attributes contained within OTF, FLT and LTF target formats. It is expected that similar reductions in network utilization could be possible for other data element types and target formats. In addition it would be also expected that similar reductions in network utilization will be possible for other components of the TDB like data element geometry and terrain surface. The reduced network bandwidth utilization of this network centric TDB generation paradigm enables the efficient update of synthetic environments on distributed systems of systems. The central processing of changes enables a server common TDB to ensure that all trade-off are considered at the same time.

By adding a feedback loop of target format changes the Bi-directional Ontology-driven TDB Generation Architecture provides a mechanism for the automatic incorporation of TDB changes. These TDB changes may be related to life cycle events such as new data, higher resolution, changes in requirements, runtime anomalies enhanced processing or rendering capabilities and the need for enhanced visual cues. For embedded training system, systems of systems or platforms that rely on accurate on-board synthetic environments representations the need for frequent integration of

updates in a timely matter is critical. In a network centric environment situation awareness is enhanced by updated from sensors, platforms and observations throughout the environment. The transmission of changes from any one field sensor or system to a central processing center or a distributed command and control server may provide updates to all the subscribed systems. This client-to-server and server-to-client communication of environment changes and updates allows for synchronization of environments between all systems of system, platforms, and command and control centers and promotes temporal correlation between all of the synthetic environments.

### ***Distributed Temporal Correlation***

The ontological TDB data model descriptions of the internal interdependencies between data elements in any one target format and between heterogeneous representations are consider as the changes are incorporated in the server. The prototype architecture demonstrated that it was possible to capture the relationships between the point bridge spans and line bridge to provide interdependencies within the TDB. These internal relationships were captured as Ontology Web Language (OWL) axioms that include topological relationships such as contain in, inside, on top, and under. In addition, to preserving TDB integrity, relationships of equivalent representations on the other TDB were considered as part of the server processing. This correlation data was captured as OWL axioms which linked data elements between live, virtual and constructive formats and allowed the Data Element Agents to identify and test data element correlation



between OpenFlight (FLT), OneSAF Terrain Format (OTF) and Live Terrain Format (LTF). The OWL individual data element properties also allowed the Data Element Agents to perform some limited set of correlation tests between FTL, LTF and OTF representation in the Geo Scratch Pad. In the prototype architecture the indirect correlation data relationships between the OTF point bridge span and the FLT external reference model supported the correlation testing between these data elements. Using the same principles ontologies may be developed to capture the developer, expert user, target format structure and TDB generation knowledge needed for a larger number of data elements and target formats. In the future such knowledge base may enable distributed agents to perform TDB generation tasks that are currently performed by humans.

Traditional TDB generation does not normally include integrity or correlation testing as part of the processing time. These tests are normally done after the TDB generation and provide information for the manual adjustment of TDB generation models and source data processing. Every time the TDBs are generated these tests may need to be performed to ensure that no anomalies are introduced as a result of the updates. This iterative process normally takes a long time to execute, and it's prone to error.

When these tests are performed on a large dataset, they may be time-consuming, as they have to consider a large number of data elements. However, if these tests are only

performed on the affected data elements, faster processing times will be achieved due to the reduced number of tests. The data obtained by the prototype architecture shows that significant savings in processing were obtained for the identification, testing and regeneration of client changes. This automatic and efficient TDB change processing enables the possibility of frequent TDB changes to improve the quality and correlation of distributed databases while performing needed integrity and correlation tests at the same time.

#### **AGENTS GOALS**

Data element agents in the theoretical architecture were assigned to control a part of the environment called the data element. The perception of changes on the TDB data element of the perception of inconsistencies with the TDB data model, as described by the ontology, provided the agent and indication of compliance or inconsistencies in the data model. Goals for the collection of data elements drove not only the resolution of internal integrity but consistency across data element of different types. The agent actions and reactions were guided by the knowledge on the TDB structure and correlation stored in OWL. Within this context the update of the knowledge base implies that the agents could achieve some sort of primitive learning. The prototype architecture knowledge base was implemented with static test limits. An evolving knowledge base that describes what the agent knows about how similar two representations and how it

has changed over time could be used to provide a better understanding of TDB correlation that can improve over time.

### ***Knowledge Representation***

The use of ontologies in the theoretical architecture expands the traditional view of metadata and environmental data models to include the TDB data model components and the relationships between these components which enable partial TDB regeneration. This expanded version of the data-about-data concept is provided through the ontological axioms that include classes, object properties, statements and other relationships that have the potential to derive or infer information on knowledge which are not originally provided. Ontologies as metadata have the potential to solve some the TDB heterogeneity mapping problems by inferring new relationships not explicitly included in the original ontological models. This approach has the potential to simplify the description of knowledge for TDB structure, correlation and TDB transformation process.

The ontological descriptions of critical TDB data model, correlation and TDB Generation knowledge also allow visibility into the TDB conceptual and logical models. This information may also help document and keep up to date the TDB data element data element, relationships, integrity and correlation, as well as the regeneration models used by the TDB Generation system. Information which today may be proprietary

embedded into text documents or other non-machine interpreted information may be available for use by distributed agents. Just like the web is giving away HTML to a semantic web, metadata can be augmented so that computing systems can use not only the data model of the TDB but the also the process for correlation and transformation that are currently part of the TDB Generation. Ontologies may provide the mechanism that enables the interpretation and sharing of TDB data by computer process and agents. Capturing this information provides valuable persistent TDB Generation process information on TDB transformations, integrity and correlation which could be used to tune the correlated representations.

### ***New TDB Gen paradigm for distributed environments***

The contribution to the body of knowledge includes an alternative network centric TDB generation paradigm that addresses the timely update of synthetic environments on network centric architectures and systems of systems. Other supporting technologies include the expansion of the traditional TDB metadata through the use of a knowledge base that captures the TDB structure, correlation and TDB generation process.

To enable correlation between heterogeneous TDB representations in the presence of frequent updates it is necessary to frequently update all TDB representations.

Regenerating large portions of the TDB may be impractical for distributed simulations which operate on limited bandwidth networks and limited processing platforms. Limited

resources on embedded training system as well as in other systems of systems or platforms may prevent TDB generation processing on-board. On-board TDB generation systems will require additional application software, disk space, processing power, memory which may be limited on these platforms. Therefore, it is also desirable to limit the footprint of the TDB generation system. But even if the processing power was available and the network bandwidth was not a problem all the affected representations need to be considered and if necessary updated to maintain correlation. The main problem is that in isolation client applications may not be aware of all the representations on the network or understand how to interoperate with these applications. Therefore it is necessary to provide a central point that contains this information and is able to map between TDB representations, perform the necessary set of fidelity and performance tradeoff to enable correlation between all the representations.

Bi-directional processing of changes of downstream point (i.e. target formats) allows for the changes to be implemented at the point where they make more sense. Translation of changes to TDB components, determination of dependencies and use of necessary transformation is implemented on a server which ensures that all representations are correlated. Tradeoffs between representations and correlation tests ensure that the best options for all TDB are considered. Once this correlated view is achieved changes are propagated to all client applications.

Other system of systems applications like the DARPA Component, Context, and Manufacturing Model Library (DARPA 2001) can leverage the architecture and ontology principles to implement flexible computer and manufacturing model mappings across a variety of different implementation. In this context a coherent library may be assembled from models multiple supplier and technical areas and similar TDB correlations goals as those implemented in the case study.

The use of ontologies expands the traditional TDB metadata to include structural components and the relationships between these components which enable partial TDB regeneration. This expanded version of the TDB data model is provided through the description of classes, object properties, and other relationships that have the potential for the derivation or inference of additional information which was not originally provided. Ontologies as metadata for the TDB have the potential to solve some the TDB heterogeneity mapping problems by inferring relationships not explicitly included in the ontological models. In addition ontology descriptions of the data have the potential to simplify the description of this knowledge about the TDB structure, correlation and TDB transformation process.

### **Limitations**

Queries in the prototype model and for future large and complex knowledge bases were not optimized. Therefore future optimization should be expected. . As far as performance is related, the knowledge base queries may be one of the limiting concepts of this architecture. The approach used in this case study stored a general number of concepts into OWL as well as a number of specific TDB instance data on data elements. The prototype architecture case study used general ontology knowledge of TDB data elements to pre-process the OTF, LTF and FLT TDBs and generate specific ontological instance (individuals) data element dependencies. As this knowledge base increases in size it will be important to keep in mind the best combination of general ontological information and individual data. The advantages of the individual data is that it's pre-process as well as the advantages of generic raw knowledge is it's flexibility at runtime need to be further researched.

Another enabling feature of the Bi-directional Ontology-driven TDB Generation Architecture solution is the isolation of the target TDB runtime and terrain database generation proprietary implementations through a TDB API interface that provides the needed data for the system to obtain information on data elements and partially regenerate the TDBs. The prototype architecture implementation of the TDB API enabled this architecture to read, update and write the OTF, LTF and FLT target formats. However, one of the biggest challenges will be to have the commercial

developers of target formats provide the necessary implementations of the TDB API interface to make Bi-directional Ontology-driven TDB Generation Architecture a practical solution. Without the TDB API interface implementation the architecture main concepts will not function. The TDB API allows for access to read and write capabilities which may sometimes be implemented through proprietary target formats. Partial regeneration may also prove to be a challenge. In addition, although the current set of services are general and supported the prototype architecture implementation of a set of live, virtual and constructive target formats it would not be a surprise if the current set of services may evolve to include a large variety of services as more target formats are included.

As mentioned by Mamaghani (1995) TDB generation requirements need to take into consideration the limited target hardware processing power to render the TDB along with the agents and other models required for application specific modeling and simulation. This is often done through a polygon budget for a given application. The Theoretical Architecture proposed in this dissertation allows for the potential relationship between target format performance parameters and potential TDB change solutions. Ontological descriptions that take into consideration the target platform performance capabilities were considered but not included in the Prototype Architecture. Further due to resource limitations and the large variation of processing demands polygonal



representation create, neither the integrity nor the correlation tests in the Prototype Architecture implementation tested the resulting TDB to meet a polygon cap.

### **Lessons Learned**

Generation of the agent processing framework, OWL knowledge base and supporting query framework, the TDB generation infrastructure, TDB API read and write capabilities for OTF, LTF and FLT was a very time consuming effort. Looking back at this effort it would have been easier to implement the prototype architecture on top of a commercial TDB generation system like TerraVista. However, there are a lot of pros and cons to this approach. Now that the framework is in place, a more elaborate set of TDB generation models will need to be included on future work. One way to do include more complex TDB generation models may be to provide a link or interface to an existing TDB generation system framework through the test and transformation factories and leverage the traditional generation of source data to target format transformation. However, linking this work to a commercial application may limit its academic benefits. In addition including a traditional TDB generation pipeline will only leverage the transformation from source data elements to target formats. The incorporation of target format changes to updated data elements (i.e. bi-directional implementation) will still need to be implemented. It is expected that eventually partial regeneration of these sub-components may also improve the performance.

The Theoretical Architecture Queue component (reference Figure 15 and 16) was included to allow for TDB change message processing and coordination in the client and server. In the Prototype Architecture implementation, messages were processed in a first come first serve basis. A potential function of the Queue component would be to prioritize changes, merge, and resolve conflicts between changes in the network. Perhaps a better name for this component would it being Arbitrator. As an Arbitrator this component would resolve conflict between clients related to concurrent modification of features and other similar functions. The optimal approach to implementing an Arbitrator is left for future research.

### **Observations**

This section addresses questions that were asked at the defense on scalability and learning.

### ***Scalability***

At the dissertation defense a question was posed that when paraphrased asked if it is harder to deal with change in the ontology-agent approach than change in the pipeline approach. This is an excellent question and immediately goes to the question of scalability. Bondi (2000) claims that scalability can be measured in various dimensions including: load scalability, space scalability, space-time scalability, and structural scalability. Load scalability is the ability of the system to function without delay and unproductive resource consumption or resource contention at light, moderate, or heavy

loads while making good use of available resources. Space scalability is achieved if the system memory requirements do not grow to intolerable levels as the number of items it supports increases. A system has space-time scalability if it continues to function gracefully as the number of objects it encompasses increases by orders of magnitude. And finally a system is structurally scalable if its implementation does not impede the growth of the number of objects it encompasses. Obviously, addressing scalability in the above detail is beyond the scope of this dissertation. However, in order to describe how one would go about determining the load scalability of the proposed ontology and agent approach verses the traditional pipeline approach, I would first assert that the scalability of the ontology with agents will be no worse than the traditional pipeline with the scores of humans that are needed to work over months to generate a new TDB.

Scalability controls within the traditional TDB generation pipeline paradigm relies primarily on reducing TDB re-generation to the processing of block of geospatial data. Farms of computing nodes process individual blocks of data while master nodes integrate the final product. Once an acceptable product is generated the final n target formats are published and tested. Anomalies in any one of the n target formats must be addressed and the TDB generation pipeline will need to regenerate the affected nodes and publish again. Testing is done by humans add additional time to the process.

In terms of scalability of the Theoretical Architecture proposed in this dissertation, scalability needs to be considered at the server and at each client. At the server, the complexity of the ontology and agent approach is related to the relationships among the vertices, arcs and axioms in the ontology which in turn are related to the ontology classes, properties, individuals and axioms. In the theoretical architecture the complexity of the ontology is a function of the number of TDB formats, the TDB data models complexity. Any one data element within the TDB can be potentially related to representations on  $n$  different TDB formats. In this case the theoretical complexity of the relationships between TDB ontologies follows an  $O(n^{(n-1)})$  order. However, this complexity is limited by the fact that organizations are limiting the number of TDB formats. For example, the US Army SE-CORE program is currently standardizing to use OTF and Compact Terrain Database (CTDB) for all constructive applications and programs like CCTT have a number of limited virtual target formats like EPX50 and OpenFlight. Further, other services such as the Navy, Marine Corps and Air Force are standardizing on de-facto standard like OpenFlight and CTDB. Thus while the theoretical complexity of the issue of scalability includes  $n$  formats this is small number. For instance, SE-CORE DVED currently provides support for publication of only 16 formats. Load scalability at the client will be determined by the amount of changes that need to be incorporated and the available processing power. By design the clients do not perform any interpretation on the TDB updates. The function of the clients is to

integrate the TDB updates into the local target format. No scalability issues are expected.

Scalability is also concerned with the effective creation of the ontology model and maintenance over time (life-cycle). Modularity is an emerging approach for developing ontologies that leads to a scalable development process and better ontology reasoning and query performance (Ensan 2010). The proposed theoretical architecture decomposition of the ontologies into structure, correlation and transformation provides a framework for modularization of the data. The modularization of the prototype architecture repository presented in Chapter 5 (shown in Figure 37) provides live, virtual and constructive ontologies which promotes the efficient addition of new LVC TDB ontologies. Reusable ontology components under the structure ontology like the coding catalog, test and transformation are intended to provide for a layer approach that can leverage existing ontology classes, relationships and individual for new TDB formats. Leveraging these definitions is therefore expected to expedite the development and addition of new TDB ontologies.

However, the ontology import technique used in the prototype architecture does not provide for true modular ontologies that exploit a high degree of encapsulation, loose coupling, self-containment, reasoning scalability and reasoning support as defined by Ensan (2010). Scalability for ontology information retrieval needs a type of

modularization that limits the search space for a given query. Reasoning in a modular ontology is also more efficient because reasoning engines need to only process the relevant knowledge bases modules. The inherent spatial division by TDB, cells, and data element provide a spatial partition that enables searching on only selected ontologies. In the prototype architecture every ontology TerrainDatase, Cell and DataElement class contained extents which can be used to identify affected components and perform spatial optimizations. However, the prototype implementation is still considered a monolithic ontology. Modularity in ontologies is implemented by defining interfaces to the ontology concepts which encapsulate and isolate the implementation.

Scalability for ontology evolution and maintenance is supported by limiting the propagation of changes from evolving ontologies to other parts of the system. Through modularity the behavior of the ontology components is defined through their interfaces which are separated from their later detailed implementation. Consequently, ontology components can utilize each other's classes, properties and individuals without being consciously aware of each other's detailed implementation. Therefore, the ontology implementations may change even after the inter-connections between logical components have been specified. This approach allows ontologies to evolve independently of each other. As long as the interfaces of the ontology component do not

change, its entire knowledge base can change without requiring other connected modules to change their signatures.

So while the complexity of the proposed ontology agent approach is  $O(n^{(n-1)})$  this complexity is bound by small number of TDB. Scalability may be supported by approaches that exploit encapsulation, loose coupling, self-containment to enable reasoning scalability and reasoning support.

### ***Learning***

Another question that arose is how to deal with learning. Learning deals with error correction. Error can be expected both in the implementation of the ontology data model descriptions, tests, TDB transformations and agent behavior. To recover from error conditions and for better quality control the need for logging, reviewing and revering TDB updates is needed. A tutor or supervised configuration management component or mode may provide a solution to this issue. Configuration management would allow for TDB changes to be logged and tag which will enable reverting to a specific configuration. In a tutor or supervised configuration management mode the system could route TDB updates to another process or human for review and authorization. An alternative mode of operation will incorporate the TDB updates and allow for review at a later time. If the corporate changes are not acceptable the

configuration management system would allow for the reverting to previous tagged configuration.

Debug logs and confidence levels on sub-goals were provided in the prototype architecture. An extension to logs and confidence intervals could provide alerts for automated process or human supervisors. In this mode TDB updates with low levels of confidence will be logged and reviewed for potential error conditions. Low confidence level updates may signal troublesome or conflicting TDB client changes and or updates which may needed further consideration.

### **Future Research**

The generation of interdependencies between the live, virtual, and constructive target formats is key to the partial regeneration. The current approach relies on well defined data model for the TDB. Since this research only demonstrated bridge and building interdependencies, further definitions on the generic important interdependencies between attributes and geometry that affect system interoperability will need to be developed and included into the ontology. A general approach that relies on generic topological relationships (e.g. next to, over, under, inside) which may be applied to any TDB will be the ultimate goal. It is expected that such an approach will still be guided by the identification of TDB data element classifications but perhaps be more general (i.e. intelligent). In addition to geometry and attributes changes the modification of TDB



structure related to performance may need to be considered in future work. This will include structure modifications that group together state changes as well as similar data element characteristics and other groupings developed to optimize runtime performance.

The main idea behind the use of a knowledge base was to provide a way to express the TDB data model, TDB Generation, correlation, testing and transformation knowledge for generic agent process. However, additional time will be needed to investigate the inference of information and how this new information could be used to benefit the knowledge base. In addition future research should explore the derivation of information from simple representations axioms. Future research should also develop standard sets of integrity and correlation tests which can be used to generically test integrity and correlation. This is how the agents in this architecture perceive the world. The need for the development of acceptable live, virtual and constructive correlation metrics would also be needed. However it is expected that the general set of correlation tests will most likely include test such as existence, elevation and attribute differences, and line of sight.

One of the main assumptions of the research hypothesis was that agents, using some shared ontology and partial regeneration technique, could monitor and incorporate changes to a target formats utilized by members of a distributed network of simulations.

In a more general sense methods for detecting changes on client TDBs may be used to periodically collect TDB changes and perform them at some convenient time. Research will also be needed into the benefits of grouping changes and processing multiple modifications at a onetime vs. the incorporation of many individual changes. It is expected that some optimum number of changes may be processed at one time, therefore optimizing network bandwidth and client processing performance.

**APPENDIX A:  
LEGACY TDB NETWORK UTILIZATION**

This section includes the source code used to measure TDB transfer throughputs and network utilization times used in the research plan.

In this application the TDB directories and files are recursively transfer across the network while the size of the transfer and the time is recorded. The size of the transfer and time are used to determine the TDB Transfer Throughput.

The following equation is used to calculate TDB throughput;

$$Throughput = \frac{(8 * dataTransferSize)}{transferTime} \text{ bits per sec}$$

Where

*dataTransferSize*: The number of bytes that are transferred.

*transferTime*: The duration time in seconds of the transfer.

TDB transfer size and times are logged and the network throughput calculated for the TDB file transfer. The following table provides information on TDB size, transfer time and through puts.

	FLT	OTF	LTF
Total Transfer Size (bytes)	104171169	25196734	1807829

Transfer time (sec)			
Average	9.787	2.301	0.183
standard deviation	0.448	0.066	0.008
Throughput (Mbps)			
Average	81.361	83.594	75.505
standard deviation	3.772	2.481	3.370

Adjusted transfer times base on 1 degree by one degree data file size.

	FLT	OTF	LTF
Total Transfer Size (bytes)	25600236490	25196734	20192514288
Transfer time (sec)			
Average	2336.463	2.301	2040.337
Throughput (Mbps)			
Average	81.361	83.594	75.505

### **Raw data**

This section includes the raw data and analysis which supports the above tables.

### **OTF DATA**

This section includes the network utilization data for the OTF TDB

# OTF

Tot Transfer Size (bytes)	25196734	bytes	24.029 MB
Extents	1 x 1	deg	
	111.325 x 111.325	KM	
Area	12393.26	KM^2	

	Throughput	Transfer	
		time	
	Mbps	sec	min
avg	83.594	2.301	0.038356699
std	2.481	0.066	0.001094792

<http://www.t1shopper.com/tools/calculate/downloadcalculator.php>

100	Mbps	2.020	sec
83.594	Mbps	2.300	sec

TDB Throughput Transfer Data

20-Jun-11

readings	#1	81.490	2.359
	#2	81.663	2.354
	#3	82.047	2.343
	#4	82.258	2.337
	#5	82.789	2.322
	#6	82.932	2.318
	#7	83.039	2.315
	#8	83.799	2.294
	#9	86.632	2.219
	#10	89.287	2.153

***FLT DATA***

This section includes the network utilization data for the FLT TDB.

**FLT**

Tot Transfer Size (bytes)	104171169	bytes	99.345	MB
Extents	aprox	8200 x 6150	meters	

cells 2050 4 x 3  
 Area 50.43 KM<sup>2</sup>  
 1 cell ratio 245.7516483  
 24414.28  
 Adjusted TDB size 25600236490 bytes 8 MB

	Throughpu t Mbps	Transfer time	
		sec	min
avg	81.361	9.787	0.16312
std	3.772	0.448	0.00746

	Throughpu t Mbps	Transfer time		
		sec	min	hr
avg	81.361	2400.589	40.010	0.667

<http://www.t1shopper.com/tools/calculate/downloadcalculator.php>

100.000 Mbps 2048.000 sec 34 min 8 sec  
 81.361 Mbps 2400.589 sec 40 min 0.6 sec



TDB Throughput Transfer Data

20-Jun-11

readings	#1	76.663	10.367
	#2	77.176	10.298
	#3	77.727	10.225
	#4	79.508	9.996
	#5	80.900	9.824
	#6	81.331	9.772
	#7	82.444	9.640
	#8	84.441	9.412
	#9	85.348	9.312
	#10	88.072	9.024

**LTF DATA**

This section includes the network utilization data for the LTF TDB.

**LTF**

Tot Transfer Size (bytes)	1807829	bytes	1.724	MB
	1150.72 x	meter		
Extents	963.70	s		
Area	1.109564	KM^2		

1 cell ratio

11169.48245

2019251428

19257.08

Adjusted TDB size

8

bytes

2 MB

	Throughpu	Transfer time	
	t		
	Mbps	sec	min
avg	75.506	0.183	0.003050003
std	3.371	0.008	0.00013676

	Throughpu	Transfer		
	t	time		
	Mbps	sec	min	hr
avg	75.506	2040.337	34.006	0.567
std				

<http://www.t1shopper.com/tools/calculate/downloadcalculator.php>

						mi		
100.000	Mbps	1615.000	sec	26	n	55	sec	
						mi		
75.506	Mbps	2040.337	sec	34	n	0.3	sec	

TDB Throughput Transfer Data

20-Jun-11

readings	#1	70.731	0.195
	#2	71.837	0.192
	#3	71.837	0.192
	#4	73.757	0.187
	#5	75.370	0.183
	#6	76.202	0.181
	#7	77.054	0.179
	#8	78.815	0.175
	#9	79.726	0.173
	#10	79.726	0.173

Source code can be provided on request

## **APPENDIX B: EXPERIMENT DATA**

This appendix contains the summary of the network utilization and processing performance data as well as an example log for one of the experiment runs. The log provides detailed information on the actual experiment run. Due to the size of the logs only one log is included.

**Network utilization**

**Table 14 - Server network utilization data**

		Server					Server		
		transmit		msg			transmit		msg
		time					time		
		(sec)	Mbps	bytes			(sec)	Mbps	bytes
<b>BUILDING</b>		0.079	0.319	3307	<b>BRIDGE</b>		0.083	0.149	1620
		0.073	0.210	2013			0.072	0.172	1620
		0.095	0.162	2013			0.070	0.176	1620
average		0.082	0.230	2444	average		0.075	0.166	1620
standard deviation		0.011	0.080	747	standard deviation		0.007	0.015	0

Table 14 show the server network utilization data for the 3 trials conducted on the prototype architecture. This data shows the message size in bytes need by the OTF client to convey the TDB changes. The transmit times are the times it took for each message to arrive at the server.



Table 15 - Client network utilization data

**BUILDING**

average  
standard deviation

FLT			LTF			OTF		
transmit time (sec)	Mbps	msg bytes	transmit time (sec)	Mbps	msg bytes	transmit time (sec)	Mbps	msg bytes
0.069	0.069	1811	0.188	0.115	2824	1.262	0.047	7725
0.055	0.256	1847	0.138	0.156	2824	2.335	0.025	7725
0.054	0.260	1847	0.399	0.053	2824	0.767	0.077	7725
0.059	0.195	1835	0.242	0.108	2824	1.455	0.050	7725
0.008	0.109	21	0.139	0.052		0.802	0.026	0

**BRIDGE**

FLT			LTF			OTF		
transmit time (sec)	Mbps	msg bytes	transmit time (sec)	Mbps	msg bytes	transmit time (sec)	Mbps	msg bytes
0.171	0.076	1709				1.272	0.027	4469
0.121	0.108	1709				1.608	0.021	4469
0.173	0.075	1709				1.603	0.021	4469

average	0.155	0.086	1709				1.494	0.023	4469
standard deviation	0.029	0.019	0				0.193	0.003	0

Table 15 shows the client network utilization data for the 3 trials conducted on the prototype architecture.



**Change message processing time**

This section included data on the change message processing time.

**Table 16 - Change message processing time**

<b>BUILDING</b>	<b>SERVER</b>		<b>FLT</b>	<b>LTF</b>	<b>OTF</b>
	<b>processing time</b>		<b>processing time</b>	<b>processing time</b>	<b>processing time</b>
	<b>sec</b>	<b>min</b>	<b>sec</b>	<b>sec</b>	<b>sec</b>
	501.519	8.359	24.915	2.733	74.312
	391.953	6.533	22.415	2.739	80.295
	401.289	6.688	21.173	2.703	85.990
average	431.587	7.193	22.834	2.725	80.199
standard deviation	60.7425	1.012	1.906	0.019	5.840

<b>BRIDGE</b>	<b>SERVER</b>		<b>FLT</b>	<b>LTF</b>	<b>OTF</b>
	<b>processing time</b>		<b>processing time</b>	<b>processing time</b>	<b>processing time</b>
	<b>sec</b>	<b>min</b>	<b>sec</b>	<b>sec</b>	<b>sec</b>
	380.491	6.342	21.627		71.291
	350.29	5.838	20.391		75.193

	443.641	7.394	19.557		73.209
average	391.474	6.525	20.525		73.231
standard deviation	47.6348	0.794	1.041		1.951
std dev of the mean	27.502	0.458	0.601		1.126

Table 16 shows the server processing times for the 3 trials conducted on the prototype architecture.

## Hypothesis testing

This section includes the single tail t-test for the network utilization hypothesis.

Hypothesis Test	
one	
tail	
Ho	proto archi avg net utilization time $\geq$ legacy archi avg net utilization time
Ha	proto archi avg net utilization time $<$ legacy archi avg net utilization time
t stat = ( proto archi net utilization time - legacy net utilization time ) / Standard Error	
standard error = std deviation or legacy net utilization time / sqrt ( number of samples )	
num samples	3
proto archi avg net utilization time	1.838 sec
legacy archi avg net utilization time	2.301 sec
legacy archi std dev net utilization time	0.066 sec
standard error	0.038105118 sec
t stat	-12.1506
df	2
alpha	0.050

critical value	-2.920	
p-value	0.003	<=== p-value or level of significance
Confidence	99.7%	



USING T-DISTRIBUTION

beta  $p ( t < -1.28119 ) = 16\%$   
statistical power  $( 1 - \text{beta} ) = 84\%$

USING NORMAL DISTRIBUTION

at p-value = 0.003 use alternate mean beta

$t = (1.838 - \text{some mean}) / \text{std error} -1.28119$  10%

## Server Logs

The server logs included a main server log and 3 logs for the TDB api processing servers. The main log `lvcServer-Aug04-5.log` includes the all of the server processing information. It starts with the reception of the client change message follows with the internal processing of the changes and eventually the transmission of the update.

The local TDB API RMI processing servers process OTF, LTF and FLT changes locally.

The logs show the native api processing calls.

### ***lvcServer-Aug04-5.log***

```
GCC_HOME = /work/supEnv
PATH =
/work/jdk1.6.0_10/bin:/work/sp_onesaf2_1/SWR/external/ant/bin:/usr/bin:/sbin:/usr/sbin:/work/jdk1.6.0_10/bin:/work/sp_onesaf2_1/SWR/external/ant/bin:/usr/bin:/sbin:/usr/sbin:/usr/lib64/qt-3.3/bin:/usr/kerberos/bin:/usr/local/bin:/usr/bin:/bin:/usr/X11R6/bin:/home/bgraniela/bin
LD_LIBRARY_PATH = /work/sp_onesaf2_1/SWR/lib/so:/work/sp_onesaf2_1/SWR/lib/so/linux/x86_64:/usr/X11R6/lib
./runtimeLoader -s PartialTdbGenServer
TIME: Running on lvcServer.localdomain at Thu Aug 4 15:44:28 EDT 2011 - net.onesaf.core.services.sys.composition.RuntimeLoader
PartialTdbGenServer - -Dnet.onesaf.core.services.sys.messaging.messagingEnabled=false
=====
DEBUG INFO PATHS START
PATH =
./native:/work/jdk1.6.0_10/bin:/work/sp_onesaf2_1/SWR/external/ant/bin:/usr/bin:/sbin:/usr/sbin:/work/jdk1.6.0_10/bin:/work/sp_onesaf2_1/SWR/external/ant/bin:/usr/bin:/sbin:/usr/sbin:/usr/lib64/qt-3.3/bin:/usr/kerberos/bin:/usr/local/bin:/usr/bin:/bin:/usr/X11R6/bin:/home/bgraniela/bin:/work/sp_onesaf2_1/SWR/lib/so:/work/sp_onesaf2_1/SWR/lib/so/linux/x86_64:/work/sp_onesaf2_1/SWR/external/LTFApi:/work/osg/OpenSceneGraph-2.6.1/lib:/work/osg/OpenSceneGraph-2.6.1/lib/osgPlugins-2.6.1:/work/osg/OpenSceneGraph-2.6.1/bin
LD_LIBRARY_PATH =
./native:/work/sp_onesaf2_1/SWR/lib/so:/work/sp_onesaf2_1/SWR/lib/so/linux/x86_64:/usr/X11R6/lib:/work/sp_onesaf2_1/SWR/lib/so:/work/sp_onesaf2_1/SWR/lib/so/linux/x86_64:/work/sp_onesaf2_1/SWR/external/LTFApi:/work/osg/OpenSceneGraph-2.6.1/lib:/work/osg/OpenSceneGraph-2.6.1/lib/osgPlugins-2.6.1
CLASSPATH =
/work/jdk1.6.0_10/lib/dt.jar:/work/jdk1.6.0_10/lib/tools.jar:/usr/share/java/external/PilotTestExternal/groupLayout.jar:/usr/share/java/external/FLTApi/FLTReadWrite.jar:/usr/share/java/external/LTFApi/LTFReadWrite.jar:/usr/share/java/external/PilotTestExternal/srm.jar:/usr/share/java/external/PilotTestExternal/pellet-2.1.1/lib/aterm-java-1.6.jar:/usr/share/java/external/PilotTestExternal/pellet-2.1.1/lib/pellet-test.jar:/usr/share/java/external/PilotTestExternal/pellet-2.1.1/lib/pellet-rules.jar:/usr/share/java/external/PilotTestExternal/pellet-2.1.1/lib/pellet-query.jar:/usr/share/java/external/PilotTestExternal/pellet-
```

2.1.1/lib/pellet-pellint.jar:./external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapi.jar:./external/PilotTestExternal/pellet-2.1.1/lib/pellet-modularity.jar:./external/PilotTestExternal/pellet-2.1.1/lib/pellet-jena.jar:./external/PilotTestExternal/pellet-2.1.1/lib/pellet-explanation.jar:./external/PilotTestExternal/pellet-2.1.1/lib/pellet-el.jar:./external/PilotTestExternal/pellet-2.1.1/lib/pellet-dig.jar:./external/PilotTestExternal/pellet-2.1.1/lib/pellet-datatypes.jar:./external/PilotTestExternal/pellet-2.1.1/lib/pellet-core.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jena/xercesImpl-2.7.1.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jena/wstx-asl-3.2.9.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jena/tax-api-1.0.1:./external/PilotTestExternal/pellet-2.1.1/lib/jena/slf4j-log4j12-1.5.6.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jena/slf4j-api-1.5.6.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jena/lucene-core-2.3.1.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jena/log4j-1.2.13.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jena/junit-4.5.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jena/jena-2.6.2-test.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jena/jena-2.6.2.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jena/iri-0.7.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jena/icu4j-3.4.4.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jena/arc-2.8.1.jar:./external/PilotTestExternal/pellet-2.1.1/lib/jetty/jetty.jar:./external/PilotTestExternal/pellet-2.1.1/lib/xsdlib/xsdlib.jar:./external/PilotTestExternal/pellet-2.1.1/lib/xsdlib/relaxngDatatype.jar:./external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapi.jar:./external/PilotTestExternal/pellet-2.1.1/lib/owlapi/owlapi-bin.jar:./external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapiv3.jar:./external/PilotTestExternal/pellet-2.1.1/lib/owlapiv3/owlapi-bin.jar:./external/PilotTestExternal/gt2-coverage-2.4.4.jar:./external/PilotTestExternal/gt2-gml-2.4.4.jar:./external/PilotTestExternal/gt2-main-2.4.4.jar:./external/PilotTestExternal/jts-1.8.jar:./external/PilotTestExternal/jetty/servlet-api-2.5-6.0.0rc2.jar:./external/PilotTestExternal/jetty-6.0.0rc2.jar:./external/PilotTestExternal/jetty-6.0.0rc2.jar:./external/scripting/rhino1\_6R7.jar:./external/scripting/jython.jar:./external/scripting/js-engine.jar:./external/scripting/jython-engine.jar:./external/xmlbeans/DGMMsgMappings.jar:./external/xmlbeans/xmlbeans-api.jar:./external/xmlbeans/DGMMsgMappings.jar:./external/xmlbeans/xmlbeans-2.3.0/lib/xbean.jar:./external/truezip/truezip.jar:./external/jmx/jmxremote\_optional.jar:./external/jmx/jmxremote.jar:./external/jmx/jmxtools.jar:./external/commons-math/commons-math-1.1.jar:./external/poi/poi-2.5.1-final-20040804.jar:./external/java3d/j3dutils.jar:./external/java3d/j3dcore.jar:./external/java3d/vecmath.jar:./external/jrm/s/classes.jar:./external/prefuse/prefuse.jar:./external/prefuse/prefuse.jar:./external/skinlf/skinlf.jar:./external/javahelp/lib/jhall.jar:./external/xerces/xml-apis.jar:./external/xerces/xercesImpl.jar:./external/jaxb/lib/jaxb-all.jar:./external/infobus/infobus.jar:./external/mckoi1.0.2/mckoidb.jar:./external/xalan2/xalan.jar:./external/lib/services/sysproploader.jar:./external/log4j/log4j-1.2.8.jar:./external/lib/services/sys/logger2.jar:./external/lib/services/sys/init.jar:./external/lib/services/sys/enum.jar:./external/lib/services/sys/cachemgr.jar:./external/lib/services/sys/ext.jar:./external/lib/services/sys/repository.jar:./external/lib/services/gui/support/support.jar:./external/lib/services/gui/tool/resources.jar:./external/lib/services/sys/timer.jar:./external/lib/services/data/sax.jar:./external/lib/services/data/dom.jar:./external/lib/services/data/encodable.jar:./external/lib/services/sys/capability.jar:./external/lib/services/sys/composition.jar

DEBUG INFO PATHS END

Aug 4, 2011 3:44:31 PM net.onesaf.core.services.sys.messaging.ServiceRegistry <init>

WARNING: Messaging Services disabled flag is set. Going to single node mode.

00:00] GVT: -1 info ./src/net/onesaf/core/services/erc/native/src/core/sim\_time.cpp 332:

+ CORE::SimTime initialized from the system clock.

Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.common.TdbGen\_Queue::\_[1msubscribe\_0m [92] - Added listener:

net.onesaf.ext.dpbtbrgen.services.tdbrepository.TdbRepositoryManager@669aa3f3

Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mloadTdbRepoInfo\_0m [179] - Support for Virtual TDB processing

ENABLED. path: /work/tdbRepository/

Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mloadTdbRepoInfo\_0m [186] - Support for Constructive TDB processing

ENABLED

Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mloadTdbRepoInfo\_0m [195] - Support for Live TDB processing

ENABLED

Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mloadTdbFrontAndBackEnds\_0m [255] - Provide support for Virtual

APIs, repository path: /work/tdbRepository/

Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mloadTdbFrontAndBackEnds\_0m [265] - Provide support for

Constructive APIs, repository path: /work/tdbRepository/

Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mloadTdbFrontAndBackEnds\_0m [275] - Provide support for Live APIs,

repository path: /work/tdbRepository/

Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.server.PartialTdbGenServer::\_[1m<init>\_0m [174] - PartialTdbGenServer is running, on machine: lvcServer, port:

7777

Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message



INFO: dpbtbrgen.services.server.PartialTdbGenServer::\_[1]initClientConnection\_[0m [251] - Constructive Client support enabled.  
Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.server.PartialTdbGenServer::\_[1]mconnectToClient\_[0m [742] - Connecting to client on: lvcConstructive, port: 7777  
Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.server.PartialTdbGenServer::\_[1]initClientConnection\_[0m [279] - Live Client support enabled.  
Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.server.PartialTdbGenServer::\_[1]mconnectToClient\_[0m [742] - Connecting to client on: lvcLive, port: 7777  
Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.server.PartialTdbGenServer::\_[1]initClientConnection\_[0m [306] - Virtual Client support enabled.  
Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.server.PartialTdbGenServer::\_[1]mconnectToClient\_[0m [742] - Connecting to client on: lvcVirtual, port: 7777  
Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1]minitializeTdbFrontAndBackEnds\_[0m [309] - intializing front and backends  
handler[0]class java.util.logging.ConsoleHandler  
handler[1]class java.util.logging.FileHandler  
handler[2]class java.util.logging.FileHandler  
handler[3]class java.util.logging.FileHandler  
handler[4]class java.util.logging.FileHandler  
handler[5]class java.util.logging.FileHandler  
handler[6]class java.util.logging.FileHandler  
Aug 4, 2011 3:44:59 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.common.TdbGen\_Queue::\_[1]msubscribe\_[0m [92] - Added listener:  
net.onesaf.ext.dpbtbrgen.services.server.PartialTdbGenServer@26cbb7db  
Aug 4, 2011 3:44:59 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.server.PartialTdbGenServer::\_[1]m<init>\_[0m [198] - Starting TdbChangeDetectionAndUpdateGenerator  
Aug 4, 2011 3:45:00 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::\_[1]minitialize\_[0m [90] -  
TdbChangeDetectionAndUpdateGenerator - initialize  
Aug 4, 2011 3:45:00 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1]mstartRmiServices\_[0m [163] -  
<<<STARTING ONTOLOGY RMI SERVICES>>> ...  
rmi://localhost/OntoRepoMgrService ready.  
Aug 4, 2011 3:45:00 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1]mstartRmiServices\_[0m [168] - OntologyRepositoryManagerRMIService  
start complete.  
Aug 4, 2011 3:45:00 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1]mloadOntologies\_[0m [183] -  
<<<LOADING ONTOLOGIES>>> ...  
Aug 4, 2011 3:45:00 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1]mloadOntologies\_[0m [195] - ==>> ontology model  
url: http://localhost/ontologies/TDBRepository.owl  
file: file:///var/www/ontologies/TDBRepository.owl  
Aug 4, 2011 3:45:12 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1]mloadOntologies\_[0m [213] - Ontology Format: RDF/XML  
Aug 4, 2011 3:45:12 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1]mloadOntologies\_[0m [222] - ==>> Creating Jena ontology model  
backed by the Pellet reasoner  
from file: file:///var/www/ontologies/TDBRepository.owl  
Aug 4, 2011 3:45:53 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1]mloadOntologies\_[0m [237] - done.  
Aug 4, 2011 3:45:53 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1]mloadOntologies\_[0m [238] - ==>> DONE, loading ontology  
Aug 4, 2011 3:45:53 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1]mloadOntologies\_[0m [242] - PROCESSING TIME: 53617 miliseconds.  
Aug 4, 2011 3:45:53 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.common.TdbGen\_Queue::\_[1]msubscribe\_[0m [92] - Added listener:  
net.onesaf.ext.dpbtbrgen.services.blackboard.TdbChangeDetectionAndUpdateGenerator@d900be1  
Aug 4, 2011 3:45:53 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.server.PartialTdbGenServer::\_[1]mhandleClientConnection\_[0m [346] - Waiting for client message...  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.server.ConnectionHandler::\_[1]mrun\_[0m [806] - <<< Client Message Received>>> received msg#0  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtdbrgen.services.server.ConnectionHandler.:\_[1mrun\_[0m [807] - message:

```
<?xml version="1.0" encoding="UTF-8"?>
<ClientTargetFormatChange>
  <ChangeDateTime>1312487199163</ChangeDateTime>
  <ClientMachineName>IvcConstructive</ClientMachineName>
  <ClientPort>7777</ClientPort>
  <ClientTargetFormat>OTF</ClientTargetFormat>
  <Description>
    Changes to OTF target format
  </Description>
  <ChangeList>
    <Change>
      <FeatureType>Point</FeatureType>
      <FeatureLabel>BUILDING</FeatureLabel>
      <FeatureId>9c6d352c4ca211e08459002421a8c4c6</FeatureId>
      <GeometryList>
        <Point>
          <X>-117.02189170000001</X>
          <Y>34.891405562253446</Y>
          <Z>711.0001743612811</Z>
        </Point>
      </GeometryList>
      <AttributeList>
        <Attribute>
          <Name>TERRAIN_TRAFFICABILITY_FINE</Name>
          <Value>ID_0</Value>
        </Attribute>
        <Attribute>
          <Name>HEIGHT_ABOVE_SURFACE_LEVEL</Name>
          <Value>5.0</Value>
        </Attribute>
        <Attribute>
          <Name>ORIENTATION_ANGLE</Name>
          <Value>0.0</Value>
        </Attribute>
        <Attribute>
          <Name>ILLUMINANCE</Name>
          <Value>1.0</Value>
        </Attribute>
        <Attribute>
          <Name>USAGE</Name>
          <Value>NON_MILITARY</Value>
        </Attribute>
        <Attribute>
          <Name>PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION</Name>
          <Value>0.0</Value>
        </Attribute>
        <Attribute>
          <Name>LENGTH</Name>
          <Value>15.0</Value>
        </Attribute>
        <Attribute>
          <Name>PRIMARY_PRODUCT</Name>
          <Value>NO_PRODUCT</Value>
        </Attribute>
        <Attribute>
          <Name>TERRAIN_TRAFFICABILITY_MEDIUM</Name>
          <Value>ID_20</Value>
        </Attribute>
        <Attribute>
          <Name>TERRAIN_TRAFFICABILITY_COARSE</Name>
          <Value>DEFAULT</Value>
        </Attribute>
      </AttributeList>
    </Change>
  </ChangeList>
</ClientTargetFormatChange>
```

```

    </Attribute>
    <Attribute>
      <Name>GENERAL_DAMAGE_FRACTION</Name>
      <Value>7.0</Value>
    </Attribute>
    <Attribute>
      <Name>DEPTH_BELOW_SURFACE_LEVEL</Name>
      <Value>0.0</Value>
    </Attribute>
    <Attribute>
      <Name>BUILDING_FUNCTION</Name>
      <Value>HOUSE</Value>
    </Attribute>
  </AttributeList>
</Change>
</ChangeList>
</ClientTargetFormatChange>

```

Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.server.ConnectionHandler::\_[1mcalculateThroughput\_[0m [881] - message received time: 1312487199258  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.server.ConnectionHandler::\_[1mcalculateThroughput\_[0m [891] - looking for ChangeDate tag  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.server.ConnectionHandler::\_[1mgetStringAttribute\_[0m [940] - Attribute [name: ChangeDateTime] [value: 1312487199163]  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.server.ConnectionHandler::\_[1mcalculateThroughput\_[0m [896] - ChangeDate: 1312487199163  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.server.ConnectionHandler::\_[1mcalculateThroughput\_[0m [906] - MESSAGE transmission time: 95 msec  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.server.ConnectionHandler::\_[1mcalculateThroughput\_[0m [907] - 0.095 sec  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.server.ConnectionHandler::\_[1mcalculateThroughput\_[0m [911] - message size: 2013 characters / bytes  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.server.ConnectionHandler::\_[1mrun\_[0m [810] - <<<METRIC>>> client-to-sever change message throughput: 169515.7894736842 bps  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.server.ConnectionHandler::\_[1mrun\_[0m [811] - 165.54276315789474 Kbps  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.server.ConnectionHandler::\_[1mrun\_[0m [812] - 0.16166285464638158 Mbps  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.server.ConnectionHandler::\_[1mrun\_[0m [846] - posted message for processing, waiting processing to complete.  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1msetClientMessageForProcessing\_[0m [371] - initializing xml\_document  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1misClientTdbChangeMessage\_[0m [402] - Determine if XML Message is client tdb change - looking for ClientTargetFormatChange tag  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.server.PartialTdbGenServer::\_[1mpostMessage\_[0m [423] - Processing client change message.  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mtranslateClientChangeToDataElement\_[0m [549] - looking for ClientTargetFormatChange tag  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessClientTargetChange\_[0m [628] - looking for ClientTargetFormatChange tag  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessClientTargetChange\_[0m [637] - looking for ClientTargetFormat tag [NOTE: support for one change per message only]  
 Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetStringAttribute\_[0m [1216] - Attribute [name: ClientTargetFormat] [value: OTF]  
 Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

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INFO: dpbtdbrgen.services.tdbrepository.TdbRepositoryManager::_[1mgetMessageClientMachineName_0m [466] - looking for ClientMachineName tag
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.tdbrepository.TdbRepositoryManager::_[1mgetMessageClientMachineName_0m [484] - clientMachineName: null
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.tdbrepository.TdbRepositoryManager::_[1mgetMessageClientCommPort_0m [506] - looking for ClientPort tag
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.tdbrepository.TdbRepositoryManager::_[1mgetMessageClientCommPort_0m [524] - clientMachinePort: null
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtdbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_0mdpbtbrgen.services.server.PartialTdbGenServer::_[1maddClient_0m [561] - clientPortString == null
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtdbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_0mdpbtbrgen.services.server.PartialTdbGenServer::_[1maddClient_0m [581] - clientMachineName == null
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_0m [247] - Point: extents sw: Geodetic: lat 34.891128 lon -117.022169 Deg ne: Geodetic: lat 34.891683 lon -117.021614 Deg
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_0m [367] - Point: data - Geodetic: lat 34.891406 lon -117.021892 Deg
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.common.TdbGen_Event::_[1m<init>_0m [100] - Received DataElement: [net.onesaf.ext.dpbtdbrgen.services.geoscratchpad.DataElement
{
    [label] BUILDING
    [format] OTF
    [unique id] 9c6d352c4ca211e08459002421a8c4c6
    [extents] ...
    sw: Geodetic: lat 34.891128 lon -117.022169 Deg ne: Geodetic: lat 34.891683 lon -117.021614 Deg
    [geometry] ...
net.onesaf.ext.dpbtdbrgen.services.geoscratchpad.TdbGen_Geometry
{
    type: Point
    coordType: GDC
    extents: sw: Geodetic: lat 34.891128 lon -117.022169 Deg ne: Geodetic: lat 34.891683 lon -117.021614 Deg
    point data: Geodetic: lat 34.891406 lon -117.021892 Deg
}
    [attributes] ...
net.onesaf.ext.dpbtdbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_MEDIUM, value: ID_20
    Attribute - type: class java.lang.Double, name: GENERAL_DAMAGE_FRACTION, value: 7.0
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_COARSE, value: DEFAULT
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_FINE, value: ID_0
    Attribute - type: class java.lang.Double, name: DEPTH_BELOW_SURFACE_LEVEL, value: 0.0
    Attribute - type: class java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0
    Attribute - type: class java.lang.Double, name: ORIENTATION_ANGLE, value: 0.0
    Attribute - type: class java.lang.String, name: BUILDING_FUNCTION, value: HOUSE
    Attribute - type: class java.lang.Double, name: ILLUMINANCE, value: 1.0
    Attribute - type: class java.lang.String, name: PRIMARY_PRODUCT, value: NO_PRODUCT
    Attribute - type: class java.lang.Double, name: LENGTH, value: 15.0
    Attribute - type: class java.lang.Double, name: PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION, value: 0.0
    Attribute - type: class java.lang.String, name: USAGE, value: NON_MILITARY
}
    ontology class info: null
    layerName: UNDEFINED
}
}
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info
INFO: dpbtdbrgen.services.common.TdbGen_Queue::_[1mgetNext_0m [179] - Items left on ManagerQueue: 1
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info
INFO: dpbtdbrgen.services.common.TdbGen_Queue::_[1madd_0m [126] - Processing item:
net.onesaf.ext.dpbtdbrgen.services.common.TdbGen_Event Object {

```

item id: 47bec418-a334-4bab-b82a-137677b7a874  
date: Thu Aug 04 15:46:40 EDT 2011  
Time in queue: 1312487190146 milisec.  
Processing time: -1312487190146 milisec.  
Priority: 1  
}

Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.common.TdbGen\_Queue::\_[1madd\_0m [134] - sending event to :TdbRepositoryManager  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mhandle\_0m [974] - Received TdbGen\_Event event type: CHANGE  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.common.TdbGen\_Queue::\_[1madd\_0m [134] - sending event to :PartialTdbGenServer  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.server.PartialTdbGenServer::\_[1mhandle\_0m [598] - Received TdbGen\_Event event type: CHANGE  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.common.TdbGen\_Queue::\_[1madd\_0m [134] - sending event to :TdbChangeDetectionAndUpdateGenerator  
DataElement changes, - Setting BlackboardController goals  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::\_[1mrunControllerProcess\_0m [218] -

=====> Running BlackboardController process <=====

Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mrun\_0m [419] - Controller: run  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mcheckForKnowledgeSourceContribution\_0m [86] - Controller: ask all registered  
KS for contributions  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mcheckForKnowledgeSourceContribution\_0m [306] - Agent: Factory posting  
capability: : LoadGeoScratchPadCells to task panel as its contained in preconditions:  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mcheckForKnowledgeSourceContribution\_0m [306] - Agent: Factory posting  
capability: : CellOntologyExists to task panel as its contained in preconditions:  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayTasksAndDataPanels\_0m [356] - DATA PANEL (count=9)  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayTasksAndDataPanels\_0m [373] -

DATA PANEL

- =====
- \*1. name: CheckTdbRepoOntology, type: Goal, confidence: None  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(false) | ]  
actions: CheckTdbRepoOntology, outputs: [CellOntologyExists, DataElementOntologyExists]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  - \*2. name: CreateCellAgents, type: Goal, confidence: None  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(false) | subject(CellOntologyExists) ^ predicate (And) -> object(false) | ]  
actions: CreateCellAgents, outputs: [CreateCellAgents]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  - \*3. name: CreateDataElementAgents, type: Goal, confidence: None  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(false) | subject(CellOntologyExists) ^ predicate (And) -> object(false) | subject(CreateCellAgents) ^ predicate (And) -> object(false) | ]  
actions: CreateDataElementAgents, outputs: [CreateDataElementAgents]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

- \*4. name: RunDataElementIntegrityTest, type: Goal, confidence: None  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(false) | subject(CellOntologyExists) ^ predicate (And) -> object(false) | subject(CreateCellAgents) ^ predicate (And) -> object(false) | subject(DataElementOntologyExists) ^ predicate (And) -> object(false) | subject(CreateDataElementAgents) ^ predicate (And) -> object(false) | ]  
actions: RunDataElementIntegrityTest, outputs: [GeoScratchPadLayerIntegrityOK, RegenRelatedDataElements]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
- \*5. name: RegenDependentDataElements, type: Goal, confidence: None  
preconditions: [subject(CreateCellAgents) ^ predicate (And) -> object(false) | subject(CreateDataElementAgents) ^ predicate (And) -> object(false) | subject(RegenRelatedDataElements) ^ predicate (And) -> object(false) | ]  
actions: RegenRelatedDataElements, outputs: [RunDataElementIntegrityTest]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
- \*6. name: RunCorrelation, type: Goal, confidence: None  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(false) | subject(CreateCellAgents) ^ predicate (And) -> object(false) | subject(CreateDataElementAgents) ^ predicate (And) -> object(false) | subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(false) | ]  
actions: RunDataElementCorrelation, outputs: [DataElementsCorrelated, RegenGSPDataElement]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
- \*7. name: RegenDataElementsAfterCorrFailure, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(RegenGSPDataElement) ^ predicate (And) -> object(false) | ]  
actions: RegenGSPDataElement, outputs: [RunDataElementIntegrityTest, GeoScratchPadLayerIntegrityOK]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
- \*8. name: RegenGeoScratchPadCells, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(false) | subject(RegenGSPDataElement) ^ predicate (And) -> object(false) | subject(RegenGSPCells) ^ predicate (And) -> object(false) | ]  
actions: RegenGSPCells, outputs: [RunDataElementCorrelation, DataElementsCorrelated]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
- \*9. name: RunCellCorrelation, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(false) | subject(DataElementsCorrelated) ^ predicate (And) -> object(false) | ]  
actions: RunCellCorrelation, outputs: [GeoScratchPadCorrelated]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::[\_1mdisplayTasksAndDataPanels\_[0m [377] - TASK PANEL (count=2)  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::[\_1mdisplayTasksAndDataPanels\_[0m [388] - TASKS

- 0. name: Factory, type: Task, priority: 1, \_ks: Factory, task: LoadGeoScratchPadCells
- 1. name: Factory, type: Task, priority: 1, \_ks: Factory, task: CellOntologyExists

Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::[\_1mmakeKnowlegeSourceContribution\_[0m [146] - Controller: reviews and selects KS based on proposed contribution  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::[\_1mmakeKnowlegeSourceContribution\_[0m [399] -

=====> Agent: Factory  
Executing the proposed contribution Function: LoadGeoScratchPadCells

Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.FactoryAgent\$FactoryLoadGeospatialScratchPad::\_[1mrun\_0m [134] - =====> READING - TDB repository data into Geospatial Scratch Pad  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.agents.FactoryAgent::\_[1mreadTerrain\_0m [245] - \*\*\*TODO\*\*\* - FactoryAgent -- readTerrain NOT IMPLEMENTED.  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.FactoryAgent\$FactoryLoadGeospatialScratchPad::\_[1mrun\_0m [138] - =====> terrain loaded into GeoScratchPad <<< NOT IMPLEMENTED >>>  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mreadFeatures\_0m [831] - Reading TDB repository features, please wait this may take some time.  
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mreadFeatures\_0m [846] - Processing - tdbFormat: OTF  
Classifying 125 elements

Classifying: 0% complete in 00:00  
Classifying: 1% complete in 00:00  
...  
Classifying: 98% complete in 03:38  
Classifying: 99% complete in 03:41  
Classifying: 100% complete in 03:41  
Classifying finished in 03:41

Aug 4, 2011 3:50:24 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mmapLabelToOntologyClass\_0m [717] - Mapping for catalog: Edcs label: BUILDING is ontology class: namespace: http://localhost/ontologies/TDBConstructiveOTF.owl#, name: OTFPBuilding  
Aug 4, 2011 3:50:24 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mreadFeatures\_0m [846] - Processing - tdbFormat: LTF  
Aug 4, 2011 3:50:37 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mmapLabelToOntologyClass\_0m [717] - Mapping for catalog: Other label: Building Wall is ontology class: namespace: http://localhost/ontologies/TDBLiveLTF.owl#, name: LTFPrismBuildingWall  
Aug 4, 2011 3:50:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mmapLabelToOntologyClass\_0m [717] - Mapping for catalog: Other label: Tree Trunk is ontology class: namespace: http://localhost/ontologies/TDBLiveLTF.owl#, name: LTFCylinderTreeTrunk  
Aug 4, 2011 3:50:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mmapLabelToOntologyClass\_0m [717] - Mapping for catalog: Other label: Tree Foliage is ontology class: namespace: http://localhost/ontologies/TDBLiveLTF.owl#, name: LTFCylinderTreeFoliage  
Aug 4, 2011 3:50:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mreadFeatures\_0m [846] - Processing - tdbFormat: FLT  
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mmapLabelToOntologyClass\_0m [717] - Mapping for catalog: Face label: AL015 is ontology class: namespace: http://localhost/ontologies/TDBVirtualFLT.owl#, name: FLTEExtRefModelBuilding  
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mmapLabelToOntologyClass\_0m [717] - Mapping for catalog: Face label: AQ040 is ontology class: namespace: http://localhost/ontologies/TDBVirtualFLT.owl#, name: FLTEExtRefModelBridge  
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.FactoryAgent\$FactoryLoadGeospatialScratchPad::\_[1mrun\_0m [142] - =====> features loaded into GeoScratchPad  
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.FactoryAgent\$FactoryLoadGeospatialScratchPad::\_[1mrun\_0m [144] - =====> Loading Changed DataElements into Geospatial Scratch Pad  
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.GeospatialScratchPad::\_[1mgetLayer\_0m [164] - Looking for layer geom type: Point, source TDB format: OTF  
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.GeospatialScratchPad::\_[1mgetLayer\_0m [172] - found layer geom type: Point, source TDB format: OTF  
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.FactoryAgent::\_[1mloadChangedDataElement\_0m [363] - Adding changed DataElements to GeoScratchPad.  
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.FactoryAgent::\_[1mloadChangedDataElement\_[0m [378] - Found changed DataElements on GeoScratchPad, updating attributes and transferring to changed layer.  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
 SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_[0mdpbtbrgen.services.geoscratchpad.DataElement::\_[1mupdate\_[0m [328] - \*\*\* PARTIAL IMPLEMENTATION \*\*\*  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: TERRAIN\_TRAFFICABILITY\_MEDIUM new value: ID\_20  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: GENERAL\_DAMAGE\_FRACTION new value: 7.0  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: TERRAIN\_TRAFFICABILITY\_COARSE new value: DEFAULT  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: TERRAIN\_TRAFFICABILITY\_FINE new value: ID\_0  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: DEPTH\_BELOW\_SURFACE\_LEVEL new value: 0.0  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: HEIGHT\_ABOVE\_SURFACE\_LEVEL new value: 5.0  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: ORIENTATION\_ANGLE new value: 0.0  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: BUILDING\_FUNCTION new value: HOUSE  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: ILLUMINANCE new value: 1.0  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: PRIMARY\_PRODUCT new value: NO\_PRODUCT  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: LENGTH new value: 15.0  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: PREPARED\_EXPLOSIVE\_DESTRUCTION\_COMPLETION\_FRACTION new value: 0.0  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes::\_[1mupdate\_[0m [171] - Updated attribute name: USAGE new value: NON\_MILITARY  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.geoscratchpad.GeospatialScratchPad::\_[1mremoveDataElement\_[0m [222] - Removing DataElement: 9c6d352c4ca211e08459002421a8c4c6 from layer: OTF\_FEATURES-Point  
 Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
 INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mmakeKnowledgeSourceContribution\_[0m [399] -

=====> Agent: Factory  
 Executing the proposed contribution Function: CellOntologyExists

Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
 SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_[0mdpbtbrgen.services.agents.FactoryAgent\$FactoryCheckOntology::\_[1mrun\_[0m [215] - =====> MAPPED - CHECK ONTOLOGY FUNCTION <<NEED IMPLEMENTATION>>  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
 INFO: dpbtbrgen.services.agents.FactoryAgent\$FactoryCheckOntology::\_[1mrun\_[0m [217] - =====> Setting CheckEdbOntology, Cell and DataElement ontologies exist -- force Cell and DataElement creation  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
 INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_[0m [343] - Updating capability: CheckTdbRepoOntology state based on action results. confidence: High All preconditions will be updated as well.  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine



INFO: dpbtbrgen.services.agents.BlackboardController::[\_1mcheckForKnowledgeSourceContribution\_]0m [86] - Controller: ask all registered KS for contributions  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
 INFO: dpbtbrgen.services.agents.KnowledgeSource::[\_1mcheckForKnowledgeSourceContribution\_]0m [273] - Agent: Factory posting capability to task panel: CreateCellAgents  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
 INFO: dpbtbrgen.services.agents.BlackboardController::[\_1mdisplayTasksAndDataPanels\_]0m [356] - DATA PANEL (count=9)  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
 INFO: dpbtbrgen.services.agents.BlackboardController::[\_1mdisplayTasksAndDataPanels\_]0m [373] -

DATA PANEL

- ```
=====
```
1. name: CheckTdbRepoOntology, type: Goal, confidence: High  
 preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | ]  
 actions: CheckTdbRepoOntology, outputs: [CellOntologyExists, DataElementOntologyExists]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
  - \*2. name: CreateCellAgents, type: Goal, confidence: None  
 preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -> object(true) | ]  
 actions: CreateCellAgents, outputs: [CreateCellAgents]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
  - \*3. name: CreateDataElementAgents, type: Goal, confidence: None  
 preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(false) | ]  
 actions: CreateDataElementAgents, outputs: [CreateDataElementAgents]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
  - \*4. name: RunDataElementIntegrityTest, type: Goal, confidence: None  
 preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(false) | subject(DataElementOntologyExists) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(false) | ]  
 actions: RunDataElementIntegrityTest, outputs: [GeoScratchPadLayerIntegrityOK, RegenRelatedDataElements]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
  - \*5. name: RegenDependentDataElements, type: Goal, confidence: None  
 preconditions: [subject(CreateCellAgents) ^ predicate (And) -> object(false) | subject(CreateDataElementAgents) ^ predicate (And) -> object(false) | subject(RegenRelatedDataElements) ^ predicate (And) -> object(false) | ]  
 actions: RegenRelatedDataElements, outputs: [RunDataElementIntegrityTest]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
  - \*6. name: RunCorrelation, type: Goal, confidence: None  
 preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(false) | subject(CreateDataElementAgents) ^ predicate (And) -> object(false) | subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(false) | ]  
 actions: RunDataElementCorrelation, outputs: [DataElementsCorrelated, RegenGSPDataElement]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
  - \*7. name: RegenDataElementsAfterCorrFailure, type: Goal, confidence: None  
 preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(RegenGSPDataElement) ^ predicate (And) -> object(false) | ]  
 actions: RegenGSPDataElement, outputs: [RunDataElementIntegrityTest, GeoScratchPadLayerIntegrityOK]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

\*8. name: RegenGeoScratchPadCells, type: Goal, confidence: None  
 preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(false) | subject(RegenGSPDataElement) ^ predicate (And) -> object(false) | subject(RegenGSPCells) ^ predicate (And) -> object(false) | ]  
 actions: RegenGSPCells, outputs: [RunDataElementCorrelation, DataElementsCorrelated]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

\*9. name: RunCellCorrelation, type: Goal, confidence: None  
 preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(false) | subject(DataElementsCorrelated) ^ predicate (And) -> object(false) | ]  
 actions: RunCellCorrelation, outputs: [GeoScratchPadCorrelated]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
 INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayTasksAndDataPanels\_[0m [377] - TASK PANEL (count=1)  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
 INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayTasksAndDataPanels\_[0m [388] - TASKS

0. name: Factory, type: Task, priority: 1, \_ks: Factory, task: CreateCellAgents

Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
 INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mmakeKnowlegeSourceContribution\_[0m [146] - Controller: reviews and selects KS based on proposed contribution  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
 INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mmakeKnowlegeSourceContribution\_[0m [399] -

=====> Agent: Factory  
 Executing the proposed contribution Function: CreateCellAgents

Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.agents.FactoryAgent\$FactoryCreateCellAgents::\_[1mrun\_[0m [174] - =====> CREATING CELL AGENTS ... generating agents for all changed DataElements  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
 SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_[0mdpbtbrgen.services.agents.FactoryAgent::\_[1mcreateCellAgents\_[0m [416] - =====>>> DEBUG different TDB cell agents (OTF, LTF, FLT) for the: 4 layers >>>  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.agents.FactoryAgent::\_[1mcreateCellAgents\_[0m [436] - Creating OTF CellAgents for layer: OTF\_FEATURES-Point  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.agents.CellAgent::\_[1minitialize\_[0m [152] - CellAgents initialized for layer: OTF\_FEATURES-Point, ontology name: OTF\_ONTOLOGY  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.agents.FactoryAgent::\_[1mcreateCellAgents\_[0m [439] - Creating LTF CellAgents for layer: LTF\_FEATURES-PRISM  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.agents.CellAgent::\_[1minitialize\_[0m [152] - CellAgents initialized for layer: LTF\_FEATURES-PRISM, ontology name: LTF\_ONTOLOGY  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.agents.FactoryAgent::\_[1mcreateCellAgents\_[0m [439] - Creating LTF CellAgents for layer: LTF\_FEATURES-CYLINDER  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.agents.CellAgent::\_[1minitialize\_[0m [152] - CellAgents initialized for layer: LTF\_FEATURES-CYLINDER, ontology name: LTF\_ONTOLOGY  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.agents.FactoryAgent::\_[1mcreateCellAgents\_[0m [442] - Creating FLT CellAgents for layer: FLT\_FEATURES-EXTREF\_MODEL  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.CellAgent::\_[1initialize\_][0m [152] - CellAgents initialized for layer: FLT\_FEATURES-EXTREF\_MODEL, ontology name: FLT\_ONTOLOGY  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
 SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_][0mdpbtbrgen.services.agents.FactoryAgent::\_[1mcreateCellAgents\_][0m [460] - Created: 5 CellAgents for processing of this change.  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
 INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_][0m [343] - Updating capability: CreateCellAgents state based on action results. confidence: High All preconditions will be updated as well.  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
 INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_][0m [343] - Updating capability: CheckTdbRepoOntology state based on action results. confidence: High All preconditions will be updated as well.  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
 INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mcheckForKnowledgeSourceContribution\_][0m [86] - Controller: ask all registered KS for contributions  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
 INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mcheckForKnowledgeSourceContribution\_][0m [273] - Agent: CellAgent-OTF-Point posting capability to task panel: CreateDataElementAgents  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
 INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mcheckForKnowledgeSourceContribution\_][0m [273] - Agent: CellAgent-LTF-PRISM posting capability to task panel: CreateDataElementAgents  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
 INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mcheckForKnowledgeSourceContribution\_][0m [273] - Agent: CellAgent-LTF-CYLINDER posting capability to task panel: CreateDataElementAgents  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
 INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mcheckForKnowledgeSourceContribution\_][0m [273] - Agent: CellAgent-FLT-EXTREF\_MODEL posting capability to task panel: CreateDataElementAgents  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
 INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayTasksAndDataPanels\_][0m [356] - DATA PANEL (count=9)  
 Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
 INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayTasksAndDataPanels\_][0m [373] -

DATA PANEL

- ```
=====
```
1. name: CheckTdbRepoOntology, type: Goal, confidence: High  
 preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | ]  
 actions: CheckTdbRepoOntology, outputs: [CellOntologyExists, DataElementOntologyExists]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
  2. name: CreateCellAgents, type: Goal, confidence: High  
 preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -> object(true) | ]  
 actions: CreateCellAgents, outputs: [CreateCellAgents]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
  - \*3. name: CreateDataElementAgents, type: Goal, confidence: None  
 preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(true) | ]  
 actions: CreateDataElementAgents, outputs: [CreateDataElementAgents]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
  - \*4. name: RunDataElementIntegrityTest, type: Goal, confidence: None  
 preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(DataElementOntologyExists) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(false) | ]  
 actions: RunDataElementIntegrityTest, outputs: [GeoScratchPadLayerIntegrityOK, RegenRelatedDataElements]  
 changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

- \*5. name: RegenDependentDataElements, type: Goal, confidence: None  
preconditions: [subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(false) | subject(RegenRelatedDataElements) ^ predicate (And) -> object(false) | ]  
actions: RegenRelatedDataElements, outputs: [RunDataElementIntegrityTest]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
- \*6. name: RunCorrelation, type: Goal, confidence: None  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(false) | subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(false) | ]  
actions: RunDataElementCorrelation, outputs: [DataElementsCorrelated, RegenGSPDataElement]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
- \*7. name: RegenDataElementsAfterCorrFailure, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(RegenGSPDataElement) ^ predicate (And) -> object(false) | ]  
actions: RegenGSPDataElement, outputs: [RunDataElementIntegrityTest, GeoScratchPadLayerIntegrityOK]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
- \*8. name: RegenGeoScratchPadCells, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(false) | subject(RegenGSPDataElement) ^ predicate (And) -> object(false) | subject(RegenGSPCells) ^ predicate (And) -> object(false) | ]  
actions: RegenGSPCells, outputs: [RunDataElementCorrelation, DataElementsCorrelated]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
  
- \*9. name: RunCellCorrelation, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(false) | subject(DataElementsCorrelated) ^ predicate (And) -> object(false) | ]  
actions: RunCellCorrelation, outputs: [GeoScratchPadCorrelated]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[IdisplayTasksAndDataPanels\_[0m [377] - TASK PANEL (count=4)  
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[IdisplayTasksAndDataPanels\_[0m [388] - TASKS

- 0. name: CellAgent-OTF-Point, type: Task, priority: 1, \_ks: CellAgent-OTF-Point, task: CreateDataElementAgents
- 1. name: CellAgent-LTF-PRISM, type: Task, priority: 1, \_ks: CellAgent-LTF-PRISM, task: CreateDataElementAgents
- 2. name: CellAgent-LTF-CYLINDER, type: Task, priority: 1, \_ks: CellAgent-LTF-CYLINDER, task: CreateDataElementAgents
- 3. name: CellAgent-FLT-EXTREF\_MODEL, type: Task, priority: 1, \_ks: CellAgent-FLT-EXTREF\_MODEL, task: CreateDataElementAgents

Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[ImakeKnowledgeSourceContribution\_[0m [146] - Controller: reviews and selects KS based on proposed contribution  
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[ImakeKnowledgeSourceContribution\_[0m [399] -

=====> Agent: CellAgent-OTF-Point  
Executing the proposed contribution Function: CreateDataElementAgents

Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[IreviewDataPanel\_[0m [166] - =====> Check DataPanel for the creation of correlated DataElements., Cell: CellAgent-OTF-Point  
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

```

INFO: dpbtbrgen.services.agents.CellAgent$CreateDataElementsAgentsFunction::_[1mrun_[0m [273] -      ==> Creating DataElement
Agents --
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [313] - =====> CellAgent: CellAgent-
OTF-Point creating DataElement Agents for layer: OTF_FEATURES-Point
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [328] - Layer format: OTF
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [339] - <1> Creating DataElementAgents for all changed
DataElements
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [442] - Found: 1 DataElements on layer:
OTF_FEATURES-Point
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [444] - Creating DataElementAgents for all changed
DataElements
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_[0m [247] - Point: extents      sw: Geodetic: lat 34.891128 lon -
117.022169 Deg      ne: Geodetic: lat 34.891683 lon -117.021614 Deg
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_[0m [367] - Point: data - Geodetic: lat 34.891406 lon -
117.021892 Deg
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [452] -
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.DataElement
{
    [label] BUILDING
    [format] OTF
    [unique id] 9c6d352c4ca211e08459002421a8c4c6
    [extents] ...
    sw: Geodetic: lat 34.891128 lon -117.022169 Deg      ne: Geodetic: lat 34.891683 lon -117.021614 Deg
    [geometry] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Geometry
{
    type: Point
    coordType: GDC
    extents:      sw: Geodetic: lat 34.891128 lon -117.022169 Deg      ne: Geodetic: lat 34.891683 lon -117.021614 Deg
    point data: Geodetic: lat 34.891406 lon -117.021892 Deg
}
    [attributes] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.Integer, name: NUMERIC_OBJECT_IDENTIFIER, value: 0
    Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_DOOR_PRI_WIDTH, value: 6.0
    Attribute - type: class java.lang.String, name: WALL_PREDOMINANT_SURFACE_MATERIAL, value: MASONRY
    Attribute - type: class java.lang.String, name: REGIONAL_STYLE, value: MODERN_INDUSTRIAL_CONSTRUCTION
    Attribute - type: class java.lang.Double, name: EMISSIVITY_QB_EM_BAND_AND_BUILDING_COMPONENT_TYPE, value: 0.0
    Attribute - type: class java.lang.Integer, name: COMPLEX_COMPONENT_IDENTIFIER, value: 0
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_FINE, value: ID_0
    Attribute - type: class java.lang.String, name: SNOW_ACCUMULATION, value: NONE_PRESENT
    Attribute - type: class java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0
    Attribute - type: class java.lang.String, name: BUILDING_CONSTRUCTION_TYPE, value: BRICK_CLAD_STEEL_FRAME
    Attribute - type: class java.lang.String, name: ROOF_SHAPE, value: FLAT
    Attribute - type: class java.lang.Double, name: ORIENTATION_ANGLE, value: 0.0
    Attribute - type: class java.lang.String, name: SOURCE, value: MISSING
    Attribute - type: class java.lang.String, name: ROOF_PREDOMINANT_SURFACE_MATERIAL, value: CONGLOMERATE
    Attribute - type: class java.lang.String, name: LIGHTING_CHARACTERIZATION, value: DIMLY_LIT
    Attribute - type: class java.lang.Double, name: OVERALL_VERTICAL_DIMENSION, value: 0.0
    Attribute - type: class java.lang.String, name: UNIVERSALLY_UNIQUE_ID, value: 9c6d352c4ca211e08459002421a8c4c6
    Attribute - type: class java.lang.String, name: FRONT_AND_AXIS_REFERENCE, value: POSITIVE_X
    Attribute - type: class java.lang.String, name: POINT_OBJECT_TYPE, value: VERT_STRUCTURE
    Attribute - type: class java.lang.Double, name: ILLUMINANCE, value: 1.0
    Attribute - type: class java.lang.String, name: PRIMARY_PRODUCT, value: NO_PRODUCT

```

```

0.0 Attribute - type: class java.lang.Double, name: PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION, value:
Attribute - type: class java.lang.Double, name: LENGTH, value: 15.0
Attribute - type: class java.lang.String, name: USAGE, value: NON_MILITARY
Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_MEDIUM, value: ID_20
Attribute - type: class java.lang.Double, name: ROOF_LOAD_BEARING_CAPACITY, value: 2.5
Attribute - type: class java.lang.String, name: NAME, value:
Attribute - type: class java.lang.Double, name: GENERAL_DAMAGE_FRACTION, value: 7.0
Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_COARSE, value: DEFAULT
Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_AREA, value: 0.0
Attribute - type: class java.lang.String, name: COLOURATION, value: BROWN
Attribute - type: class java.lang.Double, name: EXTERIOR_WALL_THICKNESS, value: 0.25
Attribute - type: class java.lang.Boolean, name: LADDER_PRESENT, value: true
Attribute - type: class java.lang.String, name: COMBUSTION_STATE, value: NOT_BURNING
Attribute - type: class java.lang.String, name: PRIMARY_ENTRANCE_LOCATION, value: FRONT_CENTRE_ON_GRADE
Attribute - type: class java.lang.Integer, name: ANTENNA_COUNT, value: 0
Attribute - type: class java.lang.Double, name: DEPTH_BELOW_SURFACE_LEVEL, value: 0.0
Attribute - type: class java.lang.Double, name: WIDTH, value: 13.0
Attribute - type: class java.lang.String, name: ROOF_PREDOMINANT_PATTERN, value: MOTTLED
Attribute - type: class java.lang.String, name: WALL_PREDOMINANT_PATTERN, value: BRICK
Attribute - type: class java.lang.Double, name: SURFACE_TEMPERATURE_QB_BUILDING_COMPONENT_TYPE, value: 15.0
Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_DOOR_PRI_HEIGHT, value: 3.0
Attribute - type: class java.lang.String, name: BUILDING_FUNCTION, value: HOUSE
Attribute - type: class java.lang.Integer, name: OBJECT_VARIANT, value: 0
}
ontology class info: namespace: http://localhost/ontologies/TDBConstructiveOTF.owl#, name: OTFPBuilding
layerName: OTF_FEATURES
}

```

```

Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_][0m [453] - Considering DataElement uniqueId:
9c6d352c4ca211e08459002421a8c4c6
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_][0m [467] - ==> ADDING changed or inconsistent
DataElement Agent: BUILDING
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgent_][0m [1044] - Created point DataElement Agent for layer:
OTF_FEATURES-Point
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mmapLabelToOntologyClass_][0m [717] - Mapping for catalog: Edcs
label: BUILDING is ontology class: namespace: http://localhost/ontologies/TDBConstructiveOTF.owl#, name: OTFPBuilding
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_][0m [367] - Point: data - Geodetic: lat 34.891406 lon -
117.021892 Deg
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_][0m [367] - Point: data - Geodetic: lat 34.891406 lon -
117.021892 Deg
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation
SEVERE: _[35m***[LIMITATION]***_][0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mgetTDBName_][0m [1082] -
Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon -
117.021892 Deg
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_][0m [523] - DataElement ontology namespace:
http://localhost/ontologies/TDB-OTF-myNTC_terrain_database.owl#
Aug 4, 2011 3:51:23 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetDependentDataElementsUniqueIdentifiers_][0m [422] - Looking for
dependent DataElement for individual: OTF-OTFPBuilding-658244779
Realizing 125 elements

Realizing: 0% complete in 00:00
Realizing: 1% complete in 00:00
Realizing: 2% complete in 00:00
Realizing: 3% complete in 00:00

```

Realizing: 4% complete in 00:00  
 Realizing: 5% complete in 00:00  
 ...  
 Realizing: 95% complete in 00:02  
 Realizing: 96% complete in 00:02  
 Realizing: 97% complete in 00:02  
 Realizing: 98% complete in 00:02  
 Realizing: 100% complete in 00:00  
 Realizing finished in 03:43  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
 SEVERE: [35m\*\*\*[WARNING]\*\*\*\_0mdpbtbrgen.services.agents.CellAgent::\_[1mcreateChangedDataElementAgents\_0m [534] - no dependentDataElementUniqueIdentifiers are available.  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateChangedDataElementAgents\_0m [552] - Extracting correlated individual information from ontology  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
 SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
 SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterrogator::\_[1mgetCorrelatedToDataElementsFromIndividual\_0m [3730] - DONE extracting number of correlated DataElements unique ids: 2  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateChangedDataElementAgents\_0m [581] - Looking for unique id for correlated individual: LTF-LTFPrismBuildingWall-1835992364, using namespace: http://localhost/ontologies/TDB-LTF-c7\_textured.owl#  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterrogator::\_[1mgetUniqueIdentifierFromIndividual\_0m [4039] - DataElement individual - namespace: http://localhost/ontologies/TDB-LTF-c7\_textured.owl#, name: LTF-LTFPrismBuildingWall-1835992364  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterrogator::\_[1mgetUniqueIdentifierFromIndividual\_0m [4044] - DataElement class - namespace: http://localhost/ontologies/TDBStructure.owl#, name: DataElement  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterrogator::\_[1mgetUniqueIdentifierFromIndividual\_0m [4061] - ==> uniqueIdentifier individual:http://localhost/ontologies/TDB-LTF-c7\_textured.owl#UID-LTF-LTF\_0X0X0\_1931  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterrogator::\_[1mgetUniqueIdentifierFromIndividual\_0m [4070] - ==> unique identifier:LTF\_0X0X0\_1931  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetUniqueIdentifierFromIndividual\_0m [1109] - Extracted for individual: http://localhost/ontologies/TDB-LTF-c7\_textured.owl#LTF-LTFPrismBuildingWall-1835992364 the unique identifier: LTF\_0X0X0\_1931  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateChangedDataElementAgents\_0m [590] - unique id: LTF\_0X0X0\_1931  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateChangedDataElementAgents\_0m [593] - Adding correlated unique id: LTF\_0X0X0\_1931  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
 INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateChangedDataElementAgents\_0m [581] - Looking for unique id for correlated individual: FLT-FLTExtRefModelBuilding-1733339979, using namespace: http://localhost/ontologies/TDB-FLT-myNtc.owl#  
 Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtdbrgen.services.ontology.OntologySparqIDLInterogator::\_[1mgetUniqueIdentifierFromIndividual\_[0m [4039] - DataElement individual - namespace: http://localhost/ontologies/TDB-FLT-myNtc.owl#, name: FLT-FLTExtRefModelBuilding-1733339979  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqIDLInterogator::\_[1mgetUniqueIdentifierFromIndividual\_[0m [4044] - DataElement class - namespace: http://localhost/ontologies/TDBStructure.owl#, name: DataElement  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqIDLInterogator::\_[1mgetUniqueIdentifierFromIndividual\_[0m [4061] -  
====> uniqueIdentifier individual:http://localhost/ontologies/TDB-FLT-myNtc.owl#UID-FLT-FLT\_0X0\_-5941746916707185650  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqIDLInterogator::\_[1mgetUniqueIdentifierFromIndividual\_[0m [4070] -  
====> unique identifier:FLT\_0X0\_-5941746916707185650  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetUniqueIdentifierFromIndividual\_[0m [1109] - Extracted for individual: http://localhost/ontologies/TDB-FLT-myNtc.owl#FLT-FLTExtRefModelBuilding-1733339979 the unique identifier: FLT\_0X0\_-5941746916707185650  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mcreateChangedDataElementAgents\_[0m [590] - unique id: FLT\_0X0\_-5941746916707185650  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mcreateChangedDataElementAgents\_[0m [593] - Adding correlated unique id: FLT\_0X0\_-5941746916707185650  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mcreateChangedDataElementAgents\_[0m [611] - ====> Posting list of correlated DataElement to DataPanel  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mupdateDataPanel\_[0m [203] - Updating DataPanel with dependent / correlated and potentially inconsistent DataElements.  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mupdateDataPanel\_[0m [219] - Found dependent/correlated DataElements (2), posting to DataPanel.  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mupdateDataPanel\_[0m [221] - \_dependentDataElements:  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mupdateDataPanel\_[0m [223] - , id: [LTF\_0X0X0\_1931, FLT\_0X0\_-5941746916707185650]  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mupdateDataPanel\_[0m [223] - , id: [LTF\_0X0X0\_1931, FLT\_0X0\_-5941746916707185650]  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mupdateDataPanel\_[0m [224] -  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.blackboard.BlackBoardDataPanel::\_[1mpost\_[0m [53] - DataItem contains dependent/correlated DataElements  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_[0m [345] - Number of created DataElementAgents: 1 Found - dependent unique ids: [] - correlated ontology unique ids: [LTF\_0X0X0\_1931, FLT\_0X0\_-5941746916707185650]  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_[0m [352] - <2> Creating DataElementAgents for dependent DataElements  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mcreateDependentDataElementAgents\_[0m [720] - No dependent DataElement exit for change DataElement. No processing necessary.  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_[0m [358] - Created : 0 dependent DataElementAgents out of 0 dependent DataElements. There is (0) dependent DataElement on other cells / layers.  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_[0m [363] - <3> Creating DataElementAgents for all correlated DataElements on this cell.  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_[0m [367] - Point: data - Geodetic: lat 34.891406 lon -117.021892 Deg  
Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_[0mdpbdbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_[0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon -117.021892 Deg



Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::[\_1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [\_35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::[\_1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::[\_1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterrogator::[\_1mgetCorrelatedToDataElementsFromIndividual\_0m [3730] - DONE extracting number of correlated DataElements unique ids: 2

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::[\_1mcreateCorrelatedDataElementsAgents\_0m [794] -

====> Looking for isCorrelatedTo DataElements on this layer (OTF\_FEATURES-Point) for the changed individual:  
[http://localhost/ontologies/TDB-OTF-myNTC\\_terrain\\_database.owl#OTF-OTFPBuilding-658244779](http://localhost/ontologies/TDB-OTF-myNTC_terrain_database.owl#OTF-OTFPBuilding-658244779)

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::[\_1mloopThroughListOfIndividualsAndCreateDataElements\_0m [922] - looking for isCorrelatedTo DataElement individual: LTF-LTFPrismBuildingWall-1835992364

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::[\_1mloopThroughListOfIndividualsAndCreateDataElements\_0m [930] - considering this cell DataElement: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::[\_1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [\_35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::[\_1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::[\_1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [\_35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::[\_1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::[\_1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::[\_1mloopThroughListOfIndividualsAndCreateDataElements\_0m [935] - DataElement individual: [http://localhost/ontologies/TDB-OTF-myNTC\\_terrain\\_database.owl#OTF-OTFPBuilding-658244779](http://localhost/ontologies/TDB-OTF-myNTC_terrain_database.owl#OTF-OTFPBuilding-658244779)

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::[\_1mloopThroughListOfIndividualsAndCreateDataElements\_0m [922] - looking for isCorrelatedTo DataElement individual: FLT-FLTExtRefModelBuilding-1733339979

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::[\_1mloopThroughListOfIndividualsAndCreateDataElements\_0m [930] - considering this cell DataElement: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::[\_1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [\_35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::[\_1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::[\_1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0m]dpbtdbrgen.services.tdbrepository.TdbRepositoryManager::\_[1m]getTDBName\_[0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon -117.021892 Deg

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.ontology.OntologyRepositoryManager::\_[1m]getDataElementFromUniqueIdentifier\_[0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]loopThroughListOfIndividualsAndCreateDataElements\_[0m [935] - DataElement individual: http://localhost/ontologies/TDB-OTF-myNTC\_terrain\_database.owl#OTF-OTFPBuilding-658244779

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]createCorrelatedDataElementsAgents\_[0m [807] - correlated DataElement(s) unique ids exist (2) which are not part of this cell. Creating list of DataPanel update.

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]updateDataPanel\_[0m [203] - Updating DataPanel with dependent / correlated and potentially inconsistent DataElements.

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]updateDataPanel\_[0m [219] - Found dependent/correlated DataElements (2), posting to DataPanel.

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]updateDataPanel\_[0m [221] - \_dependentDataElements:

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]updateDataPanel\_[0m [223] - , id: [LTF-LTFPrismBuildingWall-1835992364, FLT-FLTextRefModelBuilding-1733339979]

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]updateDataPanel\_[0m [223] - , id: [LTF-LTFPrismBuildingWall-1835992364, FLT-FLTextRefModelBuilding-1733339979]

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]updateDataPanel\_[0m [224] -

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.blackboard.BlackBoardDataPanel::\_[1m]post\_[0m [53] - DataItem contains dependent/correlated DataElements

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]createCorrelatedDataElementsAgents\_[0m [828] - done

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]createDataElementAgents\_[0m [368] - Created : 0 correlated DataElementAgents.

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]createDataElementAgents\_[0m [372] - <4> Creating DataElementAgents for all dependent correlated DataElements of this cell

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]createDependentCorrelatedDataElementsAgents\_[0m [859] - Looking for correlated DataElement for 0 dependent DataElement

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]createDataElementAgents\_[0m [376] - Created : 0 dependent correlated DataElementAgents.

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]createDataElementAgents\_[0m [388] - Cell extents: sw: Geodetic: lat 34.891128 lon -117.022169 Deg ne: Geodetic: lat 34.891683 lon -117.021614 Deg

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
 INFO: dpbtdbrgen.services.agents.CellAgent::\_[1m]createDataElementAgents\_[0m [392] -

=====> DONE , Cell: CellAgent-OTF-Point Layer: OTF\_FEATURES-Point, Done creating DataElementsAgents. Total number of agents created: 1

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info  
 INFO: dpbtdbrgen.services.blackboard.BlackBoardDataItem::\_[1m]updateAction\_[0m [343] - Updating capability: CreateDataElementAgents state based on action results. confidence: High All preconditions will be updated as well.

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info  
 INFO: dpbtdbrgen.services.agents.KnowledgeSource::\_[1m]makeKnowledgeSourceContribution\_[0m [399] -

=====> Agent: CellAgent-LTF-PRISM  
 Executing the proposed contribution Function: CreateDataElementAgents

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_[0m [166] - =====> Check DataPanel for the creation of correlated DataElements., Cell: CellAgent-LTF-PRISM

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_[0m [172] - Found dependent DataElements on DataPanel see if any needs to be created.

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_[0m [173] - dependentDataElements:  
Dependent DataElements  
    unique id: LTF\_0X0X0\_1931  
    unique id: FLT\_0X0\_-5941746916707185650  
    unique id: LTF-LTFPrismBuildingWall-1835992364  
    unique id: FLT-FLTEExtRefModelBuilding-1733339979

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1292] - =====> CellAgent: CellAgent-LTF-PRISM flagging dependent DataElement as inconsistent on layer: LTF\_FEATURES-PRISM

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1308] - Layer format: LTF

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1311] - Found: 1 DataElements on layer: LTF\_FEATURES-PRISM

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1319] - considering DataElement uniqueId: LTF\_0X0X0\_1931

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataPanel::\_[1mcontainsDependentDataElements\_[0m [283] - Found dependent DataElement unique ids

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1322] - DataPanel contains uniqueId: LTF\_0X0X0\_1931 setting DataElement state to inconsistent.

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1328] - Done, submitting: 1 dependent DataElement Agents

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent\$CreateDataElementsAgentsFunction::\_[1mrun\_[0m [273] - =====> Creating DataElement Agents --

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_[0m [313] - =====> CellAgent: CellAgent-LTF-PRISM creating DataElement Agents for layer: LTF\_FEATURES-PRISM

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_[0m [328] - Layer format: LTF

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_[0m [339] - <1> Creating DataElementAgents for all changed DataElements

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateChangedDataElementAgents\_[0m [442] - Found: 1 DataElements on layer: LTF\_FEATURES-PRISM

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateChangedDataElementAgents\_[0m [444] - Creating DataElementAgents for all changed DataElements

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_[0mdpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetExtents\_[0m [270] - Geometry type: class com.vividolutions.jts.geom.MultiPoint DEBUG.

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_[0mdpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetExtents\_[0m [313] - MultiPoint: extents sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021975 Deg DOUBLE CHECK ...

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPrismData\_[0m [466] - LineString: data size - 8

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Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [452] -
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.DataElement_LTF
{
    [label] Building Wall
    [format] LTF
    [unique_id] LTF_0X0X0_1931
    [extents] ...
    sw: Geodetic: lat 34.891315 lon -117.021975 Deg      ne: Geodetic: lat 34.891501 lon -117.021975 Deg
    [geometry] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Geometry
{
    type: PRISM
    coordType: GDC
    extents:  sw: Geodetic: lat 34.891315 lon -117.021975 Deg      ne: Geodetic: lat 34.891501 lon -117.021975 Deg
    prism data: Geodetic: lat 34.891315 lon -117.021975 Deg
    prism data: Geodetic: lat 34.891315 lon -117.021802 Deg
    prism data: Geodetic: lat 34.891501 lon -117.021802 Deg
    prism data: Geodetic: lat 34.891501 lon -117.021975 Deg
    prism data: Geodetic: lat 34.891315 lon -117.021975 Deg
    prism data: Geodetic: lat 34.891315 lon -117.021802 Deg
    prism data: Geodetic: lat 34.891501 lon -117.021802 Deg
    prism data: Geodetic: lat 34.891501 lon -117.021975 Deg
}
    [attributes] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Wall Texture, value: walls.png
    Attribute - type: class java.lang.String, name: Foliage Texture, value: leaves.png
    Attribute - type: class java.lang.String, name: Door Decal, value: door.png
    Attribute - type: class java.lang.String, name: Roof Texture, value: roof.png
    Attribute - type: class java.lang.String, name: Window Decal, value: window.png
}
    ontology class info: namespace: http://localhost/ontologies/TDBLiveLTF.owl#, name: LTFPrismBuildingWall
}

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [453] - Considering DataElement uniqueId:
LTF_0X0X0_1931
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [467] - ==> ADDING changed or inconsistent
DataElement Agent: Building Wall
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation
SEVERE: _[35m***[LIMITATION]***_[0mdpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgent_[0m [1071] - Creating
DataElementAgent to process PRISM DataElement ... may need to specialize
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgent_[0m [1084] - Created PRISM DataElementAgent for layer:
LTF_FEATURES-PRISM
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mmapLabelToOntologyClass_[0m [717] - Mapping for catalog: Other
label: Building Wall is ontology class: namespace: http://localhost/ontologies/TDBLiveLTF.owl#, name: LTFPrismBuildingWall
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation
SEVERE: _[35m***[LIMITATION]***_[0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mgetTDBName_[0m [1082] -
Looking for TDB Name for format: LTF and extents:  sw: Geodetic: lat 34.891315 lon -117.021975 Deg      ne: Geodetic: lat 34.891501 lon -
117.021802 Deg
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [523] - DataElement ontology namespace:
http://localhost/ontologies/TDB-LTF-c7_textured.owl#
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetDependentDataElementsUniqueIdentifiers_[0m [422] - Looking for
dependent DataElement for individual: LTF-LTFPrismBuildingWall-292494307
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning

```

SEVERE:

[35m\*\*\*[WARNING]\*\*\* [0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetDependentDataElementsFromIndividual\_0m [2969] - individual test name: http://localhost/ontologies/TDB-LTF-c7\_textured.owl#LTF-LTFPrismBuildingWall-292494307 not found.  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log warning  
SEVERE: [35m\*\*\*[WARNING]\*\*\* [0mdpbtbrgen.services.agents.CellAgent:: [1mcreateChangedDataElementAgents\_0m [534] - no dependentDataElementUniquelidentifiers are available.  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent:: [1mcreateChangedDataElementAgents\_0m [552] - Extracting correlated individual information from ontology  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021802 Deg  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021802 Deg  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologyRepositoryManager:: [1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetCorrelatedToDataElementsFromIndividual\_0m [3730] - DONE extracting number of correlated DataElements unique ids: 2  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent:: [1mcreateChangedDataElementAgents\_0m [581] - Looking for unique id for correlated individual: OTF-OTFPBuilding-658244779, using namespace: http://localhost/ontologies/TDB-OTF-myNtc\_terrain\_database.owl#  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4039] - DataElement individual - namespace: http://localhost/ontologies/TDB-OTF-myNtc\_terrain\_database.owl#, name: OTF-OTFPBuilding-658244779  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4044] - DataElement class - namespace: http://localhost/ontologies/TDBStructure.owl#, name: DataElement  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4061] - ==> uniqueIdentifier individual:http://localhost/ontologies/TDB-OTF-myNtc\_terrain\_database.owl#UID-OTF-9c6d352c4ca21e08459002421a8c4c6  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4070] - ==> unique identifier:9c6d352c4ca21e08459002421a8c4c6  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologyRepositoryManager:: [1mgetUniqueIdentifierFromIndividual\_0m [1109] - Extracted for individual: http://localhost/ontologies/TDB-OTF-myNtc\_terrain\_database.owl#OTF-OTFPBuilding-658244779 the unique identifier: 9c6d352c4ca21e08459002421a8c4c6  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent:: [1mcreateChangedDataElementAgents\_0m [590] - unique id: 9c6d352c4ca21e08459002421a8c4c6  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent:: [1mcreateChangedDataElementAgents\_0m [593] - Adding correlated unique id: 9c6d352c4ca21e08459002421a8c4c6  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent:: [1mcreateChangedDataElementAgents\_0m [581] - Looking for unique id for correlated individual: FLT-FLTExtRefModelBuilding-173339979, using namespace: http://localhost/ontologies/TDB-FLT-myNtc.owl#  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4039] - DataElement individual - namespace: http://localhost/ontologies/TDB-FLT-myNtc.owl#, name: FLT-FLTExtRefModelBuilding-173339979  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4044] - DataElement class - namespace: http://localhost/ontologies/TDBStructure.owl#, name: DataElement  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4061] - ==> uniqueIdentifier individual:http://localhost/ontologies/TDB-FLT-myNtc.owl#UID-FLT-FLT\_0X0\_-5941746916707185650  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4070] -

```

====> unique identifier:FLT_0X0_-5941746916707185650
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetUniqueIdentifierFromIndividual_[0m [1109] - Extracted for
individual: http://localhost/ontologies/TDB-FLT-myNtc.owl#FLT-FLTExtRefModelBuilding-1733339979 the unique identifier: FLT_0X0_-
5941746916707185650
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [590] - unique id: FLT_0X0_-
5941746916707185650
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [593] - Adding correlated unique id: FLT_0X0_-
5941746916707185650
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [611] - ====> Posting list of correlated DataElement
to DataPanel
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.CellAgent::_[1mupdateDataPanel_[0m [203] - Updating DataPanel with dependent / correlated and potentially
inconsistent DataElements.
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.CellAgent::_[1mupdateDataPanel_[0m [219] - Found dependent/correlated DataElements (2), posting to
DataPanel.
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mupdateDataPanel_[0m [221] - _dependentDataElements:
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mupdateDataPanel_[0m [223] - , id: [9c6d352c4ca211e08459002421a8c4c6, FLT_0X0_-
5941746916707185650]
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mupdateDataPanel_[0m [223] - , id: [9c6d352c4ca211e08459002421a8c4c6, FLT_0X0_-
5941746916707185650]
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mupdateDataPanel_[0m [224] -

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.blackboard.BlackBoardDataPanel::_[1mpost_[0m [53] - DataItem contains dependent/correlated DataElements
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [345] - Number of created DataElementAgents: 1 Found -
dependent unique ids: [] - correlated ontology unique ids: [9c6d352c4ca211e08459002421a8c4c6, FLT_0X0_-5941746916707185650]
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [352] - <2> Creating DataElementAgents for dependent
DataElements
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDependentDataElementAgents_[0m [720] - No dependent DataElement exit for change
DataElement. No processing necessary.
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [358] - Created : 0 dependent DataElementAgents out of 0
dependent DataElements. There is (0) dependent DataElement on other cells / layers.
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [363] - <3> Creating DataElementAgents for all correlated
DataElements on this cell.
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [368] - Created : 0 correlated DataElementAgents.
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [372] - <4> Creating DataElementAgents for all dependent
correlated DataElements of this cell
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDependentCorrelatedDataElementsAgents_[0m [859] - Looking for correlated
DataElement for 0 dependent DataElement
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [376] - Created : 0 dependent correlated DataElementAgents.
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [388] - Cell extents:          sw: Geodetic: lat 34.891315 lon -
117.021975 Deg      ne: Geodetic: lat 34.891501 lon -117.021802 Deg
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [392] -

```

=====> DONE , Cell: CellAgent-LTF-PRISM Layer: LTF\_FEATURES-PRISM, Done creating DataElementsAgents. Total number of agents created: 1

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_][0m [343] - Updating capability: CreateDataElementAgents state based on action results. confidence: High All preconditions will be updated as well.  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mmakeKnowledgeSourceContribution\_][0m [399] -

=====> Agent: CellAgent-LTF-CYLINDER  
Executing the proposed contribution Function: CreateDataElementAgents

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_][0m [166] - =====> Check DataPanel for the creation of correlated DataElements., Cell: CellAgent-LTF-CYLINDER  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_][0m [172] - Found dependent DataElements on DataPanel see if any needs to be created.  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_][0m [173] - dependentDataElements:  
Dependent DataElements  
    unique id: LTF\_0X0X0\_1931  
    unique id: FLT\_0X0\_-5941746916707185650  
    unique id: LTF-LTFPrismBuildingWall-1835992364  
    unique id: FLT-FLTEExtRefModelBuilding-1733339979  
    unique id: 9c6d352c4ca211e08459002421a8c4c6  
    unique id: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1292] -  
=====> CellAgent: CellAgent-LTF-CYLINDER flagging dependent DataElement as inconsistent on layer:  
LTF\_FEATURES-CYLINDER  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1308] - Layer format: LTF  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1311] - Found: 2 DataElements on layer: LTF\_FEATURES-CYLINDER  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1319] - considering DataElement uniqueId: LTF\_0X0X0\_187  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1319] - considering DataElement uniqueId: LTF\_0X0X0\_188  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1328] - Done, submitting: 0 dependent DataElement Agents  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent\$CreateDataElementsAgentsFunction::\_[1mrun\_][0m [273] - ==> Creating DataElement Agents --  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [313] - =====> CellAgent: CellAgent-LTF-CYLINDER creating DataElement Agents for layer: LTF\_FEATURES-CYLINDER  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [328] - Layer format: LTF  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [339] - <1> Creating DataElementAgents for all changed DataElements  
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

```

INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [442] - Found: 2 DataElements on layer:
LTF_FEATURES-CYLINDER
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [444] - Creating DataElementAgents for all changed
DataElements
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_[0m [247] - Point: extents      sw: Geodetic: lat 34.891127 lon -
117.022243 Deg      ne: Geodetic: lat 34.891683 lon -117.021688 Deg
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_[0m [367] - Point: data - Geodetic: lat 34.891405 lon -
117.021965 Deg
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [452] -
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.DataElement_LTF
{
    [label] Tree Trunk
    [format] LTF
    [unique_id] LTF_0X0X0_187
    [extents] ...
    sw: Geodetic: lat 34.891127 lon -117.022243 Deg      ne: Geodetic: lat 34.891683 lon -117.021688 Deg
    [geometry] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Geometry
{
    type: CYLINDER
    coordType: GDC
    extents:      sw: Geodetic: lat 34.891127 lon -117.022243 Deg      ne: Geodetic: lat 34.891683 lon -117.021688 Deg
    origin: Geodetic: lat 34.891405 lon -117.021965 Deg
    height: 5.0
    radius: 0.125
}
    [attributes] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Wall Texture, value: walls.png
    Attribute - type: class java.lang.String, name: Foliage Texture, value: leaves.png
    Attribute - type: class java.lang.String, name: Door Decal, value: door.png
    Attribute - type: class java.lang.String, name: Roof Texture, value: roof.png
    Attribute - type: class java.lang.String, name: Window Decal, value: window.png
}
    ontology class info: namespace: http://localhost/ontologies/TDBLiveLTF.owl#, name: LTFCylinderTreeTrunk
}

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [453] - Considering DataElement uniqueId:
LTF_0X0X0_187
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_[0m [247] - Point: extents      sw: Geodetic: lat 34.891127 lon -
117.022243 Deg      ne: Geodetic: lat 34.891683 lon -117.021688 Deg
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_[0m [367] - Point: data - Geodetic: lat 34.891405 lon -
117.021965 Deg
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [452] -
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.DataElement_LTF
{
    [label] Tree Foliage
    [format] LTF
    [unique_id] LTF_0X0X0_188
    [extents] ...
    sw: Geodetic: lat 34.891127 lon -117.022243 Deg      ne: Geodetic: lat 34.891683 lon -117.021688 Deg
    [geometry] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Geometry
{

```



```

    type: CYLINDER
    coordType: GDC
    extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg      ne: Geodetic: lat 34.891683 lon -117.021688 Deg
    origin: Geodetic: lat 34.891405 lon -117.021965 Deg
    height: 3.5
    radius: 1.5
}
[attributes] ...
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Wall Texture, value: walls.png
    Attribute - type: class java.lang.String, name: Foliage Texture, value: leaves.png
    Attribute - type: class java.lang.String, name: Door Decal, value: door.png
    Attribute - type: class java.lang.String, name: Roof Texture, value: roof.png
    Attribute - type: class java.lang.String, name: Window Decal, value: window.png
}
ontology class info: namespace: http://localhost/ontologies/TDBLiveLTF.owl#, name: LTFcylinderTreeFoliange
}

```

```

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [453] - Considering DataElement uniqueId:
LTF_0X0X0_188
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [345] - Number of created DataElementAgents: 0 Found -
dependent unique ids: [] - correlated ontology unique ids: []
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [352] - <2> Creating DataElementAgents for dependent
DataElements
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateDependentDataElementAgents_[0m [720] - No dependent DataElement exit for change
DataElement. No processing necessary.
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [358] - Created : 0 dependent DataElementAgents out of 0
dependent DataElements. There is (0) dependent DataElement on other cells / layers.
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [363] - <3> Creating DataElementAgents for all correlated
DataElements on this cell.
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [368] - Created : 0 correlated DataElementAgents.
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [372] - <4> Creating DataElementAgents for all dependent
correlated DataElements of this cell
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateDependentCorrelatedDataElementAgents_[0m [859] - Looking for correlated
DataElement for 0 dependent DataElement
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [376] - Created : 0 dependent correlated DataElementAgents.
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_[0mdpbtbrngen.services.agents.CellAgent::_[1mupdateExtents_[0m [417] - Cell extents == null, Agent
created: 0
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [388] - Cell extents:      ==> ***WARNING*** sw
OR ne is null
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateDataElementAgents_[0m [392] -

=====> DONE , Cell: CellAgent-LTF-CYLINDER Layer: LTF_FEATURES-CYLINDER, Done creating
DataElementsAgents. Total number of agents created: 0

```

```

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrngen.services.common.Log info
INFO: dpbtbrngen.services.blackboard.BlackBoardDataItem::_[1mupdateAction_[0m [343] - Updating capability: CreateDataElementAgents
state based on action results. confidence: High All preconditions will be updated as well.

```

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1makeKnowledgeSourceContribution\_][0m [399] -

=====> Agent: CellAgent-FLT-EXTREF\_MODEL  
Executing the proposed contribution Function: CreateDataElementAgents

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_][0m [166] - =====> Check DataPanel for the creation of correlated  
DataElements., Cell: CellAgent-FLT-EXTREF\_MODEL

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_][0m [172] - Found dependent DataElements on DataPanel see if any needs  
to be created.

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_][0m [173] - dependentDataElements:  
Dependent DataElements

unique id: LTF\_0X0X0\_1931  
unique id: FLT\_0X0\_-5941746916707185650  
unique id: LTF-LTFPrismBuildingWall-1835992364  
unique id: FLT-FLTEExtRefModelBuilding-1733339979  
unique id: 9c6d352c4ca211e08459002421a8c4c6  
unique id: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1292] -  
=====> CellAgent: CellAgent-FLT-EXTREF\_MODEL flagging dependent DataElement as inconsistent on layer:

FLT\_FEATURES-EXTREF\_MODEL

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1308] - Layer format:  
FLT

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1311] - Found: 2  
DataElements on layer: FLT\_FEATURES-EXTREF\_MODEL

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1319] - considering  
DataElement uniqueId: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataPanel::\_[1mcontainsDependentDataElements\_][0m [283] - Found dependent DataElement  
unique ids

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1322] - DataPanel  
contains uniqueId: FLT\_0X0\_-5941746916707185650 setting DataElement state to inconsistent.

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1319] - considering  
DataElement uniqueId: FLT\_0X0\_8274118836400194277

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1328] - Done,  
submitting: 1 dependent DataElement Agents

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent\$CreateDataElementAgentsFunction::\_[1mrun\_][0m [273] - =====> Creating DataElement  
Agents --

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [313] - =====> CellAgent: CellAgent-  
FLT-EXTREF\_MODEL creating DataElement Agents for layer: FLT\_FEATURES-EXTREF\_MODEL

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [328] - Layer format: FLT

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [339] - <1> Creating DataElementAgents for all changed  
DataElements

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateChangedDataElementAgents\_][0m [442] - Found: 2 DataElements on layer:  
FLT\_FEATURES-EXTREF\_MODEL

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

```

INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [444] - Creating DataElementAgents for all changed
DataElements
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_[0m [247] - Point: extents      sw: Geodetic: lat 36.562908 lon -
116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_[0m [367] - Point: data - Geodetic: lat 36.563186 lon -
116.592031 Deg
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [452] -
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.DataElement_FLT
{
    [label] AL015
    [format] FLT
    [unique_id] FLT_0X0_-5941746916707185650
    [extents] ...
    sw: Geodetic: lat 36.562908 lon -116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
    [geometry] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Geometry
{
    type: EXTREF_MODEL
    coordType: GDC
    extents:      sw: Geodetic: lat 36.562908 lon -116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
    filename: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51.fl
    origin: Geodetic: lat 36.563186 lon -116.592031 Deg
    aoo: 0.0
}
    [attributes] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.Double, name: WID, value: 10.0
    Attribute - type: class java.lang.Double, name: HGT, value: 4.0
    Attribute - type: class java.lang.String, name: Label, value: AL015
    Attribute - type: class java.lang.Double, name: AOO, value: 0.0
    Attribute - type: class java.lang.Integer, name: EXS, value: 28
    Attribute - type: class java.lang.Double, name: LNT, value: 10.0
}
    ontology class info: namespace: http://localhost/ontologies/TDBVirtualFLT.owl#, name: FLTEExtRefModelBuilding
}

Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [453] - Considering DataElement uniqueId:
FLT_0X0_-5941746916707185650
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [467] - ==> ADDING changed or inconsistent
DataElement Agent: AL015
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation
SEVERE: _[35m***[LIMITATION]***_[0mdpbtbrgen.services.agents.CellAgent::_[1mcreateDataElementAgent_[0m [1106] - Creating
DataElementAgent to process EXTREF_MODEL DataElement ... may need to specialize
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mmapLabelToOntologyClass_[0m [717] - Mapping for catalog: Face
label: AL015 is ontology class: namespace: http://localhost/ontologies/TDBVirtualFLT.owl#, name: FLTEExtRefModelBuilding
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation
SEVERE: _[35m***[LIMITATION]***_[0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mgetTDBName_[0m [1082] -
Looking for TDB Name for format: FLT and extents:      sw: Geodetic: lat 36.562908 lon -116.592309 Deg      ne: Geodetic: lat 36.563464 lon -
116.591753 Deg
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_[0m [523] - DataElement ontology namespace:
http://localhost/ontologies/TDB-FLT-myNtc.owl#
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetDependentDataElementsUniqueIdentifiers_[0m [422] - Looking for
dependent DataElement for individual: FLT-FLTEExtRefModelBuilding1463572929
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning

```

SEVERE:

[35m\*\*\*[WARNING]\*\*\* [0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetDependentDataElementsFromIndividual\_0m [2969] - individual test name: http://localhost/ontologies/TDB-FLT-myNtc.owl#FLT-FLTextRefModelBuilding1463572929 not found.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log warning  
SEVERE: [35m\*\*\*[WARNING]\*\*\* [0mdpbtbrgen.services.agents.CellAgent:: [1mcreateChangedDataElementAgents\_0m [534] - no dependentDataElementUniquelidentifiers are available.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent:: [1mcreateChangedDataElementAgents\_0m [552] - Extracting correlated individual information from ontology  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName\_0m [1082] - Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon -116.591753 Deg  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName\_0m [1082] - Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon -116.591753 Deg  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologyRepositoryManager:: [1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: FLT\_0X0\_-5941746916707185650  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetCorrelatedToDataElementsFromIndividual\_0m [3730] - DONE extracting number of correlated DataElements unique ids: 2  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent:: [1mcreateChangedDataElementAgents\_0m [581] - Looking for unique id for correlated individual: LTF-LTFPrismBuildingWall-1835992364, using namespace: http://localhost/ontologies/TDB-LTF-c7\_textured.owl#  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4039] - DataElement individual - namespace: http://localhost/ontologies/TDB-LTF-c7\_textured.owl#, name: LTF-LTFPrismBuildingWall-1835992364  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4044] - DataElement class - namespace: http://localhost/ontologies/TDBStructure.owl#, name: DataElement  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4061] - ==> uniqueIdentifier individual:http://localhost/ontologies/TDB-LTF-c7\_textured.owl#UID-LTF-LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4070] - ==> unique identifier:LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologyRepositoryManager:: [1mgetUniqueIdentifierFromIndividual\_0m [1109] - Extracted for individual: http://localhost/ontologies/TDB-LTF-c7\_textured.owl#LTF-LTFPrismBuildingWall-1835992364 the unique identifier: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent:: [1mcreateChangedDataElementAgents\_0m [590] - unique id: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent:: [1mcreateChangedDataElementAgents\_0m [593] - Adding correlated unique id: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.agents.CellAgent:: [1mcreateChangedDataElementAgents\_0m [581] - Looking for unique id for correlated individual: OTF-OTFPBuilding-658244779, using namespace: http://localhost/ontologies/TDB-OTF-myNtc\_terrain\_database.owl#  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4039] - DataElement individual - namespace: http://localhost/ontologies/TDB-OTF-myNtc\_terrain\_database.owl#, name: OTF-OTFPBuilding-658244779  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4044] - DataElement class - namespace: http://localhost/ontologies/TDBStructure.owl#, name: DataElement  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4061] - ==> uniqueIdentifier individual:http://localhost/ontologies/TDB-OTF-myNtc\_terrain\_database.owl#UID-OTF-9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterogator:: [1mgetUniqueIdentifierFromIndividual\_0m [4070] - ==> unique identifier:9c6d352c4ca211e08459002421a8c4c6

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Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::_[1mgetUniqueIdentifierFromIndividual_0m [1109] - Extracted for
individual: http://localhost/ontologies/TDB-OTF-myNTC_terrain_database.owl#OTF-OTFPBuilding-658244779 the unique identifier:
9c6d352c4ca211e08459002421a8c4c6
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_0m [590] - unique id:
9c6d352c4ca211e08459002421a8c4c6
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_0m [593] - Adding correlated unique id:
9c6d352c4ca211e08459002421a8c4c6
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_0m [247] - Point: extents      sw: Geodetic: lat 36.578665 lon -
116.591325 Deg      ne: Geodetic: lat 36.579220 lon -116.590769 Deg
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_0m [367] - Point: data - Geodetic: lat 36.578942 lon -
116.591047 Deg
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_0m [452] -
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.DataElement_FLT
{
    [label] AQ040
    [format] FLT
    [unique_id] FLT_0X0_8274118836400194277
    [extents] ...
    sw: Geodetic: lat 36.578665 lon -116.591325 Deg      ne: Geodetic: lat 36.579220 lon -116.590769 Deg
    [geometry] ...
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen_Geometry
{
    type: EXTREF_MODEL
    coordType: GDC
    extents:      sw: Geodetic: lat 36.578665 lon -116.591325 Deg      ne: Geodetic: lat 36.579220 lon -116.590769 Deg
    filename: 261bridge.flt
    origin: Geodetic: lat 36.578942 lon -116.591047 Deg
    aoo: 36.03080394384989
}
    [attributes] ...
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.Double, name: WID, value: 12.0
    Attribute - type: class java.lang.Integer, name: NOS, value: 12
    Attribute - type: class java.lang.String, name: Label, value: AQ040
    Attribute - type: class java.lang.Double, name: AOO, value: 36.03080394384989
    Attribute - type: class java.lang.Integer, name: EXS, value: 28
}
    ontology class info: namespace: http://localhost/ontologies/TDBVirtualFLT.owl#, name: FLTExtRefModelBridge
}

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_0m [453] - Considering DataElement uniqueId:
FLT_0X0_8274118836400194277
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mcreateChangedDataElementAgents_0m [611] - ==> Posting list of correlated DataElement
to DataPanel
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.agents.CellAgent::_[1mupdateDataPanel_0m [203] - Updating DataPanel with dependent / correlated and potentially
inconsistent DataElements.
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.agents.CellAgent::_[1mupdateDataPanel_0m [219] - Found dependent/correlated DataElements (2), posting to
DataPanel.
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.agents.CellAgent::_[1mupdateDataPanel_0m [221] - _dependentDataElements:
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

```

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mupdateDataPanel\_][0m [223] - , id: [LTF\_0X0X0\_1931, 9c6d352c4ca211e08459002421a8c4c6]

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mupdateDataPanel\_][0m [223] - , id: [LTF\_0X0X0\_1931, 9c6d352c4ca211e08459002421a8c4c6]

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mupdateDataPanel\_][0m [224] -

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.blackboard.BlackBoardDataPanel::\_[1mpost\_][0m [53] - DataItem contains dependent/correlated DataElements

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [345] - Number of created DataElementAgents: 1 Found - dependent unique ids: [] - correlated ontology unique ids: [LTF\_0X0X0\_1931, 9c6d352c4ca211e08459002421a8c4c6]

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [352] - <2> Creating DataElementAgents for dependent DataElements

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDependentDataElementAgents\_][0m [720] - No dependent DataElement exit for change DataElement. No processing necessary.

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [358] - Created : 0 dependent DataElementAgents out of 0 dependent DataElements. There is (0) dependent DataElement on other cells / layers.

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [363] - <3> Creating DataElementAgents for all correlated DataElements on this cell.

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [368] - Created : 0 correlated DataElementAgents.

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [372] - <4> Creating DataElementAgents for all dependent correlated DataElements of this cell

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDependentCorrelatedDataElementAgents\_][0m [859] - Looking for correlated DataElement for 0 dependent DataElement

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [376] - Created : 0 dependent correlated DataElementAgents.

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [388] - Cell extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon -116.591753 Deg

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mcreateDataElementAgents\_][0m [392] -

=====> DONE , Cell: CellAgent-FLT-EXTREF\_MODEL Layer: FLT\_FEATURES-EXTREF\_MODEL, Done creating DataElementAgents. Total number of agents created: 1

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_][0m [343] - Updating capability: CreateDataElementAgents state based on action results. confidence: High All preconditions will be updated as well.

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine

INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mcheckForKnowledgeSourceContribution\_][0m [86] - Controller: ask all registered KS for contributions

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mcheckForKnowledgeSourceContribution\_][0m [273] - Agent: DataElementAgent-OTF-Point-BUILDING-9c6d352c4ca211e08459002421a8c4c6 posting capability to task panel: RunDataElementIntegrityTest

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mcheckForKnowledgeSourceContribution\_][0m [306] - Agent: DataElementAgent-OTF-Point-BUILDING-9c6d352c4ca211e08459002421a8c4c6 posting capability: : GeoScratchPadLayerIntegrityOK to task panel as its contained in preconditions:

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mcheckForKnowledgeSourceContribution\_][0m [273] - Agent: DataElementAgent-LTF-PRISM-Building Wall-LTF\_0X0X0\_1931 posting capability to task panel: RunDataElementIntegrityTest

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtdbrgen.services.agents.KnowledgeSource::\_[1mcheckForKnowledgeSourceContribution\_][0m [306] - Agent: DataElementAgent-LTF-PRISM-Building Wall-LTF\_0X0X0\_1931 posting capability: : GeoScratchPadLayerIntegrityOK to task panel as its contained in preconditions:

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info

INFO: dpbtdbrgen.services.agents.KnowledgeSource::\_[1mcheckForKnowledgeSourceContribution\_][0m [273] - Agent: DataElementAgent-FLT-EXTREF\_MODEL-AL015-FLT\_0X0\_-5941746916707185650 posting capability to task panel: RunDataElementIntegrityTest

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info

INFO: dpbtdbrgen.services.agents.KnowledgeSource::\_[1mcheckForKnowledgeSourceContribution\_][0m [306] - Agent: DataElementAgent-FLT-EXTREF\_MODEL-AL015-FLT\_0X0\_-5941746916707185650 posting capability: : GeoScratchPadLayerIntegrityOK to task panel as its contained in preconditions:

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log fine

INFO: dpbtdbrgen.services.agents.BlackboardController::\_[1mdisplayTasksAndDataPanels\_][0m [356] - DATA PANEL (count=13)

\*\*ERROR\*\* label: CorrelatedDataElementsUniqueIid-FromPostCorrelatedDataElementUniqueIidsToDataPanel does not exist

\*\*ERROR\*\* label: CorrelatedDataElementsUniqueIid-FromPostCorrelatedDataElementUniqueIidsToDataPanel does not exist

\*\*ERROR\*\* label: CorrelatedDataElementsUniqueIid-FromCreateCorrelatedDataElementsAgents does not exist

\*\*ERROR\*\* label: CorrelatedDataElementsUniqueIid-FromCreateCorrelatedDataElementsAgents does not exist

\*\*ERROR\*\* label: CorrelatedDataElementsUniqueIid-FromPostCorrelatedDataElementUniqueIidsToDataPanel does not exist

\*\*ERROR\*\* label: CorrelatedDataElementsUniqueIid-FromPostCorrelatedDataElementUniqueIidsToDataPanel does not exist

\*\*ERROR\*\* label: CorrelatedDataElementsUniqueIid-FromPostCorrelatedDataElementUniqueIidsToDataPanel does not exist

\*\*ERROR\*\* label: CorrelatedDataElementsUniqueIid-FromPostCorrelatedDataElementUniqueIidsToDataPanel does not exist

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log fine

INFO: dpbtdbrgen.services.agents.BlackboardController::\_[1mdisplayTasksAndDataPanels\_][0m [373] -

#### DATA PANEL

1. name: CheckTdbRepoOntology, type: Goal, confidence: High  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | ]  
actions: CheckTdbRepoOntology, outputs: [CellOntologyExists, DataElementOntologyExists]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
2. name: CreateCellAgents, type: Goal, confidence: High  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -> object(true) | ]  
actions: CreateCellAgents, outputs: [CreateCellAgents]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
3. name: CreateDataElementAgents, type: Goal, confidence: High  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(true) | ]  
actions: CreateDataElementAgents, outputs: [CreateDataElementAgents]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
- \*4. name: RunDataElementIntegrityTest, type: Goal, confidence: None  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(DataElementOntologyExists) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(true) | ]  
actions: RunDataElementIntegrityTest, outputs: [GeoScratchPadLayerIntegrityOK, RegenRelatedDataElements]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
- \*5. name: RegenDependentDataElements, type: Goal, confidence: None  
preconditions: [subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(true) | subject(RegenRelatedDataElements) ^ predicate (And) -> object(false) | ]  
actions: RegenRelatedDataElements, outputs: [RunDataElementIntegrityTest]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
- \*6. name: RunCorrelation, type: Goal, confidence: None

preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(true) | subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(false) | ]  
actions: RunDataElementCorrelation, outputs: [DataElementsCorrelated, RegenGSPDataElement]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

\*7. name: RegenDataElementsAfterCorrFailure, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(RegenGSPDataElement) ^ predicate (And) -> object(false) | ]  
actions: RegenGSPDataElement, outputs: [RunDataElementIntegrityTest, GeoScratchPadLayerIntegrityOK]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

\*8. name: RegenGeoScratchPadCells, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(false) | subject(RegenGSPDataElement) ^ predicate (And) -> object(false) | subject(RegenGSPCells) ^ predicate (And) -> object(false) | ]  
actions: RegenGSPCells, outputs: [RunDataElementCorrelation, DataElementsCorrelated]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

\*9. name: RunCellCorrelation, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(false) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(false) | subject(DataElementsCorrelated) ^ predicate (And) -> object(false) | ]  
actions: RunCellCorrelation, outputs: [GeoScratchPadCorrelated]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

\*10. name: CorrelatedDataElementsUniqueId-FromPostCorrelatedDataElementUniqueIdsToDataPanel, type: InformationDATA ITEM - pring not implemented.

\*11. name: CorrelatedDataElementsUniqueId-FromCreateCorrelatedDataElementsAgents, type: InformationDATA ITEM - pring not implemented.

\*12. name: CorrelatedDataElementsUniqueId-FromPostCorrelatedDataElementUniqueIdsToDataPanel, type: InformationDATA ITEM - pring not implemented.

\*13. name: CorrelatedDataElementsUniqueId-FromPostCorrelatedDataElementUniqueIdsToDataPanel, type: InformationDATA ITEM - pring not implemented.

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::[\_IdisplayTasksAndDataPanels\_[0m [377] - TASK PANEL (count=6)  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::[\_IdisplayTasksAndDataPanels\_[0m [388] - TASKS

0. name: DataElementAgent-OTF-Point-BUILDING-9c6d352c4ca211e08459002421a8c4c6, type: Task, priority: 1, \_ks: DataElementAgent-OTF-Point-BUILDING-9c6d352c4ca211e08459002421a8c4c6, task: RunDataElementIntegrityTest
1. name: DataElementAgent-OTF-Point-BUILDING-9c6d352c4ca211e08459002421a8c4c6, type: Task, priority: 1, \_ks: DataElementAgent-OTF-Point-BUILDING-9c6d352c4ca211e08459002421a8c4c6, task: GeoScratchPadLayerIntegrityOK
2. name: DataElementAgent-LTF-PRISM-Building Wall-LTF\_0X0X0\_1931, type: Task, priority: 1, \_ks: DataElementAgent-LTF-PRISM-Building Wall-LTF\_0X0X0\_1931, task: RunDataElementIntegrityTest
3. name: DataElementAgent-LTF-PRISM-Building Wall-LTF\_0X0X0\_1931, type: Task, priority: 1, \_ks: DataElementAgent-LTF-PRISM-Building Wall-LTF\_0X0X0\_1931, task: GeoScratchPadLayerIntegrityOK
4. name: DataElementAgent-FLT-EXTREF\_MODEL-AL015-FLT\_0X0\_-5941746916707185650, type: Task, priority: 1, \_ks: DataElementAgent-FLT-EXTREF\_MODEL-AL015-FLT\_0X0\_-5941746916707185650, task: RunDataElementIntegrityTest
5. name: DataElementAgent-FLT-EXTREF\_MODEL-AL015-FLT\_0X0\_-5941746916707185650, type: Task, priority: 1, \_ks: DataElementAgent-FLT-EXTREF\_MODEL-AL015-FLT\_0X0\_-5941746916707185650, task: GeoScratchPadLayerIntegrityOK

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::[\_ImakeKnowledgeSourceContribution\_[0m [146] - Controller: reviews and selects KS based on proposed contribution  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::[\_ImakeKnowledgeSourceContribution\_[0m [399] -

=====> Agent: DataElementAgent-OTF-Point-BUILDING-9c6d352c4ca211e08459002421a8c4c6



Executing the proposed contribution Function: RunDataElementIntegrityTest

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mreviewDataPanel\_0m [156] - Check DataPanel for inconsisten DataElements.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mupdateDataPanel\_0m [185] - Updating DataPanel with inconsisten DataElements.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mrunIntegrityTests\_0m [276] -

====> Running integrity test for DataElement: BUILDING

Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager:: [1mgetIntegrityTests\_0m [536] - Looking for DataElement integrity tests for class: OTFPBuilding, namespace: http://localhost/ontologies/TDBConstructiveOTF.owl#  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager:: [1mgetIntegrityTests\_0m [549] - done, QUERY PROCESSING TIME: 4 miliseconds.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager:: [1mgetIntegrityTests\_0m [555] - query result: ( ?integrityTestsStr = <http://localhost/ontologies/TDBTest.owl#TestInRequiredAttributes> )  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager:: [1mgetIntegrityTests\_0m [557] -  
====> node: http://localhost/ontologies/TDBTest.owl#TestInRequiredAttributes  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mrunIntegrityTests\_0m [299] - running integrity tests  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mrunIntegrityTests\_0m [307] - 0. test data: TEST\_IN\_REQ\_ATTRIBUTES  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.TestFactory:: [1m<init>\_0m [65] - Partial test mapping. Implemented - , Integrity tests; TEST\_IN\_TOPO\_RELATION and TEST\_IN\_REQ\_ATTRIBUTES, Correlation tests; TEST\_CORR\_CULTURE\_EXISTANSE and TEST\_CORR\_CULTURE\_ATTRIBUTES  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.TestIntiAttributesKnowledgeBase:: [1minitializeDefaultAttributes\_0m [57] - Limited default feature attributes. Needs to be implemented on ontology.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitRequiredAttributes:: [1minitializeOTFDefaultAttributes\_0m [42] - Partial attribute support for Bridge line, bridge span, point building, line road only.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitRequiredAttributes:: [1mgetOtfPointBridgeSpanAttributes\_0m [285] - Temp DataElement attributes - FIXME Feb 23.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitRequiredAttributes:: [1minitializeLTFDefaultAttributes\_0m [360] - Partial attribute support for prism bridge, and prism building only.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitRequiredAttributes:: [1minitializeFLTDefaultAttributes\_0m [481] - Partial attribute support for building and bridge building only.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.TestIntiAttributesKnowledgeBase:: [1minitializeCorrelationAttributes\_0m [81] - Limited correlated feature attributes. Needs to be implemented on ontology.  
IOException while opening log file: ./dpbtbrgen.log Exception: java.io.IOException: Couldn't get lock for ./dpbtbrgen.log  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitCorrelatedAttributes:: [1minitializeOTFCorrelatedAttributes\_0m [41] - Partial correlated attribute support for Bridge line, bridge span, point building, line road only.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitCorrelatedAttributes:: [1minitializeLTFCorrelatedAttributes\_0m [312] - Partial attribute support for prism bridge, and prism building only.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitCorrelatedAttributes:: [1minitializeFLTCorrelatedAttributes\_0m [416] - Partial attribute support for building and bridge building only.  
IOException while opening log file: ./dpbtbrgen.log Exception: java.io.IOException: Couldn't get lock for ./dpbtbrgen.log

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Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [43] - TestIntegRequiredAttributes Test
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_[0mdpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [53] - USING TEMP
AttributeKnowledgeBase
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [73] - Changed DataElement attributes:
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [74] -
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.Integer, name: NUMERIC_OBJECT_IDENTIFIER, value: 0
    Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_DOOR_PRI_WIDTH, value: 6.0
    Attribute - type: class java.lang.String, name: WALL_PREDOMINANT_SURFACE_MATERIAL, value: MASONRY
    Attribute - type: class java.lang.String, name: REGIONAL_STYLE, value: MODERN_INDUSTRIAL_CONSTRUCTION
    Attribute - type: class java.lang.Double, name: EMISSIVITY_QB_EM_BAND_AND_BUILDING_COMPONENT_TYPE, value: 0.0
    Attribute - type: class java.lang.Integer, name: COMPLEX_COMPONENT_IDENTIFIER, value: 0
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_FINE, value: ID_0
    Attribute - type: class java.lang.String, name: SNOW_ACCUMULATION, value: NONE_PRESENT
    Attribute - type: class java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0
    Attribute - type: class java.lang.String, name: BUILDING_CONSTRUCTION_TYPE, value: BRICK_CLAD_STEEL_FRAME
    Attribute - type: class java.lang.String, name: ROOF_SHAPE, value: FLAT
    Attribute - type: class java.lang.Double, name: ORIENTATION_ANGLE, value: 0.0
    Attribute - type: class java.lang.String, name: SOURCE, value: MISSING
    Attribute - type: class java.lang.String, name: ROOF_PREDOMINANT_SURFACE_MATERIAL, value: CONGLOMERATE
    Attribute - type: class java.lang.String, name: LIGHTING_CHARACTERIZATION, value: DIMLY_LIT
    Attribute - type: class java.lang.Double, name: OVERALL_VERTICAL_DIMENSION, value: 0.0
    Attribute - type: class java.lang.String, name: UNIVERSALLY_UNIQUE_ID, value: 9c6d352c4ca211e08459002421a8c4c6
    Attribute - type: class java.lang.String, name: FRONT_AND_AXIS_REFERENCE, value: POSITIVE_X
    Attribute - type: class java.lang.String, name: POINT_OBJECT_TYPE, value: VERT_STRUCTURE
    Attribute - type: class java.lang.Double, name: ILLUMINANCE, value: 1.0
    Attribute - type: class java.lang.String, name: PRIMARY_PRODUCT, value: NO_PRODUCT
    Attribute - type: class java.lang.Double, name: PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION, value:
0.0
    Attribute - type: class java.lang.Double, name: LENGTH, value: 15.0
    Attribute - type: class java.lang.String, name: USAGE, value: NON_MILITARY
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_MEDIUM, value: ID_20
    Attribute - type: class java.lang.Double, name: ROOF_LOAD_BEARING_CAPACITY, value: 2.5
    Attribute - type: class java.lang.String, name: NAME, value:
    Attribute - type: class java.lang.Double, name: GENERAL_DAMAGE_FRACTION, value: 7.0
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_COARSE, value: DEFAULT
    Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_AREA, value: 0.0
    Attribute - type: class java.lang.String, name: COLOURATION, value: BROWN
    Attribute - type: class java.lang.Double, name: EXTERIOR_WALL_THICKNESS, value: 0.25
    Attribute - type: class java.lang.Boolean, name: LADDER_PRESENT, value: true
    Attribute - type: class java.lang.String, name: COMBUSTION_STATE, value: NOT_BURNING
    Attribute - type: class java.lang.String, name: PRIMARY_ENTRANCE_LOCATION, value: FRONT_CENTRE_ON_GRADE
    Attribute - type: class java.lang.Integer, name: ANTENNA_COUNT, value: 0
    Attribute - type: class java.lang.Double, name: DEPTH_BELOW_SURFACE_LEVEL, value: 0.0
    Attribute - type: class java.lang.Double, name: WIDTH, value: 13.0
    Attribute - type: class java.lang.String, name: ROOF_PREDOMINANT_PATTERN, value: MOTTLED
    Attribute - type: class java.lang.String, name: WALL_PREDOMINANT_PATTERN, value: BRICK
    Attribute - type: class java.lang.Double, name: SURFACE_TEMPERATURE_QB_BUILDING_COMPONENT_TYPE, value: 15.0
    Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_DOOR_PRI_HEIGHT, value: 3.0
    Attribute - type: class java.lang.String, name: BUILDING_FUNCTION, value: HOUSE
    Attribute - type: class java.lang.Integer, name: OBJECT_VARIANT, value: 0
}
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [88] - Testing for attribute: Label
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [92] - skipping Label attribute
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [88] - Testing for attribute: LENGTH

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Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [88] - Testing for attribute: HEIGHT\_ABOVE\_SURFACE\_LEVEL  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [88] - Testing for attribute: WIDTH  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [112] - <<< TEST >>> Test PASS <<< TEST >>>  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunIntegrityTests\_0m [396] - DONE, with integrity tests for DataElement:  
9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_0m [343] - Updating capability: RegenRelatedDataElements  
state based on action results. confidence: Low All preconditions will be updated as well.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent\$RunIntegrityTests::\_[1mrun\_0m [249] - <<<PROCESS FUNCT>>>> DataElement  
INTEGRITY TESTS PASS <<<PROCESS FUNCT>>>>  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_0m [343] - Updating capability: RunDataElementIntegrityTest  
state based on action results. confidence: High All preconditions will be updated as well.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mmakeKnowledgeSourceContribution\_0m [399] -  
=====> Agent: DataElementAgent-OTF-Point-BUILDING-9c6d352c4ca211e08459002421a8c4c6  
Executing the proposed contribution Function: GeoScratchPadLayerIntegrityOK  
  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mreviewDataPanel\_0m [156] - Check DataPanel for inconsisten DataElements.  
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mupdateDataPanel\_0m [185] - Updating DataPanel with inconsisten DataElements.  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_0mdpbtbrgen.services.agents.KnowledgeSource::\_[1mmakeKnowledgeSourceContribution\_0m [412] -  
Function not mapped for KS capability: GeoScratchPadLayerIntegrityOK maybe a variable state update.  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mmakeKnowledgeSourceContribution\_0m [399] -  
=====> Agent: DataElementAgent-LTF-PRISM-Building Wall-LTF\_0X0X0\_1931  
Executing the proposed contribution Function: RunDataElementIntegrityTest  
  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mreviewDataPanel\_0m [156] - Check DataPanel for inconsisten DataElements.  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mupdateDataPanel\_0m [185] - Updating DataPanel with inconsisten DataElements.  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunIntegrityTests\_0m [276] -  
====> Running integrity test for DataElement: Building Wall  
  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetIntegrityTests\_0m [536] - Looking for DataElement integrity tests  
for class: LTFPrismBuildingWall, namespace: http://localhost/ontologies/TDBLiveLTF.owl#  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetIntegrityTests\_0m [549] - done, QUERY PROCESSING TIME: 10  
milliseconds.  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetIntegrityTests\_0m [555] -  
query result: ( ?integrityTestsStr = <http://localhost/ontologies/TDBTest.owl#TestInRequiredAttributes> )  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetIntegrityTests\_0m [557] -  
====> node: http://localhost/ontologies/TDBTest.owl#TestInRequiredAttributes  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunIntegrityTests\_0m [299] - running integrity tests

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Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunIntegrityTests_0m [307] - 0. test data: TEST_IN_REQ_ATTRIBUTES
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [43] - TestIntegRequiredAttributes Test
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_0mdpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [53] - USING TEMP
AttributeKnowledgeBase
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [73] - Changed DataElement attributes:
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [74] -
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Wall Texture, value: walls.png
    Attribute - type: class java.lang.String, name: Foliage Texture, value: leaves.png
    Attribute - type: class java.lang.String, name: Door Decal, value: door.png
    Attribute - type: class java.lang.String, name: Roof Texture, value: roof.png
    Attribute - type: class java.lang.String, name: Window Decal, value: window.png
}
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [88] - Testing for attribute: Label
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [92] - skipping Label attribute
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [112] - <<< TEST >>> Test PASS <<< TEST >>>
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunIntegrityTests_0m [396] - DONE, with integrity tests for DataElement:
LTF_0X0X0_1931
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::_[1mupdateAction_0m [343] - Updating capability: RegenRelatedDataElements
state based on action results. confidence: Low All preconditions will be updated as well.
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent$RunIntegrityTests::_[1mrun_0m [249] - <<<PROCESS FUNCT>>>> DataElement
INTEGRITY TESTS PASS <<<PROCESS FUNCT>>>>
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::_[1mupdateAction_0m [343] - Updating capability: RunDataElementIntegrityTest
state based on action results. confidence: High All preconditions will be updated as well.
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.agents.KnowledgeSource::_[1mmakeKnowledgeSourceContribution_0m [399] -

=====> Agent: DataElementAgent-LTF-PRISM-Building Wall-LTF_0X0X0_1931
Executing the proposed contribution Function: GeoScratchPadLayerIntegrityOK

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mreviewDataPanel_0m [156] - Check DataPanel for inconsisten DataElements.
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mupdateDataPanel_0m [185] - Updating DataPanel with inconsisten DataElements.
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_0mdpbtbrgen.services.agents.KnowledgeSource::_[1mmakeKnowledgeSourceContribution_0m [412] -
Function not mapped for KS capability: GeoScratchPadLayerIntegrityOK maybe a variable state update.
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.agents.KnowledgeSource::_[1mmakeKnowledgeSourceContribution_0m [399] -

=====> Agent: DataElementAgent-FLT-EXTREF_MODEL-AL015-FLT_0X0_-5941746916707185650
Executing the proposed contribution Function: RunDataElementIntegrityTest

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mreviewDataPanel_0m [156] - Check DataPanel for inconsisten DataElements.
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mupdateDataPanel_0m [185] - Updating DataPanel with inconsisten DataElements.
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

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INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunIntegrityTests\_][0m [276] -

====> Running integrity test for DataElement: AL015

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetIntegrityTests\_][0m [536] - Looking for DataElement integrity tests for class: FLTextRefModelBuilding, namespace: http://localhost/ontologies/TDBVirtualFLT.owl#

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetIntegrityTests\_][0m [549] - done, QUERY PROCESSING TIME: 8 milliseconds.

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetIntegrityTests\_][0m [555] - query result: ( ?integrityTestsStr = <http://localhost/ontologies/TDBTest.owl#TestInRequiredAttributes> )

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetIntegrityTests\_][0m [557] -  
====> node: http://localhost/ontologies/TDBTest.owl#TestInRequiredAttributes

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunIntegrityTests\_][0m [299] - running integrity tests

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunIntegrityTests\_][0m [307] - 0. test data: TEST\_IN\_REQ\_ATTRIBUTES

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_][0m [43] - TestIntegRequiredAttributes Test

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_][0mdpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_][0m [53] - USING TEMP AttributeKnowledgeBase

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_][0m [73] - Changed DataElement attributes:

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_][0m [74] - net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen\_Attributes

```
{  
    Attribute - type: class java.lang.Double, name: WID, value: 10.0  
    Attribute - type: class java.lang.Double, name: HGT, value: 4.0  
    Attribute - type: class java.lang.String, name: Label, value: AL015  
    Attribute - type: class java.lang.Double, name: AOO, value: 0.0  
    Attribute - type: class java.lang.Integer, name: EXS, value: 28  
    Attribute - type: class java.lang.Double, name: LNT, value: 10.0  
}
```

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_][0m [88] - Testing for attribute: WID

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_][0m [88] - Testing for attribute: HGT

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_][0m [88] - Testing for attribute: Label

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_][0m [92] - skipping Label attribute

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_][0m [88] - Testing for attribute: LNT

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_][0m [112] - <<< TEST >>> Test PASS <<< TEST >>>

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunIntegrityTests\_][0m [396] - DONE, with integrity tests for DataElement: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_][0m [343] - Updating capability: RegenRelatedDataElements state based on action results. confidence: Low All preconditions will be updated as well.

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent\$RunIntegrityTests::\_[1mrun\_][0m [249] - <<<PROCESS FUNCT>>>> DataElement INTEGRITY TESTS PASS <<<PROCESS FUNCT>>>>

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_][0m [343] - Updating capability: RunDataElementIntegrityTest state based on action results. confidence: High All preconditions will be updated as well.

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::[\_1makeKnowledgeSourceContribution\_0m [399] -

=====> Agent: DataElementAgent-FLT-EXTREF\_MODEL-AL015-FLT\_0X0\_-5941746916707185650  
Executing the proposed contribution Function: GeoScratchPadLayerIntegrityOK

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::[\_1mreviewDataPanel\_0m [156] - Check DataPanel for inconsisten DataElements.  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::[\_1mupdateDataPanel\_0m [185] - Updating DataPanel with inconsisten DataElements.  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_0mdpbtbrgen.services.agents.KnowledgeSource::[\_1makeKnowledgeSourceContribution\_0m [412] -  
Function not mapped for KS capability: GeoScratchPadLayerIntegrityOK maybe a variable state update.  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::[\_1mcheckForKnowledgeSourceContribution\_0m [86] - Controller: ask all registered  
KS for contributions  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::[\_1mcheckForKnowledgeSourceContribution\_0m [273] - Agent: DataElementAgent-  
OTF-Point-BUILDING-9c6d352c4ca211e08459002421a8c4c6 posting capability to task panel: RunDataElementCorrelation  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::[\_1mcheckForKnowledgeSourceContribution\_0m [273] - Agent: DataElementAgent-  
LTF-PRISM-Building Wall-LTF\_0X0X0\_1931 posting capability to task panel: RunDataElementCorrelation  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::[\_1mcheckForKnowledgeSourceContribution\_0m [273] - Agent: DataElementAgent-  
FLT-EXTREF\_MODEL-AL015-FLT\_0X0\_-5941746916707185650 posting capability to task panel: RunDataElementCorrelation  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::[\_1mdisplayTasksAndDataPanels\_0m [356] - DATA PANEL (count=13)  
\*\*ERROR\*\* label: CorrelatedDataElementsUniqueld-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist  
\*\*ERROR\*\* label: CorrelatedDataElementsUniqueld-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist  
\*\*ERROR\*\* label: CorrelatedDataElementsUniqueld-FromCreateCorrelatedDataElementsAgents does not exist  
\*\*ERROR\*\* label: CorrelatedDataElementsUniqueld-FromCreateCorrelatedDataElementsAgents does not exist  
\*\*ERROR\*\* label: CorrelatedDataElementsUniqueld-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist  
\*\*ERROR\*\* label: CorrelatedDataElementsUniqueld-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist  
\*\*ERROR\*\* label: CorrelatedDataElementsUniqueld-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist  
\*\*ERROR\*\* label: CorrelatedDataElementsUniqueld-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::[\_1mdisplayTasksAndDataPanels\_0m [373] -

## DATA PANEL

- =====  
1. name: CheckTdbRepoOntology, type: Goal, confidence: High  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | ]  
actions: CheckTdbRepoOntology, outputs: [CellOntologyExists, DataElementOntologyExists]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
2. name: CreateCellAgents, type: Goal, confidence: High  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -  
> object(true) | ]  
actions: CreateCellAgents, outputs: [CreateCellAgents]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
3. name: CreateDataElementAgents, type: Goal, confidence: High  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -  
> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(true) | ]  
actions: CreateDataElementAgents, outputs: [CreateDataElementAgents]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

4. name: RunDataElementIntegrityTest, type: Goal, confidence: High  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(DataElementOntologyExists) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(true) | ]  
actions: RunDataElementIntegrityTest, outputs: [GeoScratchPadLayerIntegrityOK, RegenRelatedDataElements]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
5. name: RegenDependentDataElements, type: Goal, confidence: Low  
preconditions: [subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(true) | subject(RegenRelatedDataElements) ^ predicate (And) -> object(true) | ]  
actions: RegenRelatedDataElements, outputs: [RunDataElementIntegrityTest]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
- \*6. name: RunCorrelation, type: Goal, confidence: None  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(true) | subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(true) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(true) | ]  
actions: RunDataElementCorrelation, outputs: [DataElementsCorrelated, RegenGSPDataElement]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
- \*7. name: RegenDataElementsAfterCorrFailure, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(true) | subject(RegenGSPDataElement) ^ predicate (And) -> object(false) | ]  
actions: RegenGSPDataElement, outputs: [RunDataElementIntegrityTest, GeoScratchPadLayerIntegrityOK]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
- \*8. name: RegenGeoScratchPadCells, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(true) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(true) | subject(RegenGSPDataElement) ^ predicate (And) -> object(false) | subject(RegenGSPCells) ^ predicate (And) -> object(false) | ]  
actions: RegenGSPCells, outputs: [RunDataElementCorrelation, DataElementsCorrelated]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
- \*9. name: RunCellCorrelation, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(true) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(true) | subject(DataElementsCorrelated) ^ predicate (And) -> object(false) | ]  
actions: RunCellCorrelation, outputs: [GeoScratchPadCorrelated]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
- \*10. name: CorrelatedDataElementsUniqueId-FromPostCorrelatedDataElementUniqueIdsToDataPanel, type: InformationDATA ITEM - pring not implemented.
- \*11. name: CorrelatedDataElementsUniqueId-FromCreateCorrelatedDataElementsAgents, type: InformationDATA ITEM - pring not implemented.
- \*12. name: CorrelatedDataElementsUniqueId-FromPostCorrelatedDataElementUniqueIdsToDataPanel, type: InformationDATA ITEM - pring not implemented.
- \*13. name: CorrelatedDataElementsUniqueId-FromPostCorrelatedDataElementUniqueIdsToDataPanel, type: InformationDATA ITEM - pring not implemented.

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::[\_1mdisplayTasksAndDataPanels \_[0m [377] - TASK PANEL (count=3)  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::[\_1mdisplayTasksAndDataPanels \_[0m [388] -  
TASKS  
0. name: DataElementAgent-OTF-Point-BUILDING-9c6d352c4ca211e08459002421a8c4c6, type: Task, priority: 1, \_ks: DataElementAgent-OTF-Point-BUILDING-9c6d352c4ca211e08459002421a8c4c6, task: RunDataElementCorrelation  
1. name: DataElementAgent-LTF-PRISM-Building Wall-LTF\_0X0X0\_1931, type: Task, priority: 1, \_ks: DataElementAgent-LTF-PRISM-Building Wall-LTF\_0X0X0\_1931, task: RunDataElementCorrelation

2. name: DataElementAgent-FLT-EXTREF\_MODEL-AL015-FLT\_0X0\_-5941746916707185650, type: Task, priority: 1, \_ks: DataElementAgent-FLT-EXTREF\_MODEL-AL015-FLT\_0X0\_-5941746916707185650, task: RunDataElementCorrelation

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mmakeKnowlegeSourceContribution\_[0m [146] - Controller: reviews and selects KS based on proposed contribution

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mmakeKnowlegeSourceContribution\_[0m [399] -

=====> Agent: DataElementAgent-OTF-Point-BUILDING-9c6d352c4ca211e08459002421a8c4c6  
Executing the proposed contribution Function: RunDataElementCorrelation

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mreviewDataPanel\_[0m [156] - Check DataPanel for inconsisten DataElements.  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mupdateDataPanel\_[0m [185] - Updating DataPanel with inconsisten DataElements.  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent\$RunCorrelationTests::\_[1mrun\_[0m [428] - DATA ELEMENT CORRELATION TESTS

...  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_[0m [458] -

====> Running correlation test , for DataElement label: BUILDING, unique id: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetCorrelationTests\_[0m [593] - Looking for DataElement correlation tests for class: OTFPBuilding, namespace: http://localhost/ontologies/TDBConstructiveOTF.owl#

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetCorrelationTests\_[0m [611] -  
query result: ( ?correlationTestsStr = <http://localhost/ontologies/TDBTest.owl#TestCorrCultureExistence> )

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_[0mdpbtbrgen.services.ontology.SparqlDLInterogator::\_[1mgetTestDataFromIndividual\_[0m [3367] -

====>test Individual does not have hasTestParameters property (paramaterStatement == null)

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetCorrelationTests\_[0m [611] -  
query result: ( ?correlationTestsStr = <http://localhost/ontologies/TDBTest.owl#TestCorrCultureAttributes> )

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_[0m [490] - running correlation tests (2)

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_[0m [498] - 0. testName:  
TEST\_CORR\_CULTURE\_EXISTANSE for DataElement: BUILDING, unique id: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_[0m [692] - \*\*\*\*\* Looking for isCorrelatedTo DataElements for DataElement label: BUILDING. UniqueId: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_[0mdpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_[0m [702] -  
\*\*\*\*\* TODO: set index 0 to this DataElement

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_[0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_[0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_[0m [1082] -  
Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_[0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation



SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.ontology.OntologySparqlDLInterrogator::\_[1mgetCorrelatedToDataElementsFromIndividual\_0m [3730] - DONE extracting number of correlated DataElements unique ids: 2  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [811] - individual: LTF-LTFPrismBuildingWall-1835992364 not found on layer: OTF\_FEATURES-Point  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon - 117.021802 Deg  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [799] - Found isCorrelatedTo DataElements for individual: LTF-LTFPrismBuildingWall-1835992364 on layer: LTF\_FEATURES-PRISM  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [811] - individual: FLT-FLTextRefModelBuilding-1733339979 not found on layer: OTF\_FEATURES-Point  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon - 117.021802 Deg  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [811] - individual: FLT-FLTextRefModelBuilding-1733339979 not found on layer: LTF\_FEATURES-PRISM  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg ne: Geodetic: lat 34.891683 lon - 117.021688 Deg  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_187  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg ne: Geodetic: lat 34.891683 lon - 117.021688 Deg

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_188

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [811] - individual: FLT-FLTExtRefModelBuilding-1733339979 not found on layer: LTF\_FEATURES-CYLINDER

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon - 116.591753 Deg

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [799] - Found isCorrelatedTo DataElements for individual: FLT-FLTExtRefModelBuilding-1733339979 on layer: FLT\_FEATURES-EXTREF\_MODEL

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_0m [529] - initializing correlation test

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_0m [533] - running correlation test

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.tests.TestCorrCultureExistence::\_[1mrun\_0m [58] - TestCorrCultureExistence Test, num layers: 4 num affected DataElements: 3

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.tests.TestCorrCultureExistence::\_[1mrun\_0m [77] - DataElement 0 onto class: OTFPBuilding, extents: sw: Geodetic: lat 34.891128 lon -117.022169 Deg ne: Geodetic: lat 34.891683 lon -117.021614 Deg

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.tests.TestCorrCultureExistence::\_[1mrun\_0m [90] - DataElement 1 is Building Wall

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.tests.TestCorrCultureExistence::\_[1mrun\_0m [90] - DataElement 2 is AL015

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.tests.TestCorrCultureExistence::\_[1mrun\_0m [107] - <<< TEST >>> Test PASS <<< TEST >>>

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_0m [588] - Correlation test: TEST\_CORR\_CULTURE\_EXISTANCE PASS - no need to regenerate

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_0m [498] - 1. testName: TEST\_CORR\_CULTURE\_ATTRIBUTES for DataElement: BUILDING, unique id: 9c6d352c4a211e08459002421a8c4c6

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [692] - \*\*\*\*\* Looking for isCorrelatedTo DataElements for DataElement label: BUILDING. UniqueId: 9c6d352c4a211e08459002421a8c4c6

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log error

SEVERE: [34m\*\*\*[ERROR]\*\*\*\_0mdpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [702] - \*\*\*\*\* TODO: set index 0 to this DataElement

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_[0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterrogator::\_[1mgetCorrelatedToDataElementsFromIndividual\_[0m [3730] - DONE extracting number of correlated DataElements unique ids: 2  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_[0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg  
Aug 4, 2011 3:51:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_[0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_[0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_[0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_[0m [811] - individual: LTF-LTFPrismBuildingWall-1835992364 not found on layer: OTF\_FEATURES-Point  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_[0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_[0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon - 117.021802 Deg  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_[0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_[0m [799] - Found isCorrelatedTo DataElements for individual: LTF-LTFPrismBuildingWall-1835992364 on layer: LTF\_FEATURES-PRISM  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_[0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_[0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_[0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_[0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_[0m [811] - individual: FLT-FLTExtRefModelBuilding-1733339979 not found on layer: OTF\_FEATURES-Point  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_[0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_[0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon - 117.021802 Deg  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_[0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_[0m [811] - individual: FLT-FLTExtRefModelBuilding-1733339979 not found on layer: LTF\_FEATURES-PRISM  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_[0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_[0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg ne: Geodetic: lat 34.891683 lon - 117.021688 Deg  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_[0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_187  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_[0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_[0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg ne: Geodetic: lat 34.891683 lon - 117.021688 Deg  
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

```

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetDataElementFromUniqueIdentifier_[0m [1074] - Looking for
DataElement with uniqueIdentifier: LTF_0X0X0_188
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mgetCorrelatedToDataElements_[0m [811] - individual: FLT-
FLTExtRefModelBuilding-173339979 not found on layer: LTF_FEATURES-CYLINDER
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation
SEVERE: _[35m***[LIMITATION]***_[0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mgetTDBName_[0m [1082] -
Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon -
116.591753 Deg
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetDataElementFromUniqueIdentifier_[0m [1074] - Looking for
DataElement with uniqueIdentifier: FLT_0X0_-5941746916707185650
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mgetCorrelatedToDataElements_[0m [799] - Found isCorrelatedTo DataElements for
individual: FLT-FLTExtRefModelBuilding-173339979 on layer: FLT_FEATURES-EXTREF_MODEL
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunCorrelationTests_[0m [529] - initializing correlation test
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunCorrelationTests_[0m [533] - running correlation test
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mrun_[0m [69] - TestCorrAttributeCompare Test, num layers: 4 num affected
DataElements: 3
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mrun_[0m [88] - DataElement 0 onto class: OTFPBuilding, extents: sw:
Geodetic: lat 34.891128 lon -117.022169 Deg ne: Geodetic: lat 34.891683 lon -117.021614 Deg
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mrun_[0m [101] - DataElement 1 is Building Wall
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [168] -

```

=====> Comparing attributes between DataElement9c6d352c4ca211e08459002421a8c4c6 and LTF\_0X0X0\_1931

```

Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [179] -
dataElementUnderTestAttributes :net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Label, value: BUILDING
    Attribute - type: class java.lang.Double, name: LENGTH, value: 10.0
    Attribute - type: class java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0
    Attribute - type: class java.lang.Double, name: WIDTH, value: 10.0
}
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [192] -
otherElementUnderTestAttributes :net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Label, value: Building Wall
}
Aug 4, 2011 3:51:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [203] - comparing attribute: Attribute - type: class
java.lang.String, name: Label, value: BUILDING other fmt: LTF
Aug 4, 2011 3:51:31 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_[0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::_[1mgetSameAsAttributeIndividual_[0m
[4836] - Invalid coding catalog: Other
Aug 4, 2011 3:51:31 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [359] - mapped attribute resource: namespace:
http://localhost/ontologies/TDBStructure.owl#, name: LtfTreeTrunk name: Label
Aug 4, 2011 3:51:31 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_[0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [368] - mapped attribute
resource: Label does not exist. Creating Attribute_UKN.
Aug 4, 2011 3:51:31 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [234] - Found Attribute_UKN. Indicates that the
DataElement on GeoScratchPad lacks required correlated Attribute name: Label
Aug 4, 2011 3:51:31 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

```

INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_0m [203] - comparing attribute: Attribute - type: class java.lang.Double, name: LENGTH, value: 10.0 other fmt: LTF  
Aug 4, 2011 3:51:31 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::\_[1mgetSameAsAttributeIndividual\_0m [4836] - Invalid coding catalog: Other  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mfindAttribute\_0m [359] - mapped attribute resource: namespace: http://localhost/ontologies/TDBStructure.owl#, name: EALength name: LENGTH  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_0mdpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mfindAttribute\_0m [368] - mapped attribute resource: LENGTH does not exist. Creating Attribute\_UKN.  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_0m [234] - Found Attribute\_UKN. Indicates that the DataElement on GeoScratchPad lacks required correlated Attribute name: LENGTH  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_0m [240] - DataElement: failed test, but is already included in failedDataElements. Skip adding to failedDataElements  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_0m [203] - comparing attribute: Attribute - type: class java.lang.Double, name: HEIGHT\_ABOVE\_SURFACE\_LEVEL, value: 5.0 other fmt: LTF  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::\_[1mgetSameAsAttributeIndividual\_0m [4836] - Invalid coding catalog: Other  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mfindAttribute\_0m [359] - mapped attribute resource: namespace: http://localhost/ontologies/CodingCatalog.owl#, name: EAHeightAboveSurfaceLevel name: HGT  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_0mdpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mfindAttribute\_0m [368] - mapped attribute resource: HGT does not exist. Creating Attribute\_UKN.  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_0m [234] - Found Attribute\_UKN. Indicates that the DataElement on GeoScratchPad lacks required correlated Attribute name: HEIGHT\_ABOVE\_SURFACE\_LEVEL  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_0m [240] - DataElement: failed test, but is already included in failedDataElements. Skip adding to failedDataElements  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_0m [203] - comparing attribute: Attribute - type: class java.lang.Double, name: WIDTH, value: 10.0 other fmt: LTF  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::\_[1mgetSameAsAttributeIndividual\_0m [4836] - Invalid coding catalog: Other  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mfindAttribute\_0m [359] - mapped attribute resource: namespace: http://localhost/ontologies/TDBStructure.owl#, name: EAWidth name: WID  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_0mdpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mfindAttribute\_0m [368] - mapped attribute resource: WID does not exist. Creating Attribute\_UKN.  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_0m [234] - Found Attribute\_UKN. Indicates that the DataElement on GeoScratchPad lacks required correlated Attribute name: WIDTH  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_0m [240] - DataElement: failed test, but is already included in failedDataElements. Skip adding to failedDataElements  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mrun\_0m [120] - DataElement attribute compare failed.  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mrun\_0m [125] - DataElement: failed test, but is already included in failedDataElements. Skip adding to failedDataElements  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mrun\_0m [101] - DataElement 2 is AL015  
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_0m [168] -

=====> Comparing attributes between DataElement9c6d352c4ca211e08459002421a8c4c6 and FLT\_0X0\_-5941746916707185650

```
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [179] -
dataElementUnderTestAttributes :net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Label, value: BUILDING
    Attribute - type: class java.lang.Double, name: LENGTH, value: 10.0
    Attribute - type: class java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0
    Attribute - type: class java.lang.Double, name: WIDTH, value: 10.0
}
```

```
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [192] -
otherElementUnderTestAttributes :net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.Double, name: WID, value: 10.0
    Attribute - type: class java.lang.Double, name: HGT, value: 4.0
    Attribute - type: class java.lang.String, name: Label, value: AL015
    Attribute - type: class java.lang.Double, name: LNT, value: 10.0
}
```

```
Aug 4, 2011 3:51:32 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [203] - comparing attribute: Attribute - type: class
java.lang.String, name: Label, value: BUILDING other fmt: FLT
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_][0m [359] - mapped attribute resource: namespace:
http://localhost/ontologies/TDBStructure.owl#, name: LtfTreeTrunk name: Label
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [247] - ATTRIBUTE: Attribute - type: class
java.lang.String, name: Label, value: BUILDING maps to format: FLT as attribute: Attribute - type: class java.lang.String, name: Label, value:
AL015 COMPARE attributes values
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_][0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mareValuesAcceptable_][0m [404] -
=====> UNDER DEBUG <=====
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [254] - Attribute value compare between Label and
Label determined that values differences are ***NOT*** acceptable. Regenerate to fix.
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [203] - comparing attribute: Attribute - type: class
java.lang.Double, name: LENGTH, value: 10.0 other fmt: FLT
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_][0m [359] - mapped attribute resource: namespace:
http://localhost/ontologies/TDBStructure.owl#, name: FALength name: LENGTH
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_][0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_][0m [368] - mapped attribute
resource: LENGTH does not exist. Creating Attribute_UKN.
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [234] - Found Attribute_UKN. Indicates that the
DataElement on GeoScratchPad lacks required correlated Attribute name: LENGTH
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [240] - DataElement: failed test, but is already
included in failedDataElements. Skip adding to failedDataElements
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [203] - comparing attribute: Attribute - type: class
java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0 other fmt: FLT
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_][0m [359] - mapped attribute resource: namespace:
http://localhost/ontologies/TDBStructure.owl#, name: FAHeight name: HGT
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [247] - ATTRIBUTE: Attribute - type: class
java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0 maps to format: FLT as attribute: Attribute - type: class
java.lang.Double, name: HGT, value: 4.0 COMPARE attributes values
```

```
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
```

```

SEVERE: _[35m***[WARNING]***_ [0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mareValuesAcceptable_][0m [404] -
=====> UNDER DEBUG <=====
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tests.TestCorrAttributeCompare::_[1mareValuesAcceptable_][0m [415] - Double attribute values difference: 1.0
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [254] - Attribute value compare between
HEIGHT_ABOVE_SURFACE_LEVEL and HGT determined that values differences are ***NOT*** acceptable. Regenerate to fix.
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [261] - DataElement: failed test, but is already
included in failedDataElements. Skip adding to failedDataElements
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [203] - comparing attribute: Attribute - type: class
java.lang.Double, name: WIDTH, value: 10.0 other fmt: FLT
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_][0m [359] - mapped attribute resource: namespace:
http://localhost/ontologies/TDBStructure.owl#, name: FAWidth name: WID
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [247] - ATTRIBUTE: Attribute - type: class
java.lang.Double, name: WIDTH, value: 10.0 maps to format: FLT as attribute: Attribute - type: class java.lang.Double, name: WID, value: 10.0
COMPARE attributes values
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_ [0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mareValuesAcceptable_][0m [404] -
=====> UNDER DEBUG <=====
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tests.TestCorrAttributeCompare::_[1mareValuesAcceptable_][0m [415] - Double attribute values difference: 0.0
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tests.TestCorrAttributeCompare::_[1mareValuesAcceptable_][0m [417] - Double attribute values within tolerance:
0.0010
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_][0m [265] - Attribute value compare between WIDTH and
WID determined that values differences are acceptable.
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tests.TestCorrAttributeCompare::_[1mrun_][0m [120] - DataElement attribute compare failed.
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tests.TestCorrAttributeCompare::_[1mrun_][0m [125] - DataElement: failed test, but is already included in
failedDataElements. Skip adding to failedDataElements
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tests.TestCorrAttributeCompare::_[1mrun_][0m [134] - <<< TEST >>> Test FAILS <<< TEST >>>
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.agents.DataElementAgent::_[1mrunCorrelationTests_][0m [546] -

****> OTF - CORRELATION TEST: TEST_CORR_CULTURE_ATTRIBUTES*** FAILED***, for DataElement: BUILDING, unique id:
9c6d352c4ca21e08459002421a8c4c6, regenerate (2) uncorrelated DataElements

Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.agents.DataElementAgent::_[1mrunCorrelationTests_][0m [558] - DataElement unique id: LTF_0X0X0_1931
***FAILED*** Correlation Test: TEST_CORR_CULTURE_ATTRIBUTES regenerate.
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.agents.DataElementAgent::_[1mrunCorrelationTests_][0m [558] - DataElement unique id: FLT_0X0_ -
5941746916707185650 ***FAILED*** Correlation Test: TEST_CORR_CULTURE_ATTRIBUTES regenerate.
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.agents.DataElementAgent::_[1mupdateDataPanel_][0m [185] - Updating DataPanel with inconsisten DataElements.
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.agents.DataElementAgent::_[1mupdateDataPanel_][0m [200] - Found inconsistent DataElements (2), posting to
DataPanel.
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.blackboard.BlackBoardDataPanel::_[1mpost_][0m [48] - DataItem contains inconsistent DataElements
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.agents.DataElementAgent::_[1mrunCorrelationTests_][0m [592] - DONE, with correlation tests for DataElement:
9c6d352c4ca21e08459002421a8c4c6
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info

```

INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_][0m [343] - Updating capability: RegenGSPDataElement state based on action results. confidence: High All preconditions will be updated as well.  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent\$RunCorrelationTests::\_[1mrun\_][0m [439] - <<<PROCESS FUNCT>>>> DataElement CORRELATION TESTS \*\*\*FAILED\*\*\* <<<PROCESS FUNCT>>>>  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_][0m [343] - Updating capability: RunDataElementCorrelation state based on action results. confidence: High All preconditions will be updated as well.  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mmakeKnowledgeSourceContribution\_][0m [399] -

=====> Agent: DataElementAgent-LTF-PRISM-Building Wall-LTF\_0X0X0\_1931  
Executing the proposed contribution Function: RunDataElementCorrelation

Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mreviewDataPanel\_][0m [156] - Check DataPanel for inconsisten DataElements.  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataPanel::\_[1mcontainsInconsistentDataElement\_][0m [246] - Found inconsisten DataElement unique id: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mreviewDataPanel\_][0m [160] - Found DataElement in inconsistent DataElements list, regenerating.  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mreviewDataPanel\_][0m [166] - Regenerating inconsisten DataElement: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mregenerate\_][0m [1067] - Regenerating DataElement for DataElement: Building Wall  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetTransformationModels\_][0m [652] - Looking for DataElement transformation models.  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterrogator::\_[1mqueryOntologyForTransformationModel\_][0m [989] - Looking for DataElement transformation model.  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetTransformationModels\_][0m [663] - done, QUERY PROCESSING TIME: 4 miliseconds.  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetTransformationModels\_][0m [669] - query result: (?transformationModelStr = <http://localhost/ontologies/TDBLiveLTF.owl#LTFTransfModelPrismBuilding> )  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mregenerate\_][0m [1089] - Running transformation functions  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mregenerate\_][0m [1103] - 0. model data:  
LTF\_TRANS\_MODEL\_PRISM\_BUILDING  
Aug 4, 2011 3:51:33 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_][0mdpbtbrgen.services.models.ModelFactory::\_[1m<init>\_][0m [59] - Partial Model Transformation mapping. Implemented - , OTF transformations: OTF\_TRANS\_MODEL\_LINE\_BRIDGE, OTF\_TRANS\_MODEL\_POINT\_BRIDGE\_SPAN, OTF\_TRANS\_MODEL\_LINE\_ROAD, LTF transformations: LTF\_TRANS\_MODEL\_PRISM\_BUILDING, LTF\_TRANS\_MODEL\_CYLINDER\_TREE, FLT transformations: FLT\_TRANS\_MODEL\_EXTREF\_BUILDING, FLT\_TRANS\_MODEL\_EXTREF\_BRIDGE  
IOException while opening log file:./dpbtbrgen.log Exeception: java.io.IOException: Couldn't get lock for ./dpbtbrgen.log  
IOException while opening log file:./dpbtbrgen.log Exeception: java.io.IOException: Couldn't get lock for ./dpbtbrgen.log  
IOException while opening log file:./dpbtbrgen.log Exeception: java.io.IOException: Couldn't get lock for ./dpbtbrgen.log  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_][0mdpbtbrgen.services.models.FLTModelTransform::\_[1m<init>\_][0m [48] - Transformation data is limited. A more exhaustive mapping will need to be eventually implemented. Only provided enough for proof of concept / experiment runs.  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_][0mdpbtbrgen.services.models.FLTModelTransform::\_[1m<init>\_][0m [55] - Only implemented EXS, NOS, WID attribute to geometry mappings.  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_][0mdpbtbrgen.services.models.FLTModelTransform::\_[1m<init>\_][0m [76] - Only implemented EXS state values (Operational=28,Damage=66,Destroyed=7) to model file names.



Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.models.FLTModelTransform::\_1m<init>\_0m [77] - Only 261bridge and  
1ae4c4f1-812a-674e-99c2-cfa0c65d28d51 model file names mapped.  
IOException while opening log file:./dpbtbrngen.log Exeception: java.io.IOException: Couldn't get lock for ./dpbtbrngen.log  
IOException while opening log file:./dpbtbrngen.log Exeception: java.io.IOException: Couldn't get lock for ./dpbtbrngen.log  
IOException while opening log file:./dpbtbrngen.log Exeception: java.io.IOException: Couldn't get lock for ./dpbtbrngen.log  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.agents.DataElementAgent::\_1mgetCorrelatedToDataElements\_0m [692] - \*\*\*\*\* Looking for isCorrelatedTo  
DataElements for DataElement label: Building Wall. UniqueId: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log error  
SEVERE: [34m\*\*\*[ERROR]\*\*\*\_0mdpbtbrngen.services.agents.DataElementAgent::\_1mgetCorrelatedToDataElements\_0m [702] -  
\*\*\*\*\* TODO: set index 0 to this DataElement  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_1mgetTDBName\_0m [1082] -  
Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -  
117.021802 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_1mgetTDBName\_0m [1082] -  
Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -  
117.021802 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for  
DataElement with uniqueIdentifier: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.ontology.OntologySparqlDLInterrogator::\_1mgetCorrelatedToDataElementsFromIndividual\_0m [3730] - DONE  
extracting number of correlated DataElements unique ids: 2  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.geoscratchpad.TdbGen\_Geometry::\_1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon -  
117.021892 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_1mgetTDBName\_0m [1082] -  
Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon -  
117.021892 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for  
DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.DataElementAgent::\_1mgetCorrelatedToDataElements\_0m [799] - Found isCorrelatedTo DataElements for  
individual: OTF-OTFPBuilding-658244779 on layer: OTF\_FEATURES-Point  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.geoscratchpad.TdbGen\_Geometry::\_1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon -  
117.021892 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_1mgetTDBName\_0m [1082] -  
Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon -  
117.021892 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for  
DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.DataElementAgent::\_1mgetCorrelatedToDataElements\_0m [811] - individual: FLT-  
FLTExtRefModelBuilding-1733339979 not found on layer: OTF\_FEATURES-Point  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_1mgetTDBName\_0m [1082] -  
Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -  
117.021802 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for  
DataElement with uniqueIdentifier: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.DataElementAgent::\_1mgetCorrelatedToDataElements\_0m [811] - individual: FLT-  
FLTExtRefModelBuilding-1733339979 not found on layer: LTF\_FEATURES-PRISM  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg ne: Geodetic: lat 34.891683 lon - 117.021688 Deg

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_187

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg ne: Geodetic: lat 34.891683 lon - 117.021688 Deg

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_188

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [811] - individual: FLT-FLTEExtRefModelBuilding-173339979 not found on layer: LTF\_FEATURES-CYLINDER

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon - 116.591753 Deg

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [799] - Found isCorrelatedTo DataElements for individual: FLT-FLTEExtRefModelBuilding-173339979 on layer: FLT\_FEATURES-EXTREF\_MODEL

IOException while opening log file: ./dpbtbrngen.log Exception: java.io.IOException: Couldn't get lock for ./dpbtbrngen.log

IOException while opening log file: ./dpbtbrngen.log Exception: java.io.IOException: Couldn't get lock for ./dpbtbrngen.log

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.TestIntiAttributesKnowledgeBase::\_[1minitializeDefaultAttributes\_0m [57] - Limited default feature attributes. Needs to be implemented on ontology.

IOException while opening log file: ./dpbtbrngen.log Exception: java.io.IOException: Couldn't get lock for ./dpbtbrngen.log

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitRequiredAttributes::\_[1minitializeOTFDefaultAttributes\_0m [42] - Partial attribute support for Bridge line, bridge span, point building, line road only.

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitRequiredAttributes::\_[1mgetOtfPointBridgeSpanAttributes\_0m [285] - Temp DataElement attributes - FIXME Feb 23.

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitRequiredAttributes::\_[1minitializeLTFDefaultAttributes\_0m [360] - Partial attribute support for prism bridge, and prism building only.

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitRequiredAttributes::\_[1minitializeFLTDefaultAttributes\_0m [481] - Partial attribute support for building and bridge building only.

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.TestIntiAttributesKnowledgeBase::\_[1minitializeCorrelationAttributes\_0m [81] - Limited correlated feature attributes. Needs to be implemented on ontology.

IOException while opening log file: ./dpbtbrngen.log Exception: java.io.IOException: Couldn't get lock for ./dpbtbrngen.log

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitCorrelatedAttributes::\_[1minitializeOTFCorrelatedAttributes\_0m [41] - Partial correlated attribute support for Bridge line, bridge span, point building, line road only.

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitCorrelatedAttributes::\_[1minitializeLTFCorrelatedAttributes\_0m [312] - Partial attribute support for prism bridge, and prism building only.

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitCorrelatedAttributes::\_[1minitializeFLTCorrelatedAttributes\_0m [416] - Partial attribute support for building and bridge building only.

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgenerateFinalSetOfTransformationParamaters\_0m [1192] - DataElement unique id: LTF\_0X0X0\_1931

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.agents.DataElementAgent:: [1modifyUsingIntegrityTestsResults [0m [1225] - FLT runIntegrityTests not implemented.  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.agents.DataElementAgent:: [1modifyUsingCorrelationTestsResults [0m [1245] - FLT - Only updating EXS attribute - hard coded to Destroyed = 7.  
IOException while opening log file:./dpbtbrgen.log Exception: java.io.IOException: Couldn't get lock for ./dpbtbrgen.log  
IOException while opening log file:./dpbtbrgen.log Exception: java.io.IOException: Couldn't get lock for ./dpbtbrgen.log  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tests.TestIntiAttributesKnowledgeBase:: [1mitalizeDefaultAttributes [0m [57] - Limited default feature attributes. Needs to be implemented on ontology.  
IOException while opening log file:./dpbtbrgen.log Exception: java.io.IOException: Couldn't get lock for ./dpbtbrgen.log  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tests.InitRequiredAttributes:: [1mitalizeOTFDefaultAttributes [0m [42] - Partial attribute support for Bridge line, bridge span, point building, line road only.  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tests.InitRequiredAttributes:: [1mgetOfPointBridgeSpanAttributes [0m [285] - Temp DataElement attributes - FIXME Feb 23.  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tests.InitRequiredAttributes:: [1mitalizeLTFDefaultAttributes [0m [360] - Partial attribute support for prism bridge, and prism building only.  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tests.InitRequiredAttributes:: [1mitalizeFLTDefaultAttributes [0m [481] - Partial attribute support for building and bridge building only.  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tests.TestIntiAttributesKnowledgeBase:: [1mitalizeCorrelationAttributes [0m [81] - Limited correlated feature attributes. Needs to be implemented on ontology.  
IOException while opening log file:./dpbtbrgen.log Exception: java.io.IOException: Couldn't get lock for ./dpbtbrgen.log  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tests.InitCorrelatedAttributes:: [1mitalizeOTFCorrelatedAttributes [0m [41] - Partial correlated attribute support for Bridge line, bridge span, point building, line road only.  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tests.InitCorrelatedAttributes:: [1mitalizeLTFCorrelatedAttributes [0m [312] - Partial attribute support for prism bridge, and prism building only.  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tests.InitCorrelatedAttributes:: [1mitalizeFLTCorrelatedAttributes [0m [416] - Partial attribute support for building and bridge building only.  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mgenerateFinalSetOfTransformationParamaters [0m [1214] - num of parameters: 2  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
INFO: dpbtbrgen.services.models.LTFModelTransform:: [1mrun [0m [82] -

=====> LTF Transformation: num layers: 4 num affected DataElements: 3

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.models.LTFModelTransform:: [1mrun [0m [98] - DataElement unique id: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.models.LTFModelTransform:: [1mprocessGeometryTransformations [0m [129] - LTF geometry transformations not implemented.  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.models.LTFModelTransform:: [1mprocessAttributeTransformations [0m [155] - LTF processAttributeTransformations - include attribute to attributes and attribute to geometry. num model parameters: 2  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.models.ModelParameters:: [1mgetAttributeList [0m [63] - num parameters in model: 0  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.models.LTFModelTransform:: [1mprocessAttributeTransformations [0m [170] - num parameter attributes: 0  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log warning  
SEVERE: [35m\*\*\*[WARNING]\*\*\* [0mdpbtbrgen.services.models.LTFModelTransform:: [1mprocessAttributeTransformations [0m [172] - no attributes in parameter list  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.models.ModelParameters:: [1mgetAttributeList [0m [63] - num parameters in model: 1  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug

```
INFO: dpbtbrgen.services.models.ModelParameters::_[1mgetAttributeList_0m [68] - processing parameter: DataElementDescriptor::Parameter
Object {
  ontoClassName: TransformationParameter
  ontoIndividualName: AttributeNameValue
  name: EXS
  value number: 7
}
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntiAttributesKnowledgeBase::_[1misAnAttribute_0m [161] - =====> UNDER DEBUG.
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntiAttributesKnowledgeBase::_[1misAnAttribute_0m [171] - =====> match found on required attribute list
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.models.LTFModelTransform::_[1mprocessAttributeTransformations_0m [170] - num parameter attributes: 1
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]*** _[0mdpbtbrgen.services.models.LTFModelTransform::_[1mprocessAttributeTransformations_0m [204]
- Attribute: EXS does not exit on DataElement: LTF_0X0X0_1931
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mregenerate_0m [1153] -
```

```
=====> REGENERATION SUCCESSFUL regeneration of DataElement: Building Wall, unique id: LTF_0X0X0_1931 layer:
LTF_FEATURES.
Setting IsChanged flag on DataElement source format: LTF
```

```
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent$RegenerateDataElement::_[1mrun_0m [1030] - <<<PROCESS FUNCT>>>>
DataElement regenerated successfully. <<<PROCESS FUNCT>>>>
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::_[1mupdateAction_0m [343] - Updating capability: RegenGSPDataElement state
based on action results. confidence: High All preconditions will be updated as well.
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::_[1mupdateAction_0m [343] - Updating capability: RunDataElementIntegrityTest
state based on action results. confidence: None All preconditions will be updated as well.
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mreviewDataPanel_0m [169] - Running integrity tests on regenerated
DataElements.LTF_0X0X0_1931
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunIntegrityTests_0m [276] -
```

```
====> Running integrity test for DataElement: Building Wall
```

```
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetIntegrityTests_0m [536] - Looking for DataElement integrity tests
for class: LTFPrismBuildingWall, namespace: http://localhost/ontologies/TDBLiveLTF.owl#
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetIntegrityTests_0m [549] - done, QUERY PROCESSING TIME: 2
milliseconds.
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetIntegrityTests_0m [555] -
query result: ( ?IntegrityTestsStr = <http://localhost/ontologies/TDBTest.owl#TestInRequiredAttributes> )
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetIntegrityTests_0m [557] -
====> node: http://localhost/ontologies/TDBTest.owl#TestInRequiredAttributes
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunIntegrityTests_0m [299] - running integrity tests
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunIntegrityTests_0m [307] - 0. test data: TEST_IN_REQ_ATTRIBUTES
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [43] - TestIntegRequiredAttributes Test
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]*** _[0mdpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [53] - USING TEMP
AttributeKnowledgeBase
```

```

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [73] - Changed DataElement attributes:
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [74] -
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Wall Texture, value: walls.png
    Attribute - type: class java.lang.String, name: Foliage Texture, value: leaves.png
    Attribute - type: class java.lang.String, name: Door Decal, value: door.png
    Attribute - type: class java.lang.String, name: Roof Texture, value: roof.png
    Attribute - type: class java.lang.String, name: Window Decal, value: window.png
}
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [88] - Testing for attribute: Label
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [92] - skipping Label attribute
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntegRequiredAttributes::_[1mrun_0m [112] - <<< TEST >>> Test PASS <<< TEST >>>
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunIntegrityTests_0m [396] - DONE, with integrity tests for DataElement:
LTF_0X0X0_1931
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::_[1mupdateAction_0m [343] - Updating capability: RegenRelatedDataElements
state based on action results. confidence: Low All preconditions will be updated as well.
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent$RunIntegrityTests::_[1mrun_0m [249] - <<<PROCESS FUNCT>>>> DataElement
INTEGRITY TESTS PASS <<<PROCESS FUNCT>>>>
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::_[1mupdateAction_0m [343] - Updating capability: RunDataElementIntegrityTest
state based on action results. confidence: High All preconditions will be updated as well.
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mupdateDataPanel_0m [185] - Updating DataPanel with inconsisten DataElements.
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent$RunCorrelationTests::_[1mrun_0m [428] - DATA ELEMENT CORRELATION TESTS
...
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunCorrelationTests_0m [458] -

```

====> Running correlation test , for DataElement label: Building Wall, unique id: LTF\_0X0X0\_1931

```

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetCorrelationTests_0m [593] - Looking for DataElement correlation
tests for class: LTFPrismBuildingWall, namespace: http://localhost/ontologies/TDBLiveLTF.owl#
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetCorrelationTests_0m [611] -
query result: ( ?correlationTestsStr = <http://localhost/ontologies/TDBTest.owl#TestCorrCultureAttributes> )
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetCorrelationTests_0m [611] -
query result: ( ?correlationTestsStr = <http://localhost/ontologies/TDBTest.owl#TestCorrCultureExistence> )
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::_[1mgetTestDataFromIndividual_0m
[3367] -
====>test Individual does not have hasTestParameters property (paramaterStatement == null)
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunCorrelationTests_0m [490] - running correlation tests (2)
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunCorrelationTests_0m [498] - 0. testName:
TEST_CORR_CULTURE_ATTRIBUTES for DataElement: Building Wall, unique id: LTF_0X0X0_1931
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mgetCorrelatedToDataElements_0m [692] - ***** Looking for isCorrelatedTo
DataElements for DataElement label: Building Wall. UniqueId: LTF_0X0X0_1931
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log error

```

SEVERE: [34m\*\*\*[ERROR]\*\*\* [0mdpbtbrgen.services.agents.DataElementAgent:: [1mgetCorrelatedToDataElements [0m [702] -  
\*\*\*\*\* TODO: set index 0 to this DataElement  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName [0m [1082] -  
Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -  
117.021802 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName [0m [1082] -  
Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -  
117.021802 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologyRepositoryManager:: [1mgetDataElementFromUniqueIdentifier [0m [1074] - Looking for  
DataElement with uniqueIdentifier: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
INFO: dpbtdbrgen.services.ontology.OntologySparqlDLInterrogator:: [1mgetCorrelatedToDataElementsFromIndividual [0m [3730] - DONE  
extracting number of correlated DataElements unique ids: 2  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.geoscratchpad.TdbGen\_Geometry:: [1mgetPointData [0m [367] - Point: data - Geodetic: lat 34.891406 lon -  
117.021892 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName [0m [1082] -  
Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon -  
117.021892 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologyRepositoryManager:: [1mgetDataElementFromUniqueIdentifier [0m [1074] - Looking for  
DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
INFO: dpbtdbrgen.services.agents.DataElementAgent:: [1mgetCorrelatedToDataElements [0m [799] - Found isCorrelatedTo DataElements for  
individual: OTF-OTFPBuilding-658244779 on layer: OTF\_FEATURES-Point  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.geoscratchpad.TdbGen\_Geometry:: [1mgetPointData [0m [367] - Point: data - Geodetic: lat 34.891406 lon -  
117.021892 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName [0m [1082] -  
Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon -  
117.021892 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologyRepositoryManager:: [1mgetDataElementFromUniqueIdentifier [0m [1074] - Looking for  
DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
INFO: dpbtdbrgen.services.agents.DataElementAgent:: [1mgetCorrelatedToDataElements [0m [811] - individual: FLT-  
FLTextRefModelBuilding-1733339979 not found on layer: OTF\_FEATURES-Point  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName [0m [1082] -  
Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -  
117.021802 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologyRepositoryManager:: [1mgetDataElementFromUniqueIdentifier [0m [1074] - Looking for  
DataElement with uniqueIdentifier: LTF\_0X0X0\_1931  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
INFO: dpbtdbrgen.services.agents.DataElementAgent:: [1mgetCorrelatedToDataElements [0m [811] - individual: FLT-  
FLTextRefModelBuilding-1733339979 not found on layer: LTF\_FEATURES-PRISM  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName [0m [1082] -  
Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg ne: Geodetic: lat 34.891683 lon -  
117.021688 Deg  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug  
INFO: dpbtdbrgen.services.ontology.OntologyRepositoryManager:: [1mgetDataElementFromUniqueIdentifier [0m [1074] - Looking for  
DataElement with uniqueIdentifier: LTF\_0X0X0\_187  
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName [0m [1082] -  
Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg ne: Geodetic: lat 34.891683 lon -  
117.021688 Deg

```

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetDataElementFromUniqueIdentifier_[0m [1074] - Looking for
DataElement with uniqueIdentifier: LTF_0X0X0_188
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mgetCorrelatedToDataElements_[0m [811] - individual: FLT-
FLTextRefModelBuilding-1733339979 not found on layer: LTF_FEATURES-CYLINDER
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation
SEVERE: _[35m***[LIMITATION]***_[0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mgetTDBName_[0m [1082] -
Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon -
116.591753 Deg
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::_[1mgetDataElementFromUniqueIdentifier_[0m [1074] - Looking for
DataElement with uniqueIdentifier: FLT_0X0_-5941746916707185650
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mgetCorrelatedToDataElements_[0m [799] - Found isCorrelatedTo DataElements for
individual: FLT-FLTextRefModelBuilding-1733339979 on layer: FLT_FEATURES-EXTREF_MODEL
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunCorrelationTests_[0m [529] - initializing correlation test
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunCorrelationTests_[0m [533] - running correlation test
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mrun_[0m [69] - TestCorrAttributeCompare Test, num layers: 4 num affected
DataElements: 3
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mrun_[0m [88] - DataElement 0 onto class: LTFPrismBuildingWall, extents:
sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021802 Deg
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mrun_[0m [101] - DataElement 1 is BUILDING
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [168] -

=====> Comparing attributes between DataElementLTF_0X0X0_1931 and 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [179] -
dataElementUnderTestAttributes :net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Label, value: Building Wall
}
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [192] -
otherElementUnderTestAttributes :net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Label, value: BUILDING
    Attribute - type: class java.lang.Double, name: LENGTH, value: 10.0
    Attribute - type: class java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0
    Attribute - type: class java.lang.Double, name: WIDTH, value: 10.0
}
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [203] - comparing attribute: Attribute - type: class
java.lang.String, name: Label, value: Building Wall other fmt: OTF
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE:
_[34m***[ERROR]***_[0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::_[1mgetAttributeIndividualFromNameValue_[0m
[4443] - Invalid coding catalog: Other
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE:
_[35m***[WARNING]***_[0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::_[1mgetAttributeIndividualFromNameValue_[0m
[4491] -
=====> Query result: is empty <=====

Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log error

```

```

SEVERE: [34m***[ERROR]***_0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_1mfindAttribute_0m [380] -
mappedAttributeResource == null
Aug 4, 2011 3:51:34 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_1mcompareAttributes_0m [272] - Attribute name: Label not found.
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_1mrun_0m [120] - DataElement attribute compare failed.
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_1mrun_0m [125] - DataElement: failed test, but is already included in
failedDataElements. Skip adding to failedDataElements
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_1mrun_0m [101] - DataElement 2 is AL015
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_1mcompareAttributes_0m [168] -

=====> Comparing attributes between DataElementLTF_0X0X0_1931 and FLT_0X0_-5941746916707185650

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_1mcompareAttributes_0m [179] -
dataElementUnderTestAttributes :net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Label, value: Building Wall
}
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_1mcompareAttributes_0m [192] -
otherElementUnderTestAttributes :net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.Double, name: WID, value: 10.0
    Attribute - type: class java.lang.Double, name: HGT, value: 4.0
    Attribute - type: class java.lang.String, name: Label, value: AL015
    Attribute - type: class java.lang.Double, name: LNT, value: 10.0
}
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_1mcompareAttributes_0m [203] - comparing attribute: Attribute - type: class
java.lang.String, name: Label, value: Building Wall other fmt: FLT
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE:
[34m***[ERROR]***_0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::_1mgetAttributeIndividualFromNameValue_0m
[4443] - Invalid coding catalog: Other
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE:
[35m***[WARNING]***_0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::_1mgetAttributeIndividualFromNameValue_0m
[4491] -
=====> Query result: is empty <====

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: [34m***[ERROR]***_0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_1mfindAttribute_0m [380] -
mappedAttributeResource == null
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_1mcompareAttributes_0m [272] - Attribute name: Label not found.
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_1mrun_0m [120] - DataElement attribute compare failed.
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_1mrun_0m [125] - DataElement: failed test, but is already included in
failedDataElements. Skip adding to failedDataElements
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_1mrun_0m [134] - <<< TEST >>> Test FAILS <<< TEST >>>
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_1mrunCorrelationTests_0m [546] -

*****> LTF - CORRELATION TEST: TEST CORR CULTURE ATTRIBUTES*** FAILED***, for DataElement: Building Wall, unique id:
LTF_0X0X0_1931, regenerate (2) uncorrelated DataElements

```



Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mrunCorrelationTests\_0m [558] - DataElement unique id: 9c6d352c4ca211e08459002421a8c4c6 \*\*\*FAILED\*\*\* Correlation Test: TEST\_CORR\_CULTURE\_ATTRIBUTES regenerate.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mrunCorrelationTests\_0m [558] - DataElement unique id: FLT\_0X0\_-5941746916707185650 \*\*\*FAILED\*\*\* Correlation Test: TEST\_CORR\_CULTURE\_ATTRIBUTES regenerate.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mupdateDataPanel\_0m [185] - Updating DataPanel with inconsisten DataElements.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mupdateDataPanel\_0m [200] - Found inconsistent DataElements (2), posting to DataPanel.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataPanel:: [1mpost\_0m [48] - DataItem contains inconsistent DataElements

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mrunCorrelationTests\_0m [498] - 1. testName: TEST\_CORR\_CULTURE\_EXISTANCE for DataElement: Building Wall, unique id: LTF\_0X0X0\_1931

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mgetCorrelatedToDataElements\_0m [692] - \*\*\*\*\* Looking for isCorrelatedTo DataElements for DataElement label: Building Wall. UniqueId: LTF\_0X0X0\_1931

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: [34m\*\*\*[ERROR]\*\*\* [0mdpbtbrgen.services.agents.DataElementAgent:: [1mgetCorrelatedToDataElements\_0m [702] - \*\*\*\*\* TODO: set index 0 to this DataElement

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021802 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021802 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager:: [1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_1931

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterrogator:: [1mgetCorrelatedToDataElementsFromIndividual\_0m [3730] - DONE extracting number of correlated DataElements unique ids: 2

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry:: [1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon -117.021892 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon -117.021892 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager:: [1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mgetCorrelatedToDataElements\_0m [799] - Found isCorrelatedTo DataElements for individual: OTF-OTFPBuilding-658244779 on layer: OTF\_FEATURES-Point

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry:: [1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon -117.021892 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: [35m\*\*\*[LIMITATION]\*\*\* [0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager:: [1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon -117.021892 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager:: [1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent:: [1mgetCorrelatedToDataElements\_0m [811] - individual: FLT-FLTExtRefModelBuilding-1733339979 not found on layer: OTF\_FEATURES-Point

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021802 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_1931

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [811] - individual: FLT-FLTExtRefModelBuilding-1733339979 not found on layer: LTF\_FEATURES-PRISM

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg ne: Geodetic: lat 34.891683 lon -117.021688 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_187

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg ne: Geodetic: lat 34.891683 lon -117.021688 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_188

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [811] - individual: FLT-FLTExtRefModelBuilding-1733339979 not found on layer: LTF\_FEATURES-CYLINDER

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon -116.591753 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [799] - Found isCorrelatedTo DataElements for individual: FLT-FLTExtRefModelBuilding-1733339979 on layer: FLT\_FEATURES-EXTREF\_MODEL

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_0m [529] - initializing correlation test

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_0m [533] - running correlation test

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.tests.TestCorrCultureExistance::\_[1mrun\_0m [58] - TestCorrCultureExistance Test, num layers: 4 num affected DataElements: 3

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.tests.TestCorrCultureExistance::\_[1mrun\_0m [77] - DataElement 0 onto class: LTFPrismBuildingWall, extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021802 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.tests.TestCorrCultureExistance::\_[1mrun\_0m [90] - DataElement 1 is BUILDING

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.tests.TestCorrCultureExistance::\_[1mrun\_0m [90] - DataElement 2 is AL015

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.tests.TestCorrCultureExistance::\_[1mrun\_0m [107] - <<< TEST >>> Test PASS <<< TEST >>>

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_0m [588] - Correlation test: TEST\_CORR\_CULTURE\_EXISTANSE PASS - no need to regenerate

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_0m [592] - DONE, with correlation tests for DataElement: LTF\_0X0X0\_1931

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_0m [343] - Updating capability: RegenGSPDataElement state based on action results. confidence: Low All preconditions will be updated as well.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent\$RunCorrelationTests::\_[1mrun\_0m [434] - <<<PROCESS FUNCT>>>> DataElement CORRELATION TESTS PASS <<<PROCESS FUNCT>>>>

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_0m [343] - Updating capability: RunDataElementCorrelation state based on action results. confidence: High All preconditions will be updated as well.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mmakeKnowledgeSourceContribution\_0m [399] -

=====> Agent: DataElementAgent-FLT-EXTREF\_MODEL-AL015-FLT\_0X0\_-5941746916707185650  
Executing the proposed contribution Function: RunDataElementCorrelation

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mreviewDataPanel\_0m [156] - Check DataPanel for inconsisten DataElements.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning

SEVERE: [35m\*\*\*[WARNING]\*\*\*\_0mdpbtbrgen.services.blackboard.BlackBoardDataPanel::\_[1mcontainsInconsistentDataElement\_0m [252] - Remove inconsistenDataElementExist = false, May12

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mreviewDataPanel\_0m [160] - Found DataElement in inconsistent DataElements list, regenerating.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mreviewDataPanel\_0m [166] - Regenerating inconsisten DataElement: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mregenerate\_0m [1067] - Regenerating DataElement for DataElement: AL015

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetTransformationModels\_0m [652] - Looking for DataElement transformation models.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterrogator::\_[1mqueryOntologyForTransformationModel\_0m [989] - Looking for DataElement transformation model.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetTransformationModels\_0m [663] - done, QUERY PROCESSING TIME: 7 miliseconds.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetTransformationModels\_0m [669] -

query result: ( ?transformationModelStr = <http://localhost/ontologies/TDBVirtualFLT.owl#FLTTransfModelExtRefBuilding> )

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mregenerate\_0m [1089] - Running transformation functions

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mregenerate\_0m [1103] - 0. model data:

FLT\_TRANS\_MODEL\_EXTREF\_BUILDING

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [692] - \*\*\*\*\* Looking for isCorrelatedTo DataElements for DataElement label: AL015. UniqueId: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log error

SEVERE: [34m\*\*\*[ERROR]\*\*\*\_0mdpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [702] - \*\*\*\*\* TODO: set index 0 to this DataElement

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] -

Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon -116.591753 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] -

Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon -116.591753 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterrogator::\_[1mgetCorrelatedToDataElementsFromIndividual\_0m [3730] - DONE extracting number of correlated DataElements unique ids: 2

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrngen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [811] - individual: LTF-LTFPrismBuildingWall-1835992364 not found on layer: OTF\_FEATURES-Point

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon - 117.021802 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_1931

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [799] - Found isCorrelatedTo DataElements for individual: LTF-LTFPrismBuildingWall-1835992364 on layer: LTF\_FEATURES-PRISM

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [799] - Found isCorrelatedTo DataElements for individual: OTF-OTFPBuilding-658244779 on layer: OTF\_FEATURES-Point

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.TestIntiAttributesKnowledgeBase::\_[1minitializeDefaultAttributes\_0m [57] - Limited default feature attributes. Needs to be implemented on ontology.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitRequiredAttributes::\_[1minitializeOTFDefaultAttributes\_0m [42] - Partial attribute support for Bridge line, bridge span, point building, line road only.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitRequiredAttributes::\_[1mgetOtfPointBridgeSpanAttributes\_0m [285] - Temp DataElement attributes - FIXME Feb 23.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitRequiredAttributes::\_[1minitializeLTFDefaultAttributes\_0m [360] - Partial attribute support for prism bridge, and prism building only.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitRequiredAttributes::\_[1minitializeFLTDefaultAttributes\_0m [481] - Partial attribute support for building and bridge building only.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.TestIntiAttributesKnowledgeBase::\_[1minitializeCorrelationAttributes\_0m [81] - Limited correlated feature attributes. Needs to be implemented on ontology.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitCorrelatedAttributes::\_[1minitializeOTFCorrelatedAttributes\_0m [41] - Partial correlated attribute support for Bridge line, bridge span, point building, line road only.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitCorrelatedAttributes::\_[1minitializeLTFCorrelatedAttributes\_0m [312] - Partial attribute support for prism bridge, and prism building only.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation

SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrngen.services.tests.InitCorrelatedAttributes::\_[1minitializeFLTCorrelatedAttributes\_0m [416] - Partial attribute support for building and bridge building only.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgenerateFinalSetOfTransformationParamaters\_0m [1192] - DataElement unique id: FLT\_0X0\_-5941746916707185650  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.agents.DataElementAgent::\_[1mmodifyUsingIntegrityTestsResults\_0m [1225] - FLT runIntegrityTests not implemented.  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.agents.DataElementAgent::\_[1mmodifyUsingCorrelationTestsResults\_0m [1245] - FLT - Only updating EXS attribute - hard coded to Destroyed = 7.  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.TestIntiAttributesKnowledgeBase::\_[1minitializeDefaultAttributes\_0m [57] - Limited default feature attributes. Needs to be implemented on ontology.  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitRequiredAttributes::\_[1minitializeOTFDefaultAttributes\_0m [42] - Partial attribute support for Bridge line, bridge span, point building, line road only.  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitRequiredAttributes::\_[1mgetOtfPointBridgeSpanAttributes\_0m [285] - Temp DataElement attributes - FIXME Feb 23.  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitRequiredAttributes::\_[1minitializeLTFDefaultAttributes\_0m [360] - Partial attribute support for prism bridge, and prism building only.  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitRequiredAttributes::\_[1minitializeFLTDefaultAttributes\_0m [481] - Partial attribute support for building and bridge building only.  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.TestIntiAttributesKnowledgeBase::\_[1minitializeCorrelationAttributes\_0m [81] - Limited correlated feature attributes. Needs to be implemented on ontology.  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitCorrelatedAttributes::\_[1minitializeOTFCorrelatedAttributes\_0m [41] - Partial correlated attribute support for Bridge line, bridge span, point building, line road only.  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitCorrelatedAttributes::\_[1minitializeLTFCorrelatedAttributes\_0m [312] - Partial attribute support for prism bridge, and prism building only.  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tests.InitCorrelatedAttributes::\_[1minitializeFLTCorrelatedAttributes\_0m [416] - Partial attribute support for building and bridge building only.  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgenerateFinalSetOfTransformationParamaters\_0m [1214] - num of parameters: 2  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.models.FLTModelTransform::\_[1mrun\_0m [119] -

=====> FLT Transformation: num layers: 4 num affected DataElements: 3

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.models.FLTModelTransform::\_[1mrun\_0m [134] - DataElement unique id: FLT\_0X0\_-5941746916707185650  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE: \_[35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.models.FLTModelTransform::\_[1mprocessGeometryTransformations\_0m [165] - FLT geometry transformations not implemented.  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.models.FLTModelTransform::\_[1mprocessAttributeTransformations\_0m [191] - FLT processAttributeTransformations - include attribute to attributes and attribute to geometry. num model parameters: 2  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.models.ModelParameters::\_[1mgetAttributeList\_0m [63] - num parameters in model: 0  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.models.FLTModelTransform::\_[1mprocessAttributeTransformations\_0m [206] - num parameter attributes: 0  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_0mdpbtbrgen.services.models.FLTModelTransform::\_[1mprocessAttributeTransformations\_0m [208] - no attributes in parameter list  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.models.ModelParameters::\_[1mgetAttributeList\_0m [63] - num parameters in model: 1  
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

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INFO: dpbtbrgen.services.models.ModelParameters::_[1mgetAttributeList_0m [68] - processing parameter: DataElementDescriptor::Parameter
Object {
  ontoClassName: TransformationParameter
  ontoIndividualName: AttributeNameValue
  name: EXS
  value number: 7
}
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntiAttributesKnowledgeBase::_[1misAnAttribute_0m [161] - =====> UNDER DEBUG.
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestIntiAttributesKnowledgeBase::_[1misAnAttribute_0m [171] - =====> match found on required attribute list
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.models.FLTModelTransform::_[1mprocessAttributeTransformations_0m [206] - num parameter attributes: 1
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.models.FLTModelTransform::_[1mprocessAttributeTransformations_0m [221] - processing attribute to attribute
transformation, attribute name: EXS
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.models.FLTModelTransform::_[1misAttributeLinkedToGeometryChanges_0m [259] - considering attribute: EXS as
potential geometry modifier.
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.models.FLTModelTransform::_[1misAttributeLinkedToGeometryChanges_0m [263] - Attribute: EXS linked to
geometry changes.
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.models.FLTModelTransform::_[1mprocessAttributeTransformations_0m [230] - processing attribute to geometry
transformation.
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.models.FLTModelTransform::_[1mupdateModelGeometry_0m [275] -
=====> updateModelGeometry.
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.models.FLTModelTransform::_[1mfindLibModelName_0m [322] - found Integer attribute value: 7
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.models.FLTModelTransform::_[1mfindLibModelName_0m [331] - extRefFileName: 1ae4c4f1-812a-674e-99c2-
cfa0c65d28d51.flt
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.models.FLTModelTransform::_[1mfindLibModelName_0m [334] - 1ae4c4f1-812a-674e-99c2-
cfa0c65d28d51.fltbaseFilename: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.models.FLTModelTransform::_[1mfindLibModelName_0m [345] - attribute modelLibName: 1ae4c4f1-812a-674e-
99c2-cfa0c65d28d51-destroyed.flt updated.
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mregenerate_0m [1153] -
=====> REGENERATION SUCCESSFUL regeneration of DataElement: AL015, unique id: FLT_0X0_-5941746916707185650 layer:
FLT_FEATURES.
Setting IsChanged flag on DataElement source format: FLT

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent$RegenerateDataElement::_[1mrun_0m [1030] - <<<<PROCESS FUNCT>>>>
DataElement regenerated successfully. <<<<PROCESS FUNCT>>>>
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::_[1mupdateAction_0m [343] - Updating capability: RegenGSPDataElement state
based on action results. confidence: High All preconditions will be updated as well.
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::_[1mupdateAction_0m [343] - Updating capability: RunDataElementIntegrityTest
state based on action results. confidence: None All preconditions will be updated as well.
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mreviewDataPanel_0m [169] - Running integrity tests on regenerated
DataElements.FLT_0X0_-5941746916707185650
Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunIntegrityTests_0m [276] -
=====> Running integrity test for DataElement: AL015

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Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetIntegrityTests\_0m [536] - Looking for DataElement integrity tests for class: FLTextRefModelBuilding, namespace: http://localhost/ontologies/TDBVirtualFLT.owl#

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetIntegrityTests\_0m [549] - done, QUERY PROCESSING TIME: 2 miliseconds.

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetIntegrityTests\_0m [555] - query result: ( ?integrityTestsStr = <http://localhost/ontologies/TDBTest.owl#TestInRequiredAttributes> )

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::\_[1mgetIntegrityTests\_0m [557] - ==> node: http://localhost/ontologies/TDBTest.owl#TestInRequiredAttributes

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mrunIntegrityTests\_0m [299] - running integrity tests

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mrunIntegrityTests\_0m [307] - 0. test data: TEST\_IN\_REQ\_ATTRIBUTES

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [43] - TestIntegRequiredAttributes Test

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log warning  
SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_0mdpbtbrngen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [53] - USING TEMP AttributeKnowledgeBase

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [73] - Changed DataElement attributes:

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [74] - net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen\_Attributes  
{  
Attribute - type: class java.lang.Double, name: WID, value: 10.0  
Attribute - type: class java.lang.Double, name: HGT, value: 4.0  
Attribute - type: class java.lang.String, name: Label, value: AL015  
Attribute - type: class java.lang.Double, name: AOO, value: 0.0  
Attribute - type: class java.lang.Integer, name: EXS, value: 7  
Attribute - type: class java.lang.Double, name: LNT, value: 10.0  
}  
}

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [88] - Testing for attribute: WID

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [88] - Testing for attribute: HGT

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [88] - Testing for attribute: Label

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [92] - skipping Label attribute

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [88] - Testing for attribute: LNT

Aug 4, 2011 3:51:35 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.tests.TestIntegRequiredAttributes::\_[1mrun\_0m [112] - <<< TEST >>> Test PASS <<< TEST >>>

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mrunIntegrityTests\_0m [396] - DONE, with integrity tests for DataElement: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log info  
INFO: dpbtbrngen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_0m [343] - Updating capability: RegenRelatedDataElements state based on action results. confidence: Low All preconditions will be updated as well.

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.DataElementAgent\$RunIntegrityTests::\_[1mrun\_0m [249] - <<<PROCESS FUNCT>>>> DataElement INTEGRITY TESTS PASS <<<PROCESS FUNCT>>>>

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log info  
INFO: dpbtbrngen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_0m [343] - Updating capability: RunDataElementIntegrityTest state based on action results. confidence: High All preconditions will be updated as well.

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.DataElementAgent::\_[1mupdateDataPanel\_0m [185] - Updating DataPanel with inconsisten DataElements.

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent\$RunCorrelationTests::\_[1mrun\_0m [428] - DATA ELEMENT CORRELATION TESTS

...

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_0m [458] -

====> Running correlation test , for DataElement label: AL015, unique id: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetCorrelationTests\_0m [593] - Looking for DataElement correlation tests for class: FLTextRefModelBuilding, namespace: http://localhost/ontologies/TDBVirtualFLT.owl#

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetCorrelationTests\_0m [611] -

query result: (?correlationTestsStr = <http://localhost/ontologies/TDBTest.owl#TestCorrCultureExistence> )

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log error

SEVERE: [34m\*\*\*[ERROR]\*\*\*\_0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::\_[1mgetTestDataFromIndividual\_0m [3367] -

====>test Individual does not have hasTestParameters property (paramaterStatement == null)

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetCorrelationTests\_0m [611] -

query result: (?correlationTestsStr = <http://localhost/ontologies/TDBTest.owl#TestCorrCultureAttributes> )

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_0m [490] - running correlation tests (2)

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_0m [498] - 0. testName:

TEST\_CORR\_CULTURE\_EXISTANSE for DataElement: AL015, unique id: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [692] - \*\*\*\*\* Looking for isCorrelatedTo DataElements for DataElement label: AL015. UniqueId: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log error

SEVERE: [34m\*\*\*[ERROR]\*\*\*\_0mdpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [702] - \*\*\*\*\* TODO: set index 0 to this DataElement

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] -

Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon -116.591753 Deg

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] -

Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon -116.591753 Deg

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterogator::\_[1mgetCorrelatedToDataElementsFromIndividual\_0m [3730] - DONE extracting number of correlated DataElements unique ids: 2

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_0m [367] - Point: data - Geodetic: lat 34.891406 lon -117.021892 Deg

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] -

Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon -117.021892 Deg

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_0m [811] - individual: LTF-

LTFPrismBuildingWall-1835992364 not found on layer: OTF\_FEATURES-Point

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation

SEVERE: [35m\*\*\*[LIMITATION]\*\*\*\_0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_0m [1082] -

Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021802 Deg



Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_][0m [1074] - Looking for DataElement with uniqueIdentifier: LTF\_0X0X0\_1931

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_][0m [799] - Found isCorrelatedTo DataElements for individual: LTF-LTFPrismBuildingWall-1835992364 on layer: LTF\_FEATURES-PRISM

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_][0m [367] - Point: data - Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE:\_[35m\*\*\*[LIMITATION]\*\*\*\_][0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_][0m [1082] - Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon - 117.021892 Deg

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_][0m [1074] - Looking for DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_][0m [799] - Found isCorrelatedTo DataElements for individual: OTF-OTFPBuilding-658244779 on layer: OTF\_FEATURES-Point

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_][0m [529] - initializing correlation test

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_][0m [533] - running correlation test

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tests.TestCorrCultureExistance::\_[1mrun\_][0m [58] - TestCorrCultureExistance Test, num layers: 4 num affected DataElements: 3

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrCultureExistance::\_[1mrun\_][0m [77] - DataElement 0 onto class: FLTExtRefModelBuilding, extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon -116.591753 Deg

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrCultureExistance::\_[1mrun\_][0m [90] - DataElement 1 is Building Wall

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrCultureExistance::\_[1mrun\_][0m [90] - DataElement 2 is BUILDING

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrCultureExistance::\_[1mrun\_][0m [107] - <<< TEST >>> Test PASS <<< TEST >>>

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_][0m [588] - Correlation test: TEST\_CORR\_CULTURE\_EXISTANCE PASS - no need to regenerate

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_][0m [498] - 1. testName: TEST\_CORR\_CULTURE\_ATTRIBUTES for DataElement: AL015, unique id: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_][0m [692] - \*\*\*\*\* Looking for isCorrelatedTo DataElements for DataElement label: AL015. UniqueId: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE:\_[34m\*\*\*[ERROR]\*\*\*\_][0mdpbtbrgen.services.agents.DataElementAgent::\_[1mgetCorrelatedToDataElements\_][0m [702] - \*\*\*\*\* TODO: set index 0 to this DataElement

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE:\_[35m\*\*\*[LIMITATION]\*\*\*\_][0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_][0m [1082] - Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon - 116.591753 Deg

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log limitation  
SEVERE:\_[35m\*\*\*[LIMITATION]\*\*\*\_][0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetTDBName\_][0m [1082] - Looking for TDB Name for format: FLT and extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon - 116.591753 Deg

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.ontology.OntologyRepositoryManager::\_[1mgetDataElementFromUniqueIdentifier\_][0m [1074] - Looking for DataElement with uniqueIdentifier: FLT\_0X0\_-5941746916707185650

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.ontology.OntologySparqlDLInterrogator::\_[1mgetCorrelatedToDataElementsFromIndividual\_][0m [3730] - DONE extracting number of correlated DataElements unique ids: 2

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

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INFO: dpbtbrngen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_0m [367] - Point: data - Geodetic: lat 34.891406 lon -
117.021892 Deg
Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation
SEVERE: _[35m***[LIMITATION]***_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::_[1mgetTDBName_0m [1082] -
Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon -
117.021892 Deg
Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::_[1mgetDataElementFromUniqueIdentifier_0m [1074] - Looking for
DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6
Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.agents.DataElementAgent::_[1mgetCorrelatedToDataElements_0m [811] - individual: LTF-
LTFPrismBuildingWall-1835992364 not found on layer: OTF_FEATURES-Point
Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation
SEVERE: _[35m***[LIMITATION]***_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::_[1mgetTDBName_0m [1082] -
Looking for TDB Name for format: LTF and extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -
117.021802 Deg
Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::_[1mgetDataElementFromUniqueIdentifier_0m [1074] - Looking for
DataElement with uniqueIdentifier: LTF_0X0X0_1931
Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.agents.DataElementAgent::_[1mgetCorrelatedToDataElements_0m [799] - Found isCorrelatedTo DataElements for
individual: LTF-LTFPrismBuildingWall-1835992364 on layer: LTF_FEATURES-PRISM
Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_0m [367] - Point: data - Geodetic: lat 34.891406 lon -
117.021892 Deg
Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation
SEVERE: _[35m***[LIMITATION]***_0mdpbtbrngen.services.tdbrepository.TdbRepositoryManager::_[1mgetTDBName_0m [1082] -
Looking for TDB Name for format: OTF and extents: sw: Geodetic: lat 34.891406 lon -117.021892 Deg ne: Geodetic: lat 34.891406 lon -
117.021892 Deg
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.ontology.OntologyRepositoryManager::_[1mgetDataElementFromUniqueIdentifier_0m [1074] - Looking for
DataElement with uniqueIdentifier: 9c6d352c4ca211e08459002421a8c4c6
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.agents.DataElementAgent::_[1mgetCorrelatedToDataElements_0m [799] - Found isCorrelatedTo DataElements for
individual: OTF-OTFPBuilding-658244779 on layer: OTF_FEATURES-Point
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.agents.DataElementAgent::_[1mrunCorrelationTests_0m [529] - initializing correlation test
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.agents.DataElementAgent::_[1mrunCorrelationTests_0m [533] - running correlation test
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tests.TestCorrAttributeCompare::_[1mrun_0m [69] - TestCorrAttributeCompare Test, num layers: 4 num affected
DataElements: 3
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tests.TestCorrAttributeCompare::_[1mrun_0m [88] - DataElement 0 onto class: FLTextRefModelBuilding, extents:
sw: Geodetic: lat 36.562908 lon -116.592309 Deg ne: Geodetic: lat 36.563464 lon -116.591753 Deg
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tests.TestCorrAttributeCompare::_[1mrun_0m [101] - DataElement 1 is Building Wall
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_0m [168] -
=====> Comparing attributes between DataElementFLT_0X0_-5941746916707185650 and LTF_0X0X0_1931

Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_0m [179] -
dataElementUnderTestAttributes :net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.Double, name: WID, value: 10.0
    Attribute - type: class java.lang.Double, name: HGT, value: 4.0
    Attribute - type: class java.lang.String, name: Label, value: AL015
    Attribute - type: class java.lang.Double, name: LNT, value: 10.0
}
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_0m [192] -

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```

otherElementUnderTestAttributes :net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Label, value: Building Wall
}
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [203] - comparing attribute: Attribute - type: class
java.lang.Double, name: WID, value: 10.0 other fmt: LTF
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_[0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::_[1mgetSameAsAttributeIndividual_[0m
[4836] - Invalid coding catalog: Other
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [359] - mapped attribute resource: namespace:
http://localhost/ontologies/TDBStructure.owl#, name: EAWidth name: WID
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_[0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [368] - mapped attribute
resource: WID does not exist. Creating Attribute_UKN.
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [234] - Found Attribute_UKN. Indicates that the
DataElement on GeoScratchPad lacks required correlated Attribute name: WID
Aug 4, 2011 3:51:37 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [203] - comparing attribute: Attribute - type: class
java.lang.Double, name: HGT, value: 4.0 other fmt: LTF
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_[0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::_[1mgetSameAsAttributeIndividual_[0m
[4836] - Invalid coding catalog: Other
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [359] - mapped attribute resource: namespace:
http://localhost/ontologies/CodingCatalog.owl#, name: EAHeightAboveSurfaceLevel name: HGT
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_[0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [368] - mapped attribute
resource: HGT does not exist. Creating Attribute_UKN.
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [234] - Found Attribute_UKN. Indicates that the
DataElement on GeoScratchPad lacks required correlated Attribute name: HGT
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [240] - DataElement: failed test, but is already
included in failedDataElements. Skip adding to failedDataElements
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [203] - comparing attribute: Attribute - type: class
java.lang.String, name: Label, value: AL015 other fmt: LTF
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_[0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::_[1mgetSameAsAttributeIndividual_[0m
[4836] - Invalid coding catalog: Other
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [359] - mapped attribute resource: namespace:
http://localhost/ontologies/TDBStructure.owl#, name: LtfTreeTrunk name: Label
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_[0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [368] - mapped attribute
resource: Label does not exist. Creating Attribute_UKN.
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [234] - Found Attribute_UKN. Indicates that the
DataElement on GeoScratchPad lacks required correlated Attribute name: Label
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [240] - DataElement: failed test, but is already
included in failedDataElements. Skip adding to failedDataElements
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [203] - comparing attribute: Attribute - type: class
java.lang.Double, name: LNT, value: 10.0 other fmt: LTF
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE:
_[35m***[WARNING]***_[0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::_[1mgetAttributeIndividualFromNameValue_[0m
[4167] -
====> Query result: is empty <====

```

```

Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_ [0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [380] -
mappedAttributeResource == null
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [272] - Attribute name: LNT not found.
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [277] - DataElement: failed test, but is already
included in failedDataElements. Skip adding to failedDataElements
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mrun_[0m [120] - DataElement attribute compare failed.
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mrun_[0m [125] - DataElement: failed test, but is already included in
failedDataElements. Skip adding to failedDataElements
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mrun_[0m [101] - DataElement 2 is BUILDING
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [168] -

=====> Comparing attributes between DataElementFLT_0X0_-5941746916707185650 and 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [179] -
dataElementUnderTestAttributes :net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.Double, name: WID, value: 10.0
    Attribute - type: class java.lang.Double, name: HGT, value: 4.0
    Attribute - type: class java.lang.String, name: Label, value: AL015
    Attribute - type: class java.lang.Double, name: LNT, value: 10.0
}
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [192] -
otherElementUnderTestAttributes :net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Label, value: BUILDING
    Attribute - type: class java.lang.Double, name: LENGTH, value: 10.0
    Attribute - type: class java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0
    Attribute - type: class java.lang.Double, name: WIDTH, value: 10.0
}
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [203] - comparing attribute: Attribute - type: class
java.lang.Double, name: WID, value: 10.0 other fmt: OTF
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [359] - mapped attribute resource: namespace:
http://localhost/ontologies/TDBStructure.owl#, name: EAWidth name: WID
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_ [0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [368] - mapped attribute
resource: WID does not exist. Creating Attribute_UKN.
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [234] - Found Attribute_UKN. Indicates that the
DataElement on GeoScratchPad lacks required correlated Attribute name: WID
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [203] - comparing attribute: Attribute - type: class
java.lang.Double, name: HGT, value: 4.0 other fmt: OTF
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [359] - mapped attribute resource: namespace:
http://localhost/ontologies/CodingCatalog.owl#, name: EAHeightAboveSurfaceLevel name: HGT
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_ [0mdpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mfindAttribute_[0m [368] - mapped attribute
resource: HGT does not exist. Creating Attribute_UKN.
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::_[1mcompareAttributes_[0m [234] - Found Attribute_UKN. Indicates that the
DataElement on GeoScratchPad lacks required correlated Attribute name: HGT

```

Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_][0m [240] - DataElement: failed test, but is already included in failedDataElements. Skip adding to failedDataElements  
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_][0m [203] - comparing attribute: Attribute - type: class java.lang.String, name: Label, value: AL015 other fmt: OTF  
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mfindAttribute\_][0m [359] - mapped attribute resource: namespace: http://localhost/ontologies/TDBStructure.owl#, name: LtfTreeTrunk name: Label  
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_][0mdpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mfindAttribute\_][0m [368] - mapped attribute resource: Label does not exist. Creating Attribute\_UKN.  
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_][0m [234] - Found Attribute\_UKN. Indicates that the DataElement on GeoScratchPad lacks required correlated Attribute name: Label  
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_][0m [240] - DataElement: failed test, but is already included in failedDataElements. Skip adding to failedDataElements  
Aug 4, 2011 3:51:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_][0m [203] - comparing attribute: Attribute - type: class java.lang.Double, name: LNT, value: 10.0 other fmt: OTF  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
SEVERE:  
\_[35m\*\*\*[WARNING]\*\*\*\_][0mdpbtbrgen.services.ontology.OntologySparqlDLInterogator::\_[1mgetAttributeIndividualFromNameValue\_][0m [4167] -  
====> Query result: is empty <====

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_][0mdpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mfindAttribute\_][0m [380] - mappedAttributeResource == null  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_][0m [272] - Attribute name: LNT not found.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mcompareAttributes\_][0m [277] - DataElement: failed test, but is already included in failedDataElements. Skip adding to failedDataElements  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mrun\_][0m [120] - DataElement attribute compare failed.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mrun\_][0m [125] - DataElement: failed test, but is already included in failedDataElements. Skip adding to failedDataElements  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tests.TestCorrAttributeCompare::\_[1mrun\_][0m [134] - <<< TEST >>> Test FAILS <<< TEST >>>  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_][0m [546] -

\*\*\*\*\*> FLT - CORRELATION TEST: TEST\_CORR\_CULTURE\_ATTRIBUTES\*\*\* FAILED\*\*\*, for DataElement: AL015, unique id: FLT\_0X0\_-5941746916707185650, regenerate (2) uncorrelated DataElements

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_][0m [558] - DataElement unique id: LTF\_0X0X0\_1931  
\*\*\*FAILED\*\*\* Correlation Test: TEST\_CORR\_CULTURE\_ATTRIBUTES regenerate.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mrunCorrelationTests\_][0m [558] - DataElement unique id: 9c6d352c4ca211e08459002421a8c4c6 \*\*\*FAILED\*\*\* Correlation Test: TEST\_CORR\_CULTURE\_ATTRIBUTES regenerate.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mupdateDataPanel\_][0m [185] - Updating DataPanel with inconsisten DataElements.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.DataElementAgent::\_[1mupdateDataPanel\_][0m [200] - Found inconsistent DataElements (2), posting to DataPanel.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataPanel::\_[1mpost\_][0m [48] - DataItem contains inconsistent DataElements  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

```

INFO: dpbtbrgen.services.agents.DataElementAgent::_[1mrunCorrelationTests_0m [592] - DONE, with correlation tests for DataElement:
FLT_0X0_-5941746916707185650
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::_[1mupdateAction_0m [343] - Updating capability: RegenGSPDataElement state
based on action results. confidence: High All preconditions will be updated as well.
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.agents.DataElementAgent$RunCorrelationTests::_[1mrun_0m [439] - <<<PROCESS FUNCT>>>> DataElement
CORRELATION TESTS ***FAILED*** <<<PROCESS FUNCT>>>>
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::_[1mupdateAction_0m [343] - Updating capability: RunDataElementCorrelation
state based on action results. confidence: High All preconditions will be updated as well.
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine
INFO: dpbtbrgen.services.agents.BlackboardController::_[1mcheckForKnowledgeSourceContribution_0m [86] - Controller: ask all registered
KS for contributions
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.agents.KnowledgeSource::_[1mcheckForKnowledgeSourceContribution_0m [273] - Agent: CellAgent-OTF-Point
posting capability to task panel: RunCellCorrelation
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.agents.KnowledgeSource::_[1mcheckForKnowledgeSourceContribution_0m [273] - Agent: CellAgent-LTF-PRISM
posting capability to task panel: RunCellCorrelation
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.agents.KnowledgeSource::_[1mcheckForKnowledgeSourceContribution_0m [273] - Agent: CellAgent-LTF-
CYLINDER posting capability to task panel: RunCellCorrelation
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.agents.KnowledgeSource::_[1mcheckForKnowledgeSourceContribution_0m [273] - Agent: CellAgent-FLT-
EXTREF_MODEL posting capability to task panel: RunCellCorrelation
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine
INFO: dpbtbrgen.services.agents.BlackboardController::_[1mdisplayTasksAndDataPanels_0m [356] - DATA PANEL (count=16)
**ERROR** label: CorrelatedDataElementsUniquelD-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist
**ERROR** label: CorrelatedDataElementsUniquelD-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist
**ERROR** label: CorrelatedDataElementsUniquelD-FromCreateCorrelatedDataElementsAgents does not exist
**ERROR** label: CorrelatedDataElementsUniquelD-FromCreateCorrelatedDataElementsAgents does not exist
**ERROR** label: CorrelatedDataElementsUniquelD-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist
**ERROR** label: CorrelatedDataElementsUniquelD-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist
**ERROR** label: CorrelatedDataElementsUniquelD-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist
**ERROR** label: CorrelatedDataElementsUniquelD-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist
**ERROR** label: InconsistenDataElements-FromCorrelationTest does not exist
**ERROR** label: InconsistenDataElements-FromCorrelationTest does not exist
**ERROR** label: InconsistenDataElements-FromCorrelationTest does not exist
**ERROR** label: InconsistenDataElements-FromCorrelationTest does not exist
**ERROR** label: InconsistenDataElements-FromCorrelationTest does not exist
**ERROR** label: InconsistenDataElements-FromCorrelationTest does not exist
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine
INFO: dpbtbrgen.services.agents.BlackboardController::_[1mdisplayTasksAndDataPanels_0m [373] -
=====

```

## DATA PANEL

- ```

=====
1. name: CheckTdbRepoOntology, type: Goal, confidence: High
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | ]
actions: CheckTdbRepoOntology, outputs: [CellOntologyExists, DataElementOntologyExists]
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

2. name: CreateCellAgents, type: Goal, confidence: High
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -
> object(true) | ]
actions: CreateCellAgents, outputs: [CreateCellAgents]
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

3. name: CreateDataElementAgents, type: Goal, confidence: High

```

- preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(true) | ]  
actions: CreateDataElementAgents, outputs: [CreateDataElementAgents]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
4. name: RunDataElementIntegrityTest, type: Goal, confidence: High  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CellOntologyExists) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(DataElementOntologyExists) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(true) | ]  
actions: RunDataElementIntegrityTest, outputs: [GeoScratchPadLayerIntegrityOK, RegenRelatedDataElements]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
5. name: RegenDependentDataElements, type: Goal, confidence: Low  
preconditions: [subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(true) | subject(RegenRelatedDataElements) ^ predicate (And) -> object(true) | ]  
actions: RegenRelatedDataElements, outputs: [RunDataElementIntegrityTest]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
6. name: RunCorrelation, type: Goal, confidence: High  
preconditions: [subject(LoadGeoScratchPadCells) ^ predicate (And) -> object(true) | subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) -> object(true) | subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(true) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(true) | ]  
actions: RunDataElementCorrelation, outputs: [DataElementsCorrelated, RegenGSPDataElement]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
7. name: RegenDataElementsAfterCorrFailure, type: Goal, confidence: High  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(true) | subject(RegenGSPDataElement) ^ predicate (And) -> object(true) | ]  
actions: RegenGSPDataElement, outputs: [RunDataElementIntegrityTest, GeoScratchPadLayerIntegrityOK]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
- \*8. name: RegenGeoScratchPadCells, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(true) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(true) | subject(RegenGSPDataElement) ^ predicate (And) -> object(true) | subject(RegenGSPCells) ^ predicate (And) -> object(false) | ]  
actions: RegenGSPCells, outputs: [RunDataElementCorrelation, DataElementsCorrelated]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
- \*9. name: RunCellCorrelation, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(true) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(true) | subject(DataElementsCorrelated) ^ predicate (And) -> object(true) | ]  
actions: RunCellCorrelation, outputs: [GeoScratchPadCorrelated]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6
- \*10. name: CorrelatedDataElementsUniqueId-FromPostCorrelatedDataElementUniqueIdsToDataPanel, type: InformationDATA ITEM - pring not implemented.
- \*11. name: CorrelatedDataElementsUniqueId-FromCreateCorrelatedDataElementsAgents, type: InformationDATA ITEM - pring not implemented.
- \*12. name: CorrelatedDataElementsUniqueId-FromPostCorrelatedDataElementUniqueIdsToDataPanel, type: InformationDATA ITEM - pring not implemented.
- \*13. name: CorrelatedDataElementsUniqueId-FromPostCorrelatedDataElementUniqueIdsToDataPanel, type: InformationDATA ITEM - pring not implemented.
- \*14. name: InconsistenDataElements-FromCorrelationTest, type: InformationDATA ITEM - pring not implemented.
- \*15. name: InconsistenDataElements-FromCorrelationTest, type: InformationDATA ITEM - pring not implemented.
- \*16. name: InconsistenDataElements-FromCorrelationTest, type: InformationDATA ITEM - pring not implemented.

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayTasksAndDataPanels\_0m [377] - TASK PANEL (count=4)  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayTasksAndDataPanels\_0m [388] -  
TASKS  
0. name: CellAgent-OTF-Point, type: Task, priority: 1, \_ks: CellAgent-OTF-Point, task: RunCellCorrelation  
1. name: CellAgent-LTF-PRISM, type: Task, priority: 1, \_ks: CellAgent-LTF-PRISM, task: RunCellCorrelation  
2. name: CellAgent-LTF-CYLINDER, type: Task, priority: 1, \_ks: CellAgent-LTF-CYLINDER, task: RunCellCorrelation  
3. name: CellAgent-FLT-EXTREF\_MODEL, type: Task, priority: 1, \_ks: CellAgent-FLT-EXTREF\_MODEL, task: RunCellCorrelation

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mmakeKnowledgeSourceContribution\_0m [146] - Controller: reviews and selects  
KS based on proposed contribution  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mmakeKnowledgeSourceContribution\_0m [399] -

=====> Agent: CellAgent-OTF-Point  
Executing the proposed contribution Function: RunCellCorrelation

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_0m [166] - =====> Check DataPanel for the creation of correlated  
DataElements., Cell: CellAgent-OTF-Point  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_0m [172] - Found dependent DataElements on DataPanel see if any needs  
to be created.

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_0m [173] - dependentDataElements:  
Dependent DataElements  
unique id: LTF\_0X0X0\_1931  
unique id: FLT\_0X0\_-5941746916707185650  
unique id: LTF-LTFPrismBuildingWall-1835992364  
unique id: FLT-FLTEExtRefModelBuilding-1733339979  
unique id: 9c6d352c4ca211e08459002421a8c4c6  
unique id: FLT\_0X0\_-5941746916707185650  
unique id: LTF\_0X0X0\_1931  
unique id: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_0m [1292] -  
=====> CellAgent: CellAgent-OTF-Point flagging dependent DataElement as inconsistent on layer: OTF\_FEATURES-Point  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_0m [1308] - Layer format:  
OTF

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_0m [1311] - Found: 1  
DataElements on layer: OTF\_FEATURES-Point

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_0m [1319] - considering  
DataElement uniqueId: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataPanel::\_[1mcontainsDependentDataElements\_0m [283] - Found dependent DataElement  
unique ids

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_0m [1322] - DataPanel  
contains uniqueId: 9c6d352c4ca211e08459002421a8c4c6 setting DataElement state to inconsistent.

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_0m [1328] - Done,  
submitting: 1 dependent DataElement Agents

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: [34m\*\*\*[ERROR]\*\*\*\_0mdpbtbrgen.services.agents.CellAgent\$RunCorrelation::\_[1mrun\_0m [1152] - Perform any necessary  
Cell CORRELATION tasks <<NOT IMPLEMENTED>> - pass cell correlation test for now  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info



INFO: dpbtbrngen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_][0m [343] - Updating capability: RunCellCorrelation state based on action results. confidence: High All preconditions will be updated as well.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log info  
INFO: dpbtbrngen.services.agents.KnowledgeSource::\_[1mmakeKnowledgeSourceContribution\_][0m [399] -

=====> Agent: CellAgent-LTF-PRISM  
Executing the proposed contribution Function: RunCellCorrelation

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.CellAgent::\_[1mreviewDataPanel\_][0m [166] - =====> Check DataPanel for the creation of correlated DataElements., Cell: CellAgent-LTF-PRISM  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.agents.CellAgent::\_[1mreviewDataPanel\_][0m [172] - Found dependent DataElements on DataPanel see if any needs to be created.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.agents.CellAgent::\_[1mreviewDataPanel\_][0m [173] - dependentDataElements:  
Dependent DataElements  
    unique id: LTF\_0X0X0\_1931  
    unique id: FLT\_0X0\_-5941746916707185650  
    unique id: LTF-LTFPrismBuildingWall-1835992364  
    unique id: FLT-FLTEExtRefModelBuilding-1733339979  
    unique id: 9c6d352c4ca211e08459002421a8c4c6  
    unique id: FLT\_0X0\_-5941746916707185650  
    unique id: LTF\_0X0X0\_1931  
    unique id: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1292] -  
=====> CellAgent: CellAgent-LTF-PRISM flagging dependent DataElement as inconsistent on layer: LTF\_FEATURES-PRISM

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1308] - Layer format: LTF

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1311] - Found: 1 DataElements on layer: LTF\_FEATURES-PRISM

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1319] - considering DataElement uniqueId: LTF\_0X0X0\_1931

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.blackboard.BlackBoardDataPanel::\_[1mcontainsDependentDataElements\_][0m [283] - Found dependent DataElement unique ids

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1322] - DataPanel contains uniqueId: LTF\_0X0X0\_1931 setting DataElement state to inconsistent.

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug  
INFO: dpbtbrngen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_][0m [1328] - Done, submitting: 1 dependent DataElement Agents

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log error  
SEVERE: [34m\*\*\*[ERROR]\*\*\*\_][0mdpbtbrngen.services.agents.CellAgent\$RunCorrelation::\_[1mrun\_][0m [1152] - Perform any necessary Cell CORRELATION tasks <<NOT IMPLEMENTED>> - pass cell correlation test for now

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log info  
INFO: dpbtbrngen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_][0m [343] - Updating capability: RunCellCorrelation state based on action results. confidence: High All preconditions will be updated as well.

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log info  
INFO: dpbtbrngen.services.agents.KnowledgeSource::\_[1mmakeKnowledgeSourceContribution\_][0m [399] -

=====> Agent: CellAgent-LTF-CYLINDER  
Executing the proposed contribution Function: RunCellCorrelation

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_[0m [166] - =====> Check DataPanel for the creation of correlated DataElements., Cell: CellAgent-LTF-CYLINDER  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_[0m [172] - Found dependent DataElements on DataPanel see if any needs to be created.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_[0m [173] - dependentDataElements:  
Dependent DataElements  
    unique id: LTF\_0X0X0\_1931  
    unique id: FLT\_0X0\_-5941746916707185650  
    unique id: LTF-LTFPrismBuildingWall-1835992364  
    unique id: FLT-FLTExtRefModelBuilding-1733339979  
    unique id: 9c6d352c4ca211e08459002421a8c4c6  
    unique id: FLT\_0X0\_-5941746916707185650  
    unique id: LTF\_0X0X0\_1931  
    unique id: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1292] - =====> CellAgent: CellAgent-LTF-CYLINDER flagging dependent DataElement as inconsistent on layer:  
LTF\_FEATURES-CYLINDER  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1308] - Layer format: LTF  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1311] - Found: 2 DataElements on layer: LTF\_FEATURES-CYLINDER  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1319] - considering DataElement uniqueId: LTF\_0X0X0\_187  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1319] - considering DataElement uniqueId: LTF\_0X0X0\_188  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1328] - Done, submitting: 0 dependent DataElement Agents  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_[0mdpbtbrgen.services.agents.CellAgent\$RunCorrelation::\_[1mrun\_[0m [1152] - Perform any necessary Cell CORRELATION tasks <<NOT IMPLEMENTED>> - pass cell correlation test for now  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_[0m [343] - Updating capability: RunCellCorrelation state based on action results. confidence: High All preconditions will be updated as well.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.KnowledgeSource::\_[1mmakeKnowledgeSourceContribution\_[0m [399] -

=====> Agent: CellAgent-FLT-EXTREF\_MODEL  
    Executing the proposed contribution Function: RunCellCorrelation

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_[0m [166] - =====> Check DataPanel for the creation of correlated DataElements., Cell: CellAgent-FLT-EXTREF\_MODEL  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_[0m [172] - Found dependent DataElements on DataPanel see if any needs to be created.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mreviewDataPanel\_[0m [173] - dependentDataElements:  
Dependent DataElements  
    unique id: LTF\_0X0X0\_1931  
    unique id: FLT\_0X0\_-5941746916707185650  
    unique id: LTF-LTFPrismBuildingWall-1835992364  
    unique id: FLT-FLTExtRefModelBuilding-1733339979  
    unique id: 9c6d352c4ca211e08459002421a8c4c6

unique id: FLT\_0X0\_-5941746916707185650  
unique id: LTF\_0X0X0\_1931  
unique id: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1292] -  
=====> CellAgent: CellAgent-FLT-EXTREF\_MODEL flagging dependent DataElement as inconsistent on layer:  
FLT\_FEATURES-EXTREF\_MODEL  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1308] - Layer format:  
FLT  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1311] - Found: 2  
DataElements on layer: FLT\_FEATURES-EXTREF\_MODEL  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1319] - considering  
DataElement uniqueId: FLT\_0X0\_-5941746916707185650  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataPanel::\_[1mcontainsDependentDataElements\_[0m [283] - Found dependent DataElement  
unique ids  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1322] - DataPanel  
contains uniqueId: FLT\_0X0\_-5941746916707185650 setting DataElement state to inconsistent.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1319] - considering  
DataElement uniqueId: FLT\_0X0\_8274118836400194277  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.agents.CellAgent::\_[1mflagDependentDataElementAgentsFromUniquIdsAsInconsistent\_[0m [1328] - Done,  
submitting: 1 dependent DataElement Agents  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log error  
SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_[0mdpbtbrgen.services.agents.CellAgent\$RunCorrelation::\_[1mrun\_[0m [1152] - Perform any necessary  
Cell CORRELATION tasks <<NOT IMPLEMENTED>> - pass cell correlation test for now  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.blackboard.BlackBoardDataItem::\_[1mupdateAction\_[0m [343] - Updating capability: RunCellCorrelation state  
based on action results. confidence: High All preconditions will be updated as well.  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1misMainGoalAchieved\_[0m [245] - GOAL STATE has been achieved. DONE  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mrun\_[0m [453] - =====> GOAL ACHIVED: we are done  
<=====

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mrun\_[0m [471] - Controller: done  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::\_[1mrunControllerProcess\_[0m [223] - =====>  
TdbChangeDetectionAndUpdateGenerator event: CHANGE <<<METRIC>>> client-to-sever change - processing time: 299259 msec  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::\_[1mrunControllerProcess\_[0m [226] -

### =====> Completed BlackboardController process <=====

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [337] - [[Data Panel]] \*\*\*LOW OR NO  
CONFIDENCE ITEMS\*\*\*  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [338] - Data Panel Item#5  
name: RegenDependentDataElements, type: Goal, confidence: Low  
preconditions: [subject(CreateCellAgents) ^ predicate (And) -> object(true) | subject(CreateDataElementAgents) ^ predicate (And) ->  
object(true) | subject(RegenRelatedDataElements) ^ predicate (And) -> object(true) | ]  
actions: RegenRelatedDataElements, outputs: [RunDataElementIntegrityTest]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [337] - [[Data Panel]] \*\*\*LOW OR NO CONFIDENCE ITEMS\*\*\*  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [338] - Data Panel Item#8  
name: RegenGeoScratchPadCells, type: Goal, confidence: None  
preconditions: [subject(RunDataElementIntegrityTest) ^ predicate (And) -> object(true) | subject(GeoScratchPadLayerIntegrityOK) ^ predicate (And) -> object(true) | subject(RegenGSPDataElement) ^ predicate (And) -> object(true) | subject(RegenGSPCells) ^ predicate (And) -> object(false) | ]  
actions: RegenGSPCells, outputs: [RunDataElementCorrelation, DataElementsCorrelated]  
changedDataElements: , id: 9c6d352c4ca211e08459002421a8c4c6

**\*\*ERROR\*\*** label: CorrelatedDataElementsUniquelD-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [337] - [[Data Panel]] \*\*\*LOW OR NO CONFIDENCE ITEMS\*\*\*

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [338] - Data Panel Item#10  
name: CorrelatedDataElementsUniquelD-FromPostCorrelatedDataElementUniqueIdsToDataPanel, type: InformationDATA ITEM - pring not implemented.

**\*\*ERROR\*\*** label: CorrelatedDataElementsUniquelD-FromCreateCorrelatedDataElementsAgents does not exist  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [337] - [[Data Panel]] \*\*\*LOW OR NO CONFIDENCE ITEMS\*\*\*

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [338] - Data Panel Item#11  
name: CorrelatedDataElementsUniquelD-FromCreateCorrelatedDataElementsAgents, type: InformationDATA ITEM - pring not implemented.

**\*\*ERROR\*\*** label: CorrelatedDataElementsUniquelD-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [337] - [[Data Panel]] \*\*\*LOW OR NO CONFIDENCE ITEMS\*\*\*

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [338] - Data Panel Item#12  
name: CorrelatedDataElementsUniquelD-FromPostCorrelatedDataElementUniqueIdsToDataPanel, type: InformationDATA ITEM - pring not implemented.

**\*\*ERROR\*\*** label: CorrelatedDataElementsUniquelD-FromPostCorrelatedDataElementUniqueIdsToDataPanel does not exist  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [337] - [[Data Panel]] \*\*\*LOW OR NO CONFIDENCE ITEMS\*\*\*

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [338] - Data Panel Item#13  
name: CorrelatedDataElementsUniquelD-FromPostCorrelatedDataElementUniqueIdsToDataPanel, type: InformationDATA ITEM - pring not implemented.

**\*\*ERROR\*\*** label: InconsistenDataElements-FromCorrelationTest does not exist  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [337] - [[Data Panel]] \*\*\*LOW OR NO CONFIDENCE ITEMS\*\*\*

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info  
INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [338] - Data Panel Item#14  
name: InconsistenDataElements-FromCorrelationTest, type: InformationDATA ITEM - pring not implemented.

**\*\*ERROR\*\*** label: InconsistenDataElements-FromCorrelationTest does not exist  
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [337] - [[Data Panel]] \*\*\*LOW OR NO CONFIDENCE ITEMS\*\*\*

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [338] - Data Panel Item#16  
name: InconsistenDataElements-FromCorrelationTest, type: InformationDATA ITEM - pring not implemented.

\*\*ERROR\*\* label: InconsistenDataElements-FromCorrelationTest does not exist

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [337] - [[Data Panel]] \*\*\*LOW OR NO CONFIDENCE ITEMS\*\*\*

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.agents.BlackboardController::\_[1mdisplayPendingGoals\_[0m [338] - Data Panel Item#16  
name: InconsistenDataElements-FromCorrelationTest, type: InformationDATA ITEM - pring not implemented.

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info

INFO: dpbtbrgen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::\_[1mgenerateCorrections\_[0m [252] - Generating correction events for 3 layer(s).

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::\_[1mgenerateCorrections\_[0m [269] - Processing generated: 1 corrections on layer: OTF\_FEATURES-Point

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetExtents\_[0m [247] - Point: extents sw: Geodetic: lat 34.891128 lon -117.022169 Deg ne: Geodetic: lat 34.891683 lon -117.021614 Deg

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

INFO: dpbtbrgen.services.geoscratchpad.TdbGen\_Geometry::\_[1mgetPointData\_[0m [367] - Point: data - Geodetic: lat 34.891406 lon -117.021892 Deg

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.common.TdbGen\_Event::\_[1m<init>\_[0m [128] - Received DataElement: [ net.onesaf.ext.dpbtbrgen.services.geoscratchpad.DataElement

```
{
  [label] BUILDING
  [format] OTF
  [unique id] 9c6d352c4ca211e08459002421a8c4c6
  [extents] ...
  sw: Geodetic: lat 34.891128 lon -117.022169 Deg ne: Geodetic: lat 34.891683 lon -117.021614 Deg
  [geometry] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Geometry
```

```
{
  type: Point
  coordType: GDC
  extents: sw: Geodetic: lat 34.891128 lon -117.022169 Deg ne: Geodetic: lat 34.891683 lon -117.021614 Deg
  point data: Geodetic: lat 34.891406 lon -117.021892 Deg
}
```

```
[attributes] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
```

```
{
  Attribute - type: class java.lang.Integer, name: NUMERIC_OBJECT_IDENTIFIER, value: 0
  Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_DOOR_PRI_WIDTH, value: 6.0
  Attribute - type: class java.lang.String, name: WALL_PREDOMINANT_SURFACE_MATERIAL, value: MASONRY
  Attribute - type: class java.lang.String, name: REGIONAL_STYLE, value: MODERN_INDUSTRIAL_CONSTRUCTION
  Attribute - type: class java.lang.Double, name: EMISSIVITY_QB_EM_BAND_AND_BUILDING_COMPONENT_TYPE, value: 0.0
  Attribute - type: class java.lang.Integer, name: COMPLEX_COMPONENT_IDENTIFIER, value: 0
  Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_FINE, value: ID_0
  Attribute - type: class java.lang.String, name: SNOW_ACCUMULATION, value: NONE_PRESENT
  Attribute - type: class java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0
  Attribute - type: class java.lang.String, name: BUILDING_CONSTRUCTION_TYPE, value: BRICK_CLAD_STEEL_FRAME
  Attribute - type: class java.lang.String, name: ROOF_SHAPE, value: FLAT
  Attribute - type: class java.lang.Double, name: ORIENTATION_ANGLE, value: 0.0
  Attribute - type: class java.lang.String, name: SOURCE, value: MISSING
  Attribute - type: class java.lang.String, name: ROOF_PREDOMINANT_SURFACE_MATERIAL, value: CONGLOMERATE
  Attribute - type: class java.lang.String, name: LIGHTING_CHARACTERIZATION, value: DIMLY_LIT
  Attribute - type: class java.lang.Double, name: OVERALL_VERTICAL_DIMENSION, value: 0.0
  Attribute - type: class java.lang.String, name: UNIVERSALLY_UNIQUE_ID, value: 9c6d352c4ca211e08459002421a8c4c6
}
```

```

Attribute - type: class java.lang.String, name: FRONT_AND_AXIS_REFERENCE, value: POSITIVE_X
Attribute - type: class java.lang.String, name: POINT_OBJECT_TYPE, value: VERT_STRUCTURE
Attribute - type: class java.lang.Double, name: ILLUMINANCE, value: 1.0
Attribute - type: class java.lang.String, name: PRIMARY_PRODUCT, value: NO_PRODUCT
Attribute - type: class java.lang.Double, name: PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION, value:
0.0
Attribute - type: class java.lang.Double, name: LENGTH, value: 15.0
Attribute - type: class java.lang.String, name: USAGE, value: NON_MILITARY
Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_MEDIUM, value: ID_20
Attribute - type: class java.lang.Double, name: ROOF_LOAD_BEARING_CAPACITY, value: 2.5
Attribute - type: class java.lang.String, name: NAME, value:
Attribute - type: class java.lang.Double, name: GENERAL_DAMAGE_FRACTION, value: 7.0
Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_COARSE, value: DEFAULT
Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_AREA, value: 0.0
Attribute - type: class java.lang.String, name: COLOURATION, value: BROWN
Attribute - type: class java.lang.Double, name: EXTERIOR_WALL_THICKNESS, value: 0.25
Attribute - type: class java.lang.Boolean, name: LADDER_PRESENT, value: true
Attribute - type: class java.lang.String, name: COMBUSTION_STATE, value: NOT_BURNING
Attribute - type: class java.lang.String, name: PRIMARY_ENTRANCE_LOCATION, value: FRONT_CENTRE_ON_GRADE
Attribute - type: class java.lang.Integer, name: ANTENNA_COUNT, value: 0
Attribute - type: class java.lang.Double, name: DEPTH_BELOW_SURFACE_LEVEL, value: 0.0
Attribute - type: class java.lang.Double, name: WIDTH, value: 13.0
Attribute - type: class java.lang.String, name: ROOF_PREDOMINANT_PATTERN, value: MOTTLED
Attribute - type: class java.lang.String, name: WALL_PREDOMINANT_PATTERN, value: BRICK
Attribute - type: class java.lang.Double, name: SURFACE_TEMPERATURE_QB_BUILDING_COMPONENT_TYPE, value: 15.0
Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_DOOR_PRI_HEIGHT, value: 3.0
Attribute - type: class java.lang.String, name: BUILDING_FUNCTION, value: HOUSE
Attribute - type: class java.lang.Integer, name: OBJECT_VARIANT, value: 0
}
ontology class info: namespace: http://localhost/ontologies/TDBConstructiveOTF.owl#, name: OTFPBuilding
layerName: OTF_FEATURES
}
]
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1mgetNext_0m [179] - Items left on ManagerQueue: 1
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [126] - Processing item:
net.onesaf.ext.dpbtbrgen.services.common.TdbGen_Event Object {
item id: 28f04979-2f91-4914-b484-b5b07b36f471
date: Thu Aug 04 15:51:39 EDT 2011
Time in queue: 0 milisec.
Processing time: 0 milisec.
Priority: 2
}
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [134] - sending event to :TdbRepositoryManager
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_0m [974] - Received TdbGen_Event event type: CORRECTION
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_0m [984] - LIST OF CHANGED DATA ELEMENTS
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_0m [247] - Point: extents sw: Geodetic: lat 34.891128 lon -
117.022169 Deg ne: Geodetic: lat 34.891683 lon -117.021614 Deg
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_0m [367] - Point: data - Geodetic: lat 34.891406 lon -
117.021892 Deg
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_0m [986] - DataElement:
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.DataElement
{
[label] BUILDING
[format] OTF
[unique id] 9c6d352c4ca211e08459002421a8c4c6

```

```

[extents] ...
sw: Geodetic: lat 34.891128 lon -117.022169 Deg      ne: Geodetic: lat 34.891683 lon -117.021614 Deg
[geometry] ...
net.onesaf.ext.dpbtdbrgen.services.geoscratchpad.TdbGen_Geometry
{
  type: Point
  coordType: GDC
  extents: sw: Geodetic: lat 34.891128 lon -117.022169 Deg      ne: Geodetic: lat 34.891683 lon -117.021614 Deg
  point data: Geodetic: lat 34.891406 lon -117.021892 Deg
}
[attributes] ...
net.onesaf.ext.dpbtdbrgen.services.geoscratchpad.TdbGen_Attributes
{
  Attribute - type: class java.lang.Integer, name: NUMERIC_OBJECT_IDENTIFIER, value: 0
  Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_DOOR_PRI_WIDTH, value: 6.0
  Attribute - type: class java.lang.String, name: WALL_PREDOMINANT_SURFACE_MATERIAL, value: MASONRY
  Attribute - type: class java.lang.String, name: REGIONAL_STYLE, value: MODERN_INDUSTRIAL_CONSTRUCTION
  Attribute - type: class java.lang.Double, name: EMISSIVITY_QB_EM_BAND_AND_BUILDING_COMPONENT_TYPE, value: 0.0
  Attribute - type: class java.lang.Integer, name: COMPLEX_COMPONENT_IDENTIFIER, value: 0
  Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_FINE, value: ID_0
  Attribute - type: class java.lang.String, name: SNOW_ACCUMULATION, value: NONE_PRESENT
  Attribute - type: class java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0
  Attribute - type: class java.lang.String, name: BUILDING_CONSTRUCTION_TYPE, value: BRICK_CLAD_STEEL_FRAME
  Attribute - type: class java.lang.String, name: ROOF_SHAPE, value: FLAT
  Attribute - type: class java.lang.Double, name: ORIENTATION_ANGLE, value: 0.0
  Attribute - type: class java.lang.String, name: SOURCE, value: MISSING
  Attribute - type: class java.lang.String, name: ROOF_PREDOMINANT_SURFACE_MATERIAL, value: CONGLOMERATE
  Attribute - type: class java.lang.String, name: LIGHTING_CHARACTERIZATION, value: DIMLY_LIT
  Attribute - type: class java.lang.Double, name: OVERALL_VERTICAL_DIMENSION, value: 0.0
  Attribute - type: class java.lang.String, name: UNIVERSALLY_UNIQUE_ID, value: 9c6d352c4ca211e08459002421a8c4c6
  Attribute - type: class java.lang.String, name: FRONT_AND_AXIS_REFERENCE, value: POSITIVE_X
  Attribute - type: class java.lang.String, name: POINT_OBJECT_TYPE, value: VERT_STRUCTURE
  Attribute - type: class java.lang.Double, name: ILLUMINANCE, value: 1.0
  Attribute - type: class java.lang.String, name: PRIMARY_PRODUCT, value: NO_PRODUCT
  Attribute - type: class java.lang.Double, name: PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION, value:
0.0
  Attribute - type: class java.lang.Double, name: LENGTH, value: 15.0
  Attribute - type: class java.lang.String, name: USAGE, value: NON_MILITARY
  Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_MEDIUM, value: ID_20
  Attribute - type: class java.lang.Double, name: ROOF_LOAD_BEARING_CAPACITY, value: 2.5
  Attribute - type: class java.lang.String, name: NAME, value:
  Attribute - type: class java.lang.Double, name: GENERAL_DAMAGE_FRACTION, value: 7.0
  Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_COARSE, value: DEFAULT
  Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_AREA, value: 0.0
  Attribute - type: class java.lang.String, name: COLOURATION, value: BROWN
  Attribute - type: class java.lang.Double, name: EXTERIOR_WALL_THICKNESS, value: 0.25
  Attribute - type: class java.lang.Boolean, name: LADDER_PRESENT, value: true
  Attribute - type: class java.lang.String, name: COMBUSTION_STATE, value: NOT_BURNING
  Attribute - type: class java.lang.String, name: PRIMARY_ENTRANCE_LOCATION, value: FRONT_CENTRE_ON_GRADE
  Attribute - type: class java.lang.Integer, name: ANTENNA_COUNT, value: 0
  Attribute - type: class java.lang.Double, name: DEPTH_BELOW_SURFACE_LEVEL, value: 0.0
  Attribute - type: class java.lang.Double, name: WIDTH, value: 13.0
  Attribute - type: class java.lang.String, name: ROOF_PREDOMINANT_PATTERN, value: MOTTLED
  Attribute - type: class java.lang.String, name: WALL_PREDOMINANT_PATTERN, value: BRICK
  Attribute - type: class java.lang.Double, name: SURFACE_TEMPERATURE_QB_BUILDING_COMPONENT_TYPE, value: 15.0
  Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_DOOR_PRI_HEIGHT, value: 3.0
  Attribute - type: class java.lang.String, name: BUILDING_FUNCTION, value: HOUSE
  Attribute - type: class java.lang.Integer, name: OBJECT_VARIANT, value: 0
}
ontology class info: namespace: http://localhost/ontologies/TDBConstructiveOTF.owl#, name: OTFPBuilding
layerName: OTF_FEATURES
}

```

```

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]*** _[0mdpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_][0m [988] - <<<<
CORRECTION INCORPORATION - UNDER DEBUG >>>>
Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_][0m [1015] - INCORPORATING CORRECTIONS in =====>
OTF TDB
Aug 4, 2011 3:51:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_][0m [1023] - =====> TdbRepositoryManager event:
CORRECTION processing time: 878 msec
Aug 4, 2011 3:51:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_][0m [134] - sending event to :PartialTdbGenServer
Aug 4, 2011 3:51:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_][0m [598] - Received TdbGen_Event event type: CORRECTION
Aug 4, 2011 3:51:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_][0m [609] - converting correction to XML and send to clients (3)
Aug 4, 2011 3:51:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_][0m [618] - Correction in TDB format: OTF
Aug 4, 2011 3:51:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]*** _[0mdpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_][0m [643] - Client Machine: lvcLive,
does not support: OTF
Aug 4, 2011 3:51:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_][0m [630] -
===== > SENDING UPDATE TO CLIENT: lvcConstructive <=====

```

```

Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_][0m [634] -

```

===== > XML update message <=====

```

<?xml version="1.0" encoding="UTF-8"?>
<ServerTargetFormatUpdate>
  <ChangeDateTime>1312487501179</ChangeDateTime>
  <ClientMachineName>lvcServer.localdomain</ClientMachineName>
  <ClientPort>7777</ClientPort>
  <ClientTargetFormat>OTF</ClientTargetFormat>
  <Description>Server Updates to OTF target format</Description>
  <UpdateList>
    <Update>
      <FeatureLabel>BUILDING</FeatureLabel>
      <FeatureId>9c6d352c4ca211e08459002421a8c4c6</FeatureId>
      <FeatureType>Point</FeatureType>
      <GeometryList>
        <Point>
          <X>-117.02189170000004</X>
          <Y>34.89140556</Y>
          <Z>711.0</Z>
        </Point>
      </GeometryList>
      <AttributeList>
        <Attribute>
          <Name>NUMERIC_OBJECT_IDENTIFIER</Name>
          <Value>0</Value>
        </Attribute>
        <Attribute>
          <Name>WALL_PREDOMINANT_SURFACE_MATERIAL</Name>
          <Value>MASONRY</Value>
        </Attribute>
        <Attribute>
          <Name>VEHICLE_STORAGE_DOOR_PRI_WIDTH</Name>
          <Value>6.0</Value>
        </Attribute>
      </AttributeList>
    </Update>
  </UpdateList>
</ServerTargetFormatUpdate>

```



```

    <Name>EMISSIVITY_QB_EM_BAND_AND_BUILDING_COMPONENT_TYPE</Name>
    <Value>0.0</Value>
  </Attribute>
  <Attribute>
    <Name>REGIONAL_STYLE</Name>
    <Value>MODERN_INDUSTRIAL_CONSTRUCTION</Value>
  </Attribute>
  <Attribute>
    <Name>COMPLEX_COMPONENT_IDENTIFIER</Name>
    <Value>0</Value>
  </Attribute>
  <Attribute>
    <Name>TERRAIN_TRAFFICABILITY_FINE</Name>
    <Value>ID_0</Value>
  </Attribute>
  <Attribute>
    <Name>SNOW_ACCUMULATION</Name>
    <Value>NONE_PRESENT</Value>
  </Attribute>
  <Attribute>
    <Name>HEIGHT_ABOVE_SURFACE_LEVEL</Name>
    <Value>5.0</Value>
  </Attribute>
  <Attribute>
    <Name>BUILDING_CONSTRUCTION_TYPE</Name>
    <Value>BRICK_CLAD_STEEL_FRAME</Value>
  </Attribute>
  <Attribute>
    <Name>ROOF_SHAPE</Name>
    <Value>FLAT</Value>
  </Attribute>
  <Attribute>
    <Name>SOURCE</Name>
    <Value>MISSING</Value>
  </Attribute>
  <Attribute>
    <Name>ORIENTATION_ANGLE</Name>
    <Value>0.0</Value>
  </Attribute>
  <Attribute>
    <Name>LIGHTING_CHARACTERIZATION</Name>
    <Value>DIMLY_LIT</Value>
  </Attribute>
  <Attribute>
    <Name>ROOF_PREDOMINANT_SURFACE_MATERIAL</Name>
    <Value>CONGLOMERATE</Value>
  </Attribute>
  <Attribute>
    <Name>OVERALL_VERTICAL_DIMENSION</Name>
    <Value>0.0</Value>
  </Attribute>
  <Attribute>
    <Name>UNIVERSALLY_UNIQUE_ID</Name>
    <Value>9c6d352c4ca211e08459002421a8c4c6</Value>
  </Attribute>
  <Attribute>
    <Name>FRONT_AND_AXIS_REFERENCE</Name>
    <Value>POSITIVE_X</Value>
  </Attribute>
  <Attribute>
    <Name>ILLUMINANCE</Name>
    <Value>1.0</Value>
  </Attribute>

```

```
<Attribute>
  <Name>POINT_OBJECT_TYPE</Name>
  <Value>VERT_STRUCTURE</Value>
</Attribute>
<Attribute>
  <Name>USAGE</Name>
  <Value>NON_MILITARY</Value>
</Attribute>
<Attribute>
  <Name>LENGTH</Name>
  <Value>15.0</Value>
</Attribute>
<Attribute>
  <Name>PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION</Name>
  <Value>0.0</Value>
</Attribute>
<Attribute>
  <Name>PRIMARY_PRODUCT</Name>
  <Value>NO_PRODUCT</Value>
</Attribute>
<Attribute>
  <Name>ROOF_LOAD_BEARING_CAPACITY</Name>
  <Value>2.5</Value>
</Attribute>
<Attribute>
  <Name>TERRAIN_TRAFFICABILITY_MEDIUM</Name>
  <Value>ID_20</Value>
</Attribute>
<Attribute>
  <Name>NAME</Name>
  <Value/>
</Attribute>
<Attribute>
  <Name>VEHICLE_STORAGE_AREA</Name>
  <Value>0.0</Value>
</Attribute>
<Attribute>
  <Name>TERRAIN_TRAFFICABILITY_COARSE</Name>
  <Value>DEFAULT</Value>
</Attribute>
<Attribute>
  <Name>GENERAL_DAMAGE_FRACTION</Name>
  <Value>7.0</Value>
</Attribute>
<Attribute>
  <Name>COLOURATION</Name>
  <Value>BROWN</Value>
</Attribute>
<Attribute>
  <Name>LADDER_PRESENT</Name>
  <Value>true</Value>
</Attribute>
<Attribute>
  <Name>EXTERIOR_WALL_THICKNESS</Name>
  <Value>0.25</Value>
</Attribute>
<Attribute>
  <Name>COMBUSTION_STATE</Name>
  <Value>NOT_BURNING</Value>
</Attribute>
<Attribute>
  <Name>ANTENNA_COUNT</Name>
  <Value>0</Value>
```

```

</Attribute>
<Attribute>
  <Name>PRIMARY_ENTRANCE_LOCATION</Name>
  <Value>FRONT_CENTRE_ON_GRADE</Value>
</Attribute>
<Attribute>
  <Name>DEPTH_BELOW_SURFACE_LEVEL</Name>
  <Value>0.0</Value>
</Attribute>
<Attribute>
  <Name>WIDTH</Name>
  <Value>13.0</Value>
</Attribute>
<Attribute>
  <Name>ROOF_PREDOMINANT_PATTERN</Name>
  <Value>MOTTLED</Value>
</Attribute>
<Attribute>
  <Name>WALL_PREDOMINANT_PATTERN</Name>
  <Value>BRICK</Value>
</Attribute>
<Attribute>
  <Name>SURFACE_TEMPERATURE_QB_BUILDING_COMPONENT_TYPE</Name>
  <Value>15.0</Value>
</Attribute>
<Attribute>
  <Name>VEHICLE_STORAGE_DOOR_PRI_HEIGHT</Name>
  <Value>3.0</Value>
</Attribute>
<Attribute>
  <Name>BUILDING_FUNCTION</Name>
  <Value>HOUSE</Value>
</Attribute>
<Attribute>
  <Name>OBJECT_VARIANT</Name>
  <Value>0</Value>
</Attribute>
</AttributeList>
</Update>
</UpdateList>
</ServerTargetFormatUpdate>

```

```

Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1msendUpdateXmlToClient_[0m [689] - sending XML tdb update to client:
lvcConstructive message count: 0
Message: Message from OTF Client: Received Server update, procesing ...
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_[0mdpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_[0m [643] - Client Machine:
lvcVirtual, does not support: OTF
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_[0m [646] - done
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_[0m [134] - sending event to :TdbChangeDetectionAndUpdateGenerator
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::_[1mgenerateCorrections_[0m [269] - Processing generated:
1 corrections on layer: LTF_FEATURES-PRISM
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_[0mdpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_[0m [270] - Geometry type:
class com.vividsolutions.jts.geom.MultiPoint DEBUG
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning

```

```

SEVERE: _[35m***[WARNING]***_[0mdpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_[0m [313] - MultiPoint:
extents sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021975 Deg DOUBLE CHECK ...
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPrismData_[0m [466] - LineString: data size - 8
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.common.TdbGen_Event::_[1m<init>_[0m [128] - Received DataElement: [
net.onesaf.ext.dpbtdbrgen.services.geoscratchpad.DataElement_LTF
{
    [label] Building Wall
    [format] LTF
    [unique_id] LTF_0X0X0_1931
    [extents] ...
    sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021802 Deg
    [geometry] ...
net.onesaf.ext.dpbtdbrgen.services.geoscratchpad.TdbGen_Geometry
{
    type: PRISM
    coordType: GDC
    extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021975 Deg
    prism data: Geodetic: lat 34.891315 lon -117.021975 Deg
    prism data: Geodetic: lat 34.891315 lon -117.021802 Deg
    prism data: Geodetic: lat 34.891501 lon -117.021802 Deg
    prism data: Geodetic: lat 34.891501 lon -117.021975 Deg
    prism data: Geodetic: lat 34.891315 lon -117.021975 Deg
    prism data: Geodetic: lat 34.891315 lon -117.021802 Deg
    prism data: Geodetic: lat 34.891501 lon -117.021802 Deg
    prism data: Geodetic: lat 34.891501 lon -117.021975 Deg
}
    [attributes] ...
net.onesaf.ext.dpbtdbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Wall Texture, value: walls.png
    Attribute - type: class java.lang.String, name: Foliage Texture, value: leaves.png
    Attribute - type: class java.lang.String, name: Door Decal, value: door.png
    Attribute - type: class java.lang.String, name: Roof Texture, value: roof.png
    Attribute - type: class java.lang.String, name: Window Decal, value: window.png
}
    ontology class info: namespace: http://localhost/ontologies/TDBLiveLTF.owl#, name: LTFPrismBuildingWall
}
]
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info
INFO: dpbtdbrgen.services.common.TdbGen_Queue::_[1mgetNext_[0m [179] - Items left on ManagerQueue: 1
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info
INFO: dpbtdbrgen.services.common.TdbGen_Queue::_[1madd_[0m [126] - Processing item:
net.onesaf.ext.dpbtdbrgen.services.common.TdbGen_Event Object {
    item id: af8f1973-058e-42cb-a721-2f1629da59b9
    date: Thu Aug 04 15:51:41 EDT 2011
    Time in queue: 0 milisec.
    Processing time: 0 milisec.
    Priority: 3
}
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info
INFO: dpbtdbrgen.services.common.TdbGen_Queue::_[1madd_[0m [134] - sending event to :TdbRepositoryManager
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_[0m [974] - Received TdbGen_Event event type: CORRECTION
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_[0m [984] - LIST OF CHANGED DATA ELEMENTS
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtdbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_[0mdpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_[0m [270] - Geometry type:
class com.vividsolutions.jts.geom.MultiPoint DEBUG.
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtdbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_[0mdpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_[0m [313] - MultiPoint:
extents sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021975 Deg DOUBLE CHECK ...

```



=====> XML update message <=====

```
<?xml version="1.0" encoding="UTF-8"?>
<ServerTargetFormatUpdate>
  <ChangeDateTime>1312487502249</ChangeDateTime>
  <ClientTargetFormat>LTF</ClientTargetFormat>
  <Description>Server Updates to LTF target format</Description>
  <UpdateList>
    <Update>
      <FeatureLabel>Building Wall</FeatureLabel>
      <FeatureId>LTF_0X0X0_1931</FeatureId>
      <FeatureType>PRISM</FeatureType>
      <GeometryList>
        <Point>
          <X>-2379489.191063474</X>
          <Y>-4665585.888039902</Y>
          <Z>3627983.471320409</Z>
        </Point>
        <Point>
          <X>-2379475.126248431</X>
          <Y>-4665593.061190614</Y>
          <Z>3627983.471320409</Z>
        </Point>
        <Point>
          <X>-2379469.7548426273</X>
          <Y>-4665582.529161916</Y>
          <Z>3628000.424143554</Z>
        </Point>
        <Point>
          <X>-2379483.819657671</X>
          <Y>-4665575.356011204</Y>
          <Z>3628000.424143554</Z>
        </Point>
        <Point>
          <X>-2379492.917656294</X>
          <Y>-4665593.194987835</Y>
          <Z>3627989.1915497966</Z>
        </Point>
        <Point>
          <X>-2379478.852841253</X>
          <Y>-4665600.368138547</Y>
          <Z>3627989.191549795</Z>
        </Point>
        <Point>
          <X>-2379473.481435449</X>
          <Y>-4665589.836109849</Y>
          <Z>3628006.144372942</Z>
        </Point>
        <Point>
          <X>-2379487.546250491</X>
          <Y>-4665582.662959138</Y>
          <Z>3628006.144372942</Z>
        </Point>
      </GeometryList>
      <AttributeList>
        <Attribute>
          <Name>Foliage Texture</Name>
          <Value>leaves.png</Value>
        </Attribute>
        <Attribute>
          <Name>Wall Texture</Name>
          <Value>walls.png</Value>
        </Attribute>
      </AttributeList>
    </Update>
  </UpdateList>
</ServerTargetFormatUpdate>
```

```

</Attribute>
<Attribute>
  <Name>Door Decal</Name>
  <Value>door.png</Value>
</Attribute>
<Attribute>
  <Name>Roof Texture</Name>
  <Value>roof.png</Value>
</Attribute>
<Attribute>
  <Name>Window Decal</Name>
  <Value>window.png</Value>
</Attribute>
</AttributeList>
</Update>
</UpdateList>
</ServerTargetFormatUpdate>

```

```

Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1msendUpdateXmlToClient_][0m [689] - sending XML tdb update to client: lvcLive
message count: 1
Message: Message from lvcLive: Received Server update, procesing ...
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_ [0mdpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_][0m [643] - Client Machine:
lvcConstructive, does not support: LTF
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_ [0mdpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_][0m [643] - Client Machine:
lvcVirtual, does not support: LTF
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_][0m [646] - done
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_][0m [134] - sending event to :TdbChangeDetectionAndUpdateGenerator
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::_[1mgenerateCorrections_][0m [269] - Processing generated:
1 corrections on layer: FLT FEATURES-EXTREF_MODEL
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_][0m [247] - Point: extents      sw: Geodetic: lat 36.562908 lon -
116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_][0m [367] - Point: data - Geodetic: lat 36.563186 lon -
116.592031 Deg
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.common.TdbGen_Event::_[1m<init>_][0m [128] - Received DataElement: [
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.DataElement_FLT
{
  [label] AL015
  [format] FLT
  [unique_id] FLT_0X0_-5941746916707185650
  [extents] ...
  sw: Geodetic: lat 36.562908 lon -116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
  [geometry] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Geometry
{
  type: EXTREF_MODEL
  coordType: GDC
  extents:      sw: Geodetic: lat 36.562908 lon -116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
  filename: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51-destroyed.flt
  origin: Geodetic: lat 36.563186 lon -116.592031 Deg
  aoo: 0.0
}
}

```

```

[attributes] ...
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.Double, name: WID, value: 10.0
    Attribute - type: class java.lang.Double, name: HGT, value: 4.0
    Attribute - type: class java.lang.String, name: Label, value: AL015
    Attribute - type: class java.lang.Double, name: AOO, value: 0.0
    Attribute - type: class java.lang.Integer, name: EXS, value: 7
    Attribute - type: class java.lang.Double, name: LNT, value: 10.0
}
ontology class info: namespace: http://localhost/ontologies/TDBVirtualFLT.owl#, name: FLTextRefModelBuilding
}
]

```

```

Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrngen.services.common.Log info
INFO: dpbtbrngen.services.common.TdbGen_Queue::_[1mgetNext_][0m [179] - Items left on ManagerQueue: 1
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrngen.services.common.Log info
INFO: dpbtbrngen.services.common.TdbGen_Queue::_[1madd_][0m [126] - Processing item:
net.onesaf.ext.dpbtbrngen.services.common.TdbGen_Event Object {
    item id: f91a0c6e-0ad0-40d6-b87c-5fefb156e140
    date: Thu Aug 04 15:51:42 EDT 2011
    Time in queue: 0 milisec.
    Processing time: 0 milisec.
    Priority: 4
}

```

```

Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrngen.services.common.Log info
INFO: dpbtbrngen.services.common.TdbGen_Queue::_[1madd_][0m [134] - sending event to :TdbRepositoryManager
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_][0m [974] - Received TdbGen_Event event type: CORRECTION
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_][0m [984] - LIST OF CHANGED DATA ELEMENTS
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_][0m [247] - Point: extents      sw: Geodetic: lat 36.562908 lon -
116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_][0m [367] - Point: data - Geodetic: lat 36.563186 lon -
116.592031 Deg
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_][0m [986] - DataElement:
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.DataElement_FLT
{

```

```

    [label] AL015
    [format] FLT
    [unique_id] FLT_0X0_-5941746916707185650
    [extents] ...
    sw: Geodetic: lat 36.562908 lon -116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
    [geometry] ...

```

```

net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen_Geometry
{
    type: EXTREF_MODEL
    coordType: GDC
    extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
    filename: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51-destroyed.ftl
    origin: Geodetic: lat 36.563186 lon -116.592031 Deg
    aoo: 0.0
}

```

```

[attributes] ...
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.Double, name: WID, value: 10.0
    Attribute - type: class java.lang.Double, name: HGT, value: 4.0
    Attribute - type: class java.lang.String, name: Label, value: AL015
    Attribute - type: class java.lang.Double, name: AOO, value: 0.0
}

```





```

    <Value>10.0</Value>
  </Attribute>
  <Attribute>
    <Name>HGT</Name>
    <Value>4.0</Value>
  </Attribute>
  <Attribute>
    <Name>Label</Name>
    <Value>AL015</Value>
  </Attribute>
  <Attribute>
    <Name>AOO</Name>
    <Value>0.0</Value>
  </Attribute>
  <Attribute>
    <Name>EXS</Name>
    <Value>7</Value>
  </Attribute>
  <Attribute>
    <Name>LNT</Name>
    <Value>10.0</Value>
  </Attribute>
</AttributeList>
</Update>
</UpdateList>
</ServerTargetFormatUpdate>

```

```

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.server.PartialTdbGenServer::_[1msendUpdateXmlToClient_][0m [689] - sending XML tdb update to client:
IvcVirtual message count: 2
Message: Message from IvcVirtual: Received Server update, procesing ...
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.server.PartialTdbGenServer::_[1mhandle_][0m [646] - done
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log info
INFO: dpbtbrngen.services.common.TdbGen_Queue::_[1madd_][0m [134] - sending event to :TdbChangeDetectionAndUpdateGenerator
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log info
INFO: dpbtbrngen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::_[1mgenerateCorrections_][0m [285] - Generating recompile
events for 3 layers.
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::_[1mgenerateCorrections_][0m [311] - Generating COMPILER
TDB event for layer: OTF_FEATURES-Point
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_][0m [247] - Point: extents      sw: Geodetic: lat 34.891128 lon -
117.022169 Deg      ne: Geodetic: lat 34.891683 lon -117.021614 Deg
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_][0m [367] - Point: data - Geodetic: lat 34.891406 lon -
117.021892 Deg
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.common.TdbGen_Event::_[1m<init>_][0m [128] - Received DataElement: [
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.DataElement
{
    [label] BUILDING
    [format] OTF
    [unique id] 9c6d352c4ca211e08459002421a8c4c6
    [extents] ...
    sw: Geodetic: lat 34.891128 lon -117.022169 Deg      ne: Geodetic: lat 34.891683 lon -117.021614 Deg
    [geometry] ...
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen_Geometry
{
    type: Point
    coordType: GDC

```

```

    extents: sw: Geodetic: lat 34.891128 lon -117.022169 Deg    ne: Geodetic: lat 34.891683 lon -117.021614 Deg
    point data: Geodetic: lat 34.891406 lon -117.021892 Deg
}
[attributes] ...
net.onesaf.ext.dpbtdbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.Integer, name: NUMERIC_OBJECT_IDENTIFIER, value: 0
    Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_DOOR_PRI_WIDTH, value: 6.0
    Attribute - type: class java.lang.String, name: WALL_PREDOMINANT_SURFACE_MATERIAL, value: MASONRY
    Attribute - type: class java.lang.String, name: REGIONAL_STYLE, value: MODERN_INDUSTRIAL_CONSTRUCTION
    Attribute - type: class java.lang.Double, name: EMISSIVITY_QB_EM_BAND_AND_BUILDING_COMPONENT_TYPE, value: 0.0
    Attribute - type: class java.lang.Integer, name: COMPLEX_COMPONENT_IDENTIFIER, value: 0
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_FINE, value: ID_0
    Attribute - type: class java.lang.String, name: SNOW_ACCUMULATION, value: NONE_PRESENT
    Attribute - type: class java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0
    Attribute - type: class java.lang.String, name: BUILDING_CONSTRUCTION_TYPE, value: BRICK_CLAD_STEEL_FRAME
    Attribute - type: class java.lang.String, name: ROOF_SHAPE, value: FLAT
    Attribute - type: class java.lang.Double, name: ORIENTATION_ANGLE, value: 0.0
    Attribute - type: class java.lang.String, name: SOURCE, value: MISSING
    Attribute - type: class java.lang.String, name: ROOF_PREDOMINANT_SURFACE_MATERIAL, value: CONGLOMERATE
    Attribute - type: class java.lang.String, name: LIGHTING_CHARACTERIZATION, value: DIMLY_LIT
    Attribute - type: class java.lang.Double, name: OVERALL_VERTICAL_DIMENSION, value: 0.0
    Attribute - type: class java.lang.String, name: UNIVERSALLY_UNIQUE_ID, value: 9c6d352c4ca211e08459002421a8c4c6
    Attribute - type: class java.lang.String, name: FRONT_AND_AXIS_REFERENCE, value: POSITIVE_X
    Attribute - type: class java.lang.String, name: POINT_OBJECT_TYPE, value: VERT_STRUCTURE
    Attribute - type: class java.lang.Double, name: ILLUMINANCE, value: 1.0
    Attribute - type: class java.lang.String, name: PRIMARY_PRODUCT, value: NO_PRODUCT
    Attribute - type: class java.lang.Double, name: PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION, value:
0.0
    Attribute - type: class java.lang.Double, name: LENGTH, value: 15.0
    Attribute - type: class java.lang.String, name: USAGE, value: NON_MILITARY
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_MEDIUM, value: ID_20
    Attribute - type: class java.lang.Double, name: ROOF_LOAD_BEARING_CAPACITY, value: 2.5
    Attribute - type: class java.lang.String, name: NAME, value:
    Attribute - type: class java.lang.Double, name: GENERAL_DAMAGE_FRACTION, value: 7.0
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_COARSE, value: DEFAULT
    Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_AREA, value: 0.0
    Attribute - type: class java.lang.String, name: COLOURATION, value: BROWN
    Attribute - type: class java.lang.Double, name: EXTERIOR_WALL_THICKNESS, value: 0.25
    Attribute - type: class java.lang.Boolean, name: LADDER_PRESENT, value: true
    Attribute - type: class java.lang.String, name: COMBUSTION_STATE, value: NOT_BURNING
    Attribute - type: class java.lang.String, name: PRIMARY_ENTRANCE_LOCATION, value: FRONT_CENTRE_ON_GRADE
    Attribute - type: class java.lang.Integer, name: ANTENNA_COUNT, value: 0
    Attribute - type: class java.lang.Double, name: DEPTH_BELOW_SURFACE_LEVEL, value: 0.0
    Attribute - type: class java.lang.Double, name: WIDTH, value: 13.0
    Attribute - type: class java.lang.String, name: ROOF_PREDOMINANT_PATTERN, value: MOTTLED
    Attribute - type: class java.lang.String, name: WALL_PREDOMINANT_PATTERN, value: BRICK
    Attribute - type: class java.lang.Double, name: SURFACE_TEMPERATURE_QB_BUILDING_COMPONENT_TYPE, value: 15.0
    Attribute - type: class java.lang.Double, name: VEHICLE_STORAGE_DOOR_PRI_HEIGHT, value: 3.0
    Attribute - type: class java.lang.String, name: BUILDING_FUNCTION, value: HOUSE
    Attribute - type: class java.lang.Integer, name: OBJECT_VARIANT, value: 0
}
ontology class info: namespace: http://localhost/ontologies/TDBConstructiveOTF.owl#, name: OTFPBuilding
layerName: OTF_FEATURES
}
]
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info
INFO: dpbtdbrgen.services.common.TdbGen_Queue: [1mgetNext [0m [179] - Items left on ManagerQueue: 1
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info
INFO: dpbtdbrgen.services.common.TdbGen_Queue: [1madd [0m [126] - Processing item:
net.onesaf.ext.dpbtdbrgen.services.common.TdbGen_Event Object {
item id: d0a91bda-cd76-4aaf-83a0-fc09b1863c57
date: Thu Aug 04 15:51:43 EDT 2011

```

```

Time in queue: 0 milisec.
Processing time: 0 milisec.
Priority: 5
}
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [134] - sending event to :TdbRepositoryManager
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_0m [974] - Received TdbGen_Event event type: COMPILE
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_0m [1034] - COMPILE TDB
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::_[1mhandle_0m [1047] - =====> TdbRepositoryManager event: COMPILE
processing time: 96250 msec
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [134] - sending event to :PartialTdbGenServer
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_0m [598] - Received TdbGen_Event event type: COMPILE
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [134] - sending event to :TdbChangeDetectionAndUpdateGenerator
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::_[1mgenerateCorrections_0m [311] - Generating COMPILE
TDB event for layer: LTF_FEATURES-PRISM
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_0mdpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_0m [270] - Geometry type:
class com.vividsolutions.jts.geom.MultiPoint DEBUG.
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_0mdpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_0m [313] - MultiPoint:
extents sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021975 Deg DOUBLE CHECK ...
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPrismData_0m [466] - LineString: data size - 8
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.common.TdbGen_Event::_[1m<init>_0m [128] - Received DataElement: [
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.DataElement_LTF
{
    [label] Building Wall
    [format] LTF
    [unique_id] LTF_0X0X0_1931
    [extents] ...
    sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021802 Deg
    [geometry] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Geometry
{
    type: PRISM
    coordType: GDC
    extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021975 Deg
    prism data: Geodetic: lat 34.891315 lon -117.021975 Deg
    prism data: Geodetic: lat 34.891315 lon -117.021802 Deg
    prism data: Geodetic: lat 34.891501 lon -117.021802 Deg
    prism data: Geodetic: lat 34.891501 lon -117.021975 Deg
    prism data: Geodetic: lat 34.891315 lon -117.021975 Deg
    prism data: Geodetic: lat 34.891315 lon -117.021802 Deg
    prism data: Geodetic: lat 34.891501 lon -117.021802 Deg
    prism data: Geodetic: lat 34.891501 lon -117.021975 Deg
}
    [attributes] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: Wall Texture, value: walls.png
    Attribute - type: class java.lang.String, name: Foliage Texture, value: leaves.png
    Attribute - type: class java.lang.String, name: Door Decal, value: door.png
    Attribute - type: class java.lang.String, name: Roof Texture, value: roof.png
    Attribute - type: class java.lang.String, name: Window Decal, value: window.png
}
}

```

```

ontology class info: namespace: http://localhost/ontologies/TDBLiveLTF.owl#, name: LTFPrismBuildingWall
}
]
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1mgetNext_0m [179] - Items left on ManagerQueue: 1
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [126] - Processing item:
net.onesaf.ext.dpbtbrgen.services.common.TdbGen_Event Object {
item id: e788df63-a4c1-44c7-b51b-ca3d0a5ca7aa
date: Thu Aug 04 15:53:19 EDT 2011
Time in queue: 0 milisec.
Processing time: 0 milisec.
Priority: 6
}
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [134] - sending event to :TdbRepositoryManager
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_0m [974] - Received TdbGen_Event event type: COMPILE
Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_0m [1034] - COMPILE TDB
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_0m [1047] - =====> TdbRepositoryManager event: COMPILE
processing time: 1369 msec
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [134] - sending event to :PartialTdbGenServer
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_0m [598] - Received TdbGen_Event event type: COMPILE
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [134] - sending event to :TdbChangeDetectionAndUpdateGenerator
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.blackboard.TdbChangeDetectionAndUpdateGenerator::_[1mgenerateCorrections_0m [311] - Generating COMPILE
TDB event for layer: FLT_FEATURES-EXTREF_MODEL
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_0m [247] - Point: extents      sw: Geodetic: lat 36.562908 lon -
116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetPointData_0m [367] - Point: data - Geodetic: lat 36.563186 lon -
116.592031 Deg
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.common.TdbGen_Event::_[1m<init>_0m [128] - Received DataElement: [
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.DataElement_FLT
{
[label] AL015
[format] FLT
[unique_id] FLT_0X0_-5941746916707185650
[extents] ...
sw: Geodetic: lat 36.562908 lon -116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
[geometry] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Geometry
{
type: EXTREF_MODEL
coordType: GDC
extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
filename: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51-destroyed.flt
origin: Geodetic: lat 36.563186 lon -116.592031 Deg
aoo: 0.0
}
[attributes] ...
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Attributes
{
Attribute - type: class java.lang.Double, name: WID, value: 10.0
Attribute - type: class java.lang.Double, name: HGT, value: 4.0
Attribute - type: class java.lang.String, name: Label, value: AL015

```

```

Attribute - type: class java.lang.Double, name: AOO, value: 0.0
Attribute - type: class java.lang.Integer, name: EXS, value: 7
Attribute - type: class java.lang.Double, name: LNT, value: 10.0
}
ontology class info: namespace: http://localhost/ontologies/TDBVirtualFLT.owl#, name: FLTextRefModelBuilding
}
]
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1mgetNext_0m [179] - Items left on ManagerQueue: 1
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [126] - Processing item:
net.onesaf.ext.dpbtbrgen.services.common.TdbGen_Event Object {
item id: 698ca610-ea60-4383-9edb-89949cbbb6b8
date: Thu Aug 04 15:53:21 EDT 2011
Time in queue: 0 milisec.
Processing time: 0 milisec.
Priority: 7
}
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [134] - sending event to :TdbRepositoryManager
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_0m [974] - Received TdbGen_Event event type: COMPILE
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_0m [1034] - COMPILE TDB
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mhandle_0m [1047] - =====> TdbRepositoryManager event: COMPILE
processing time: 134 msec
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [134] - sending event to :PartialTdbGenServer
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1mhandle_0m [598] - Received TdbGen_Event event type: COMPILE
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.common.TdbGen_Queue::_[1madd_0m [134] - sending event to :TdbChangeDetectionAndUpdateGenerator
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1mresetClientMessage_0m [382] - re-set xml_document - set to null
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.PartialTdbGenServer::_[1mpostMessage_0m [448] - =====> PartialTdbGenServer event: CHANGE
processing time: 401289 msec
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.server.ConnectionHandler::_[1mrun_0m [850] - =====> done processing client message #0
=====
TIME: Stopping at Thu Aug 4 16:22:19 EDT 2011

```

## OTF client log - otfApiServer-aug04-5.log

Log shows ERC calls performed to regenerate local OTF.

TIME: Running on lvcServer.localdomain at Thu Aug 4 15:35:03 EDT 2011 - net.onesaf.core.services.sys.composition.RuntimeLoader  
OTFApiServer - -Dnet.onesaf.core.services.sys.messaging.messagingEnabled=false

DEBUG INFO PATHS START

PATH =

./native:/work/jdk1.6.0\_10/bin:/work/sp\_onesaf2\_1/SWR/external/ant/bin:/usr/bin:/sbin:/usr/sbin:/work/jdk1.6.0\_10/bin:/work/sp\_onesaf2\_1/SWR/external/ant/bin:/usr/bin:/sbin:/usr/sbin:/usr/lib64/qt-3.3/bin:/usr/kerberos/bin:/usr/local/bin:/usr/bin:/bin:/usr/X11R6/bin:/home/bgraniela/bin:/work/sp\_onesaf2\_1/SWR/lib/so:/work/sp\_onesaf2\_1/SWR/lib/so/linux/x86\_64:/work/sp\_onesaf2\_1/SWR/external/LTFApi:/work/osg/OpenSceneGraph-2.6.1/lib:/work/osg/OpenSceneGraph-2.6.1/lib/osgPlugins-2.6.1:/work/osg/OpenSceneGraph-2.6.1/bin

LD\_LIBRARY\_PATH =  
./native:/work/sp\_onesaf2\_1/SWR/lib/so:/work/sp\_onesaf2\_1/SWR/lib/so/linux/x86\_64:/usr/X11R6/lib:/work/sp\_onesaf2\_1/SWR/lib/so:/work/sp\_onesaf2\_1/SWR/lib/so/linux/x86\_64:/work/sp\_onesaf2\_1/SWR/external/LTFApi:/work/osg/OpenSceneGraph-2.6.1/lib:/work/osg/OpenSceneGraph-2.6.1/lib/osgPlugins-2.6.1

CLASSPATH =  
/work/jdk1.6.0\_10/lib/dt.jar:/work/jdk1.6.0\_10/lib/tools.jar:/external/PilotTestExternal/grouplayout.jar:/external/FLTApi/FLTReadWrite.jar:/external/LTFApi/LTFReadWrite.jar:/external/PilotTestExternal/srm.jar:/external/PilotTestExternal/pellet-2.1.1/lib/aterm-java-1.6.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-test.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-rules.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-query.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-pellint.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapi.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-modularity.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-jena.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-explanation.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-el.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-dig.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-datatypes.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-core.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/xercesImpl-2.7.1.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/wstx-asl-3.2.9.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/tax-api-1.0.1.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/slf4j-log4j12-1.5.6.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/slf4j-api-1.5.6.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/lucene-core-2.3.1.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/log4j-1.2.13.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/junit-4.5.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/jena-2.6.2-test.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/jena-2.6.2.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/iri-0.7.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/icu4j-3.4.4.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/arq-2.8.1.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jetty/jetty.jar:/external/PilotTestExternal/pellet-2.1.1/lib/xsdlib/xsdlib.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-relaxngDatatype.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapi.jar:/external/PilotTestExternal/pellet-2.1.1/lib/owlapi/owlapi-bin.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapiv3.jar:/external/PilotTestExternal/pellet-2.1.1/lib/owlapiv3/owlapi-bin.jar:/external/PilotTestExternal/gt2-coverage-2.4.4.jar:/external/PilotTestExternal/gt2-gml-2.4.4.jar:/external/PilotTestExternal/gt2-main-2.4.4.jar:/external/PilotTestExternal/jts-1.8.jar:/external/jetty/servlet-api-2.5-6.0.0rc2.jar:/external/jetty/jetty-util-6.0.0rc2.jar:/external/jetty/jetty-6.0.0rc2.jar:/external/scripting/rhino1\_6R7.jar:/external/scripting/jython.jar:/external/scripting/js-engine.jar:/external/scripting/jython-engine.jar:/external/scripting/script-api.jar:/external/xmlbeans/DGMsgMappings.jar:/external/xmlbeans/xmlbeans-2.3.0/lib/xbean.jar:/external/truezip/truezip.jar:/external/jmx/jmxremote\_optional.jar:/external/jmx/jmxremote.jar:/external/jmx/jmxtools.jar:/external/commons-math/commons-math-1.1.jar:/external/poi/poi-2.5.1-final-20040804.jar:/external/java3d/j3dutils.jar:/external/java3d/j3dcore.jar:/external/java3d/vecmath.jar:/external/jrms/classes.jar:/external/prefuse/prefuse.jar:/external/prefuse/prefuse.jar:/external/skinlf/skinlf.jar:/external/javahelp/lib/hall.jar:/external/xerces/xml-apis.jar:/external/xerces/xercesImpl.jar:/external/jaxb/lib/jaxb-all.jar:/external/infobus/infobus.jar:/external/mckoi1.0.2/mckoidb.jar:/external/xalan2/xalan.jar:/lib/services/sys/proploader.jar:/external/log4j/log4j-1.2.8.jar:/lib/services/sys/logger2.jar:/lib/services/sys/init.jar:/lib/services/sys/enum.jar:/lib/services/sys/cachemgr.jar:/lib/services/sys/ext.jar:/lib/services/sys/repository.jar:/lib/services/gui/support/support.jar:/lib/services/gui/tool/resources.jar:/lib/services/sys/timer.jar:/lib/services/data/sax.jar:/lib/services/data/dom.jar:/lib/services/data/encodable.jar:/lib/services/sys/capability.jar:/lib/services/sys/composition.jar

DEBUG INFO PATHS END

```

Aug 4, 2011 3:35:10 PM net.onesaf.core.services.sys.messaging.ServiceRegistry <init>
WARNING: Messaging Services disabled flag is set. Going to single node mode.
00:00] GVT: -1 info ../../../../../../src/net/onesaf/core/services/erc/native/src/core/sim_time.cpp 332:
+ CORE::SimTime initialized from the system clock.
Creating OTF TdbApiInterface implementation
Binding RMI service: rmi://localhost/OTFApiService to rmiregistry
rmi://localhost/OTFApiService ready.
Aug 4, 2011 3:44:58 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_Iinitialize_[0m [173] - ==> ERC already initialized.
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_IprocessClientChange_[0m [491] - Processing OTF client updates
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IgetStringAttribute_[0m [274] - Attribute [name: FeatureType] [value: Point]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_IprocessOtfPoint_[0m [227] - processOtfPoint
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log warning
SEVERE: [35m***[WARNING]*** [0mdpbtbrngen.services.tdbrepository.OTFApiImpl::_IprocessOtfPoint_[0m [281] -
geom.getNodeType() != Node.ELEMENT_NODE
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IgetStringAttribute_[0m [274] - Attribute [name: X] [value: -117.02189170000001]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IgetStringAttribute_[0m [274] - Attribute [name: Y] [value: 34.891405562253446]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IgetStringAttribute_[0m [274] - Attribute [name: Z] [value: 711.0001743612811]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IxmlToPoint3d_[0m [403] - X,Y,Z (-
117.02189170000001,34.891405562253446,711.0001743612811)
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_IprocessOtfPoint_[0m [247] - point: (-117.02189170000001, 34.891405562253446,
711.0001743612811)
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log warning
SEVERE: [35m***[WARNING]*** [0mdpbtbrngen.services.tdbrepository.OTFApiImpl::_IprocessOtfPoint_[0m [281] -
geom.getNodeType() != Node.ELEMENT_NODE
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_IprocessOtfPoint_[0m [303] - Changed DataElement attributes
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IgetStringAttribute_[0m [274] - Attribute [name: Name] [value:
TERRAIN_TRAFFICABILITY_FINE]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IgetStringAttribute_[0m [274] - Attribute [name: Value] [value: ID_0]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_IprocessOtfPoint_[0m [315] - 1# name: TERRAIN_TRAFFICABILITY_FINE,
value: ID_0
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IgetStringAttribute_[0m [274] - Attribute [name: Name] [value:
HEIGHT_ABOVE_SURFACE_LEVEL]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IgetStringAttribute_[0m [274] - Attribute [name: Value] [value: 5.0]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_IprocessOtfPoint_[0m [315] - 3# name: HEIGHT_ABOVE_SURFACE_LEVEL,
value: 5.0
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IgetStringAttribute_[0m [274] - Attribute [name: Name] [value:
ORIENTATION_ANGLE]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IgetStringAttribute_[0m [274] - Attribute [name: Value] [value: 0.0]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_IprocessOtfPoint_[0m [315] - 5# name: ORIENTATION_ANGLE, value: 0.0
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IgetStringAttribute_[0m [274] - Attribute [name: Name] [value: ILLUMINANCE]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_IgetStringAttribute_[0m [274] - Attribute [name: Value] [value: 1.0]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

```



INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[ImprocessOtfPoint\_]0m [315] - 7# name: ILLUMINANCE, value: 1.0  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Name] [value: USAGE]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Value] [value: NON\_MILITARY]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[ImprocessOtfPoint\_]0m [315] - 9# name: USAGE, value: NON\_MILITARY  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Name] [value: PREPARED\_EXPLOSIVE\_DESTRUCTION\_COMPLETION\_FRACTION]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Value] [value: 0.0]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[ImprocessOtfPoint\_]0m [315] - 11# name: PREPARED\_EXPLOSIVE\_DESTRUCTION\_COMPLETION\_FRACTION, value: 0.0  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Name] [value: LENGTH]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Value] [value: 15.0]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[ImprocessOtfPoint\_]0m [315] - 13# name: LENGTH, value: 15.0  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Name] [value: PRIMARY\_PRODUCT]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Value] [value: NO\_PRODUCT]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[ImprocessOtfPoint\_]0m [315] - 15# name: PRIMARY\_PRODUCT, value: NO\_PRODUCT  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Name] [value: TERRAIN\_TRAFFICABILITY\_MEDIUM]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Value] [value: ID\_20]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[ImprocessOtfPoint\_]0m [315] - 17# name: TERRAIN\_TRAFFICABILITY\_MEDIUM, value: ID\_20  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Name] [value: TERRAIN\_TRAFFICABILITY\_COARSE]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Value] [value: DEFAULT]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[ImprocessOtfPoint\_]0m [315] - 19# name: TERRAIN\_TRAFFICABILITY\_COARSE, value: DEFAULT  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Name] [value: GENERAL\_DAMAGE\_FRACTION]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Value] [value: 7.0]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[ImprocessOtfPoint\_]0m [315] - 21# name: GENERAL\_DAMAGE\_FRACTION, value: 7.0  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Name] [value: DEPTH\_BELOW\_SURFACE\_LEVEL]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Value] [value: 0.0]  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[ImprocessOtfPoint\_]0m [315] - 23# name: DEPTH\_BELOW\_SURFACE\_LEVEL, value: 0.0  
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.TdbApi::\_[ImgetStringAttribute\_]0m [274] - Attribute [name: Name] [value: BUILDING\_FUNCTION]

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Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_[1mgetStringAttribute_0m [274] - Attribute [name: Value] [value: HOUSE]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_[1mprocessOtfPoint_0m [315] - 25# name: BUILDING_FUNCTION, value: HOUSE
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_[1mgetStringAttribute_0m [274] - Attribute [name: FeatureLabel] [value: BUILDING]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_[1mgetStringAttribute_0m [274] - Attribute [name: FeatureId] [value:
9c6d352c4ca211e08459002421a8c4c6]
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_[1mprocessClientChange_0m [556] - <<<CHANGE>> DataElement:
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.DataElement
{
    [label] BUILDING
    [format] OTF
    [unique id] 9c6d352c4ca211e08459002421a8c4c6
    [extents] ...
    sw: Geodetic: lat 34.891128 lon -117.022169 Deg      ne: Geodetic: lat 34.891683 lon -117.021614 Deg
    [geometry] ...
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen_Geometry
{
    type: Point
    coordType: GDC
    extents:  sw: Geodetic: lat 34.891128 lon -117.022169 Deg      ne: Geodetic: lat 34.891683 lon -117.021614 Deg
    point data: Geodetic: lat 34.891406 lon -117.021892 Deg
}
    [attributes] ...
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_MEDIUM, value: ID_20
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_COARSE, value: DEFAULT
    Attribute - type: class java.lang.Double, name: GENERAL_DAMAGE_FRACTION, value: 7.0
    Attribute - type: class java.lang.String, name: TERRAIN_TRAFFICABILITY_FINE, value: ID_0
    Attribute - type: class java.lang.Double, name: DEPTH_BELOW_SURFACE_LEVEL, value: 0.0
    Attribute - type: class java.lang.Double, name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0
    Attribute - type: class java.lang.Double, name: ORIENTATION_ANGLE, value: 0.0
    Attribute - type: class java.lang.String, name: BUILDING_FUNCTION, value: HOUSE
    Attribute - type: class java.lang.Double, name: ILLUMINANCE, value: 1.0
    Attribute - type: class java.lang.String, name: USAGE, value: NON_MILITARY
    Attribute - type: class java.lang.Double, name: PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION, value:
0.0
    Attribute - type: class java.lang.Double, name: LENGTH, value: 15.0
    Attribute - type: class java.lang.String, name: PRIMARY_PRODUCT, value: NO_PRODUCT
}
    ontology class info: null
    layerName: UNDEFINED
}
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_[1minitialize_0m [173] - =====> ERC already initialized.
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrngen.services.common.Log info
INFO: dpbtbrngen.services.geoscratchpad.LayerAbstract::_[1m<init>_0m [60] - Layer Type: FeatureContainer
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_[1mreadFeatures_0m [1167] - =====> read OTF features of type: Point, from
area =====> sw: GDC: (lat: 34.89112778447567 long: -117.0221694777782 elevation: 0.0, ne: GDC: (lat: 34.89168334003122 long: -
117.02161392222223 elevation: 0.0
Aug 4, 2011 3:46:40 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_[1mreadFeatures_0m [1171] - GCC coordinates, sw: GCC: (-2379510.413560226, -
4665588.412398719, 3627966.420246739), ne: GCC: (-2379449.157240211, -4665580.077967442, 3628016.973585964)
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::_[1mcreatePointDataElements_0m [1278] - =====> processing OTF point feature label:
BUILDING
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug

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INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1546] - >>>> feature category: 46  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1551] - >>>> num of feature attributes: 44  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1565] - >>>> feature attribute:  
name:ANTENNA\_COUNT value as string: 0 data type: 1 category: 69  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1578] - >>>> feature attribute:  
name:ANTENNA\_COUNT, int value: 0, type: 1  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1565] - >>>> feature attribute:  
name:BUILDING\_CONSTRUCTION\_TYPE value as string: BRICK\_CLAD\_STEEL\_FRAME data type: 4 category: 173  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1613] - >>>> feature attribute:  
name:BUILDING\_CONSTRUCTION\_TYPE, enum value: BRICK\_CLAD\_STEEL\_FRAME, type: 4  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1565] - >>>> feature attribute:  
name:BUILDING\_FUNCTION value as string: HOUSE data type: 4 category: 174  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1613] - >>>> feature attribute:  
name:BUILDING\_FUNCTION, enum value: HOUSE, type: 4  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1565] - >>>> feature attribute: name:COLOURATION  
value as string: BROWN data type: 4 category: 207  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1613] - >>>> feature attribute:  
name:COLOURATION, enum value: BROWN, type: 4  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1565] - >>>> feature attribute:  
name:COMPLEX\_COMPONENT\_IDENTIFIER value as string: 0 data type: 1 category: 215  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1578] - >>>> feature attribute:  
name:COMPLEX\_COMPONENT\_IDENTIFIER, int value: 0, type: 1  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1565] - >>>> feature attribute:  
name:DEPTH\_BELOW\_SURFACE\_LEVEL value as string: 0.0 data type: 6 category: 252  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1635] - >>>> feature attribute:  
name:DEPTH\_BELOW\_SURFACE\_LEVEL, linear value: 0.0, type: 6  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1565] - >>>> feature attribute:  
name:FRONT\_AND\_AXIS\_REFERENCE value as string: POSITIVE\_X data type: 4 category: 338  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1613] - >>>> feature attribute:  
name:FRONT\_AND\_AXIS\_REFERENCE, enum value: POSITIVE\_X, type: 4  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1565] - >>>> feature attribute:  
name:GENERAL\_DAMAGE\_FRACTION value as string: 0.0 data type: 2 category: 346  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1590] - >>>> feature attribute:  
name:GENERAL\_DAMAGE\_FRACTION, double value: 0.0, type: 2  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1565] - >>>> feature attribute:  
name:HEIGHT\_ABOVE\_SURFACE\_LEVEL value as string: 5.0 data type: 6 category: 371  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1635] - >>>> feature attribute:  
name:HEIGHT\_ABOVE\_SURFACE\_LEVEL, linear value: 5.0, type: 6  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1565] - >>>> feature attribute: name:ILLUMINANCE  
value as string: 1.0 data type: 2 category: 415  
Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine  
INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgetFeatureAttributes\_][0m [1590] - >>>> feature attribute: name:ILLUMINANCE,  
double value: 1.0, type: 2

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:LENGTH value as string: 15.0 data type: 6 category: 473

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1635] - >>>>> feature attribute: name:LENGTH, linear value: 15.0, type: 6

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:NAME value as string: data type: 3 category: 730

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1601] - >>>>> feature attribute: name:NAME, string value: , type: 3

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:NUMERIC\_OBJECT\_IDENTIFIER value as string: 0 data type: 1 category: 745

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1578] - >>>>> feature attribute: name:NUMERIC\_OBJECT\_IDENTIFIER, int value: 0, type: 1

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:OBJECT\_VARIANT value as string: 0 data type: 1 category: 759

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1578] - >>>>> feature attribute: name:OBJECT\_VARIANT, int value: 0, type: 1

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:ORIENTATION\_ANGLE value as string: 0.0 data type: 7 category: 787

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1624] - >>>>> feature attribute: name:ORIENTATION\_ANGLE, angle value: 0.0, type: 7

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:OVERALL\_VERTICAL\_DIMENSION value as string: 0.0 data type: 6 category: 789

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1635] - >>>>> feature attribute: name:OVERALL\_VERTICAL\_DIMENSION, linear value: 0.0, type: 6

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:POINT\_OBJECT\_TYPE value as string: VERT\_STRUCTURE data type: 4 category: 827

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1613] - >>>>> feature attribute: name:POINT\_OBJECT\_TYPE, enum value: VERT\_STRUCTURE, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:PREPARED\_EXPLOSIVE\_DESTRUCTION\_COMPLETION\_FRACTION value as string: 0.0 data type: 2 category: 851

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1590] - >>>>> feature attribute: name:PREPARED\_EXPLOSIVE\_DESTRUCTION\_COMPLETION\_FRACTION, double value: 0.0, type: 2

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:PRIMARY\_ENTRANCE\_LOCATION value as string: FRONT\_CENTRE\_ON\_GRADE data type: 4 category: 863

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1613] - >>>>> feature attribute: name:PRIMARY\_ENTRANCE\_LOCATION, enum value: FRONT\_CENTRE\_ON\_GRADE, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:PRIMARY\_PRODUCT value as string: NO\_PRODUCT data type: 4 category: 866

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1613] - >>>>> feature attribute: name:PRIMARY\_PRODUCT, enum value: NO\_PRODUCT, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[I mgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:REGIONAL\_STYLE value as string: MODERN\_INDUSTRIAL\_CONSTRUCTION data type: 4 category: 919

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute:  
name:REGIONAL\_STYLE, enum value: MODERN\_INDUSTRIAL\_CONSTRUCTION, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:ROOF\_PREDOMINANT\_PATTERN value as string: MOTTLED data type: 4 category: 951

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute:  
name:ROOF\_PREDOMINANT\_PATTERN, enum value: MOTTLED, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:ROOF\_PREDOMINANT\_SURFACE\_MATERIAL value as string: CONGLOMERATE data type: 4 category: 952

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute:  
name:ROOF\_PREDOMINANT\_SURFACE\_MATERIAL, enum value: CONGLOMERATE, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:ROOF\_SHAPE  
value as string: FLAT data type: 4 category: 953

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute: name:ROOF\_SHAPE,  
enum value: FLAT, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:SNOW\_ACCUMULATION value as string: NONE\_PRESENT data type: 4 category: 1072

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute:  
name:SNOW\_ACCUMULATION, enum value: NONE\_PRESENT, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:SOURCE value  
as string: MISSING data type: 4 category: 1108

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute: name:SOURCE, enum  
value: MISSING, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:TERRAIN\_TRAFFICABILITY\_COARSE value as string: DEFAULT data type: 4 category: 1214

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute:  
name:TERRAIN\_TRAFFICABILITY\_COARSE, enum value: DEFAULT, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:TERRAIN\_TRAFFICABILITY\_FINE value as string: ID\_0 data type: 4 category: 1215

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute:  
name:TERRAIN\_TRAFFICABILITY\_FINE, enum value: ID\_0, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:TERRAIN\_TRAFFICABILITY\_MEDIUM value as string: ID\_20 data type: 4 category: 1216

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute:  
name:TERRAIN\_TRAFFICABILITY\_MEDIUM, enum value: ID\_20, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:USAGE value as  
string: NON\_MILITARY data type: 4 category: 1288

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute: name:USAGE, enum  
value: NON\_MILITARY, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:VEHICLE\_STORAGE\_AREA value as string: 0.0 data type: 2 category: 1303

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1590] - >>>>> feature attribute:  
name:VEHICLE\_STORAGE\_AREA, double value: 0.0, type: 2

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:VEHICLE\_STORAGE\_DOOR\_PRI\_HEIGHT value as string: 3.0 data type: 6 category: 1304

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1635] - >>>>> feature attribute:  
name:VEHICLE\_STORAGE\_DOOR\_PRI\_HEIGHT, linear value: 3.0, type: 6

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:VEHICLE\_STORAGE\_DOOR\_PRI\_WIDTH value as string: 6.0 data type: 6 category: 1305

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1635] - >>>>> feature attribute:  
name:VEHICLE\_STORAGE\_DOOR\_PRI\_WIDTH, linear value: 6.0, type: 6

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:WALL\_PREDOMINANT\_PATTERN value as string: BRICK data type: 4 category: 1335

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute:  
name:WALL\_PREDOMINANT\_PATTERN, enum value: BRICK, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:WALL\_PREDOMINANT\_SURFACE\_MATERIAL value as string: MASONRY data type: 4 category: 1336

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute:  
name:WALL\_PREDOMINANT\_SURFACE\_MATERIAL, enum value: MASONRY, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute: name:WIDTH value as  
string: 13.0 data type: 6 category: 1383

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1635] - >>>>> feature attribute: name:WIDTH, linear  
value: 13.0, type: 6

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:COMBUSTION\_STATE value as string: NOT\_BURNING data type: 4 category: 1468

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute:  
name:COMBUSTION\_STATE, enum value: NOT\_BURNING, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:EXTERIOR\_WALL\_THICKNESS value as string: 0.25 data type: 6 category: 1493

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1635] - >>>>> feature attribute:  
name:EXTERIOR\_WALL\_THICKNESS, linear value: 0.25, type: 6

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:LADDER\_PRESENT value as string: true data type: 5 category: 1521

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1668] - >>>>> feature attribute:  
name:LADDER\_PRESENT, int value: true, type: 5

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:LIGHTING\_CHARACTERIZATION value as string: DIMLY\_LIT data type: 4 category: 1530

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1613] - >>>>> feature attribute:  
name:LIGHTING\_CHARACTERIZATION, enum value: DIMLY\_LIT, type: 4

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:ROOF\_LOAD\_BEARING\_CAPACITY value as string: 2.5 data type: 2 category: 1610

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1590] - >>>>> feature attribute:  
name:ROOF\_LOAD\_BEARING\_CAPACITY, double value: 2.5, type: 2

Aug 4, 2011 3:46:41 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[ImgetFeatureAttributes\_0m [1565] - >>>>> feature attribute:  
name:SURFACE\_TEMPERATURE\_QB\_BUILDING\_COMPONENT\_TYPE value as string: 15.0 data type: 2 category: 2008









Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[1initialize\_[0m [173] - ==> ERC already initialized.

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log warning  
SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_[0mdpbtbrngen.services.tdbrepository.OTFApiImpl::\_[1mgetTDBName\_[0m [2956] - TEMP -  
Hardcoded OTF name: myNTC\_terrain\_database TODO: implement extent - tdb name mapping - or looking in ontology.

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[1initialize\_[0m [173] - ==> ERC already initialized.

Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log warning  
SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_[0mdpbtbrngen.services.tdbrepository.OTFApiImpl::\_[1mgetTDBName\_[0m [2956] - TEMP -  
Hardcoded OTF name: myNTC\_terrain\_database TODO: implement extent - tdb name mapping - or looking in ontology.

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[1mincorporateDataElementChanges\_[0m [869] - Incorporating DataElement changes  
into OTF

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log warning  
SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_[0mdpbtbrngen.services.tdbrepository.OTFApiImpl::\_[1mgetLabel\_[0m [973] - \*\*\*\* WARINING \*\*\*\*  
DataElement Label: BUILDING

Aug 4, 2011 3:51:39 PM net.onesaf.ext.dpbtbrngen.services.common.Log message  
INFO: dpbtbrngen.services.tdbrepository.OTFApiImpl::\_[1mincorporateDataElementChanges\_[0m [915] - Add features to recompile - using  
otfTerrainCompiler.featureUpdates() - nov 11  
==> GRANIELA: .  
TerrainCompilerApi\_updateFeatures  
=> DTFeature:  
DTFeature:  
Feature Name: BUILDING  
Feature Geometry: 1  
Feature Coordinates:  
Coord 0: 34.89140556, -117.02189170000004, 711.0  
Attribute Value Pairs:  
NUMERIC\_OBJECT\_IDENTIFIER, 0  
WALL\_PREDOMINANT\_SURFACE\_MATERIAL, MASONRY  
VEHICLE\_STORAGE\_DOOR\_PRI\_WIDTH, 6.0  
EMISSIVITY\_QB\_EM\_BAND\_AND\_BUILDING\_COMPONENT\_TYPE, 0.0  
REGIONAL\_STYLE, MODERN\_INDUSTRIAL\_CONSTRUCTION  
COMPLEX\_COMPONENT\_IDENTIFIER, 0  
TERRAIN\_TRAFFICABILITY\_FINE, ID\_0  
SNOW\_ACCUMULATION, NONE\_PRESENT  
HEIGHT\_ABOVE\_SURFACE\_LEVEL, 5.0  
BUILDING\_CONSTRUCTION\_TYPE, BRICK\_CLAD\_STEEL\_FRAME  
ROOF\_SHAPE, FLAT  
SOURCE, MISSING  
ORIENTATION\_ANGLE, 0.0  
LIGHTING\_CHARACTERIZATION, DIMLY\_LIT  
ROOF\_PREDOMINANT\_SURFACE\_MATERIAL, CONGLOMERATE  
OVERALL\_VERTICAL\_DIMENSION, 0.0  
UNIVERSALLY\_UNIQUE\_ID, 9c6d352c4ca211e08459002421a8c4c6  
FRONT\_AND\_AXIS\_REFERENCE, POSITIVE\_X  
ILLUMINANCE, 1.0  
POINT\_OBJECT\_TYPE, VERT\_STRUCTURE  
USAGE, NON\_MILITARY  
LENGTH, 15.0  
PREPARED\_EXPLOSIVE\_DESTRUCTION\_COMPLETION\_FRACTION, 0.0  
PRIMARY\_PRODUCT, NO\_PRODUCT  
ROOF\_LOAD\_BEARING\_CAPACITY, 2.5  
TERRAIN\_TRAFFICABILITY\_MEDIUM, ID\_20  
NAME,  
VEHICLE\_STORAGE\_AREA, 0.0  
TERRAIN\_TRAFFICABILITY\_COARSE, DEFAULT  
GENERAL\_DAMAGE\_FRACTION, 7.0  
COLOURATION, BROWN  
LADDER\_PRESENT, 1  
EXTERIOR\_WALL\_THICKNESS, 0.25  
COMBUSTION\_STATE, NOT\_BURNING  
ANTENNA\_COUNT, 0

PRIMARY\_ENTRANCE\_LOCATION, FRONT\_CENTRE\_ON\_GRADE  
DEPTH\_BELOW\_SURFACE\_LEVEL, 0.0  
WIDTH, 13.0  
ROOF\_PREDOMINANT\_PATTERN, MOTTLED  
WALL\_PREDOMINANT\_PATTERN, BRICK  
SURFACE\_TEMPERATURE\_QB\_BUILDING\_COMPONENT\_TYPE, 15.0  
VEHICLE\_STORAGE\_DOOR\_PRI\_HEIGHT, 3.0  
BUILDING\_FUNCTION, HOUSE  
OBJECT\_VARIANT, 0  
Feature UUID: 9c6d352c4ca211e08459002421a8c4c6

convert\_dt\_feature ... start conversion, num coordinates=1  
creating StaticFeature  
processing attributes  
num attribute pairs: 44  
attribute pair #0:

DTAttributeValuePair:  
Attribute Label: NUMERIC\_OBJECT\_IDENTIFIER  
Attribute Value: 0

modify attribute value  
set attribute value -- WARNING [ potential change to all features ] WARNING  
attribute pair #1:

DTAttributeValuePair:  
Attribute Label: WALL\_PREDOMINANT\_SURFACE\_MATERIAL  
Attribute Value: MASONRY

modify attribute value  
set attribute value -- WARNING [ potential change to all features ] WARNING  
attribute pair #2:

DTAttributeValuePair:  
Attribute Label: VEHICLE\_STORAGE\_DOOR\_PRI\_WIDTH  
Attribute Value: 6.0

modify attribute value  
set attribute value -- WARNING [ potential change to all features ] WARNING  
attribute pair #3:

DTAttributeValuePair:  
Attribute Label: EMISSIVITY\_QB\_EM\_BAND\_AND\_BUILDING\_COMPONENT\_TYPE  
Attribute Value: 0.0

modify attribute value  
set attribute value -- WARNING [ potential change to all features ] WARNING  
attribute pair #4:

DTAttributeValuePair:  
Attribute Label: REGIONAL\_STYLE  
Attribute Value: MODERN\_INDUSTRIAL\_CONSTRUCTION

modify attribute value  
set attribute value -- WARNING [ potential change to all features ] WARNING  
attribute pair #5:

DTAttributeValuePair:  
Attribute Label: COMPLEX\_COMPONENT\_IDENTIFIER  
Attribute Value: 0

modify attribute value  
set attribute value -- WARNING [ potential change to all features ] WARNING  
attribute pair #6:

DTAttributeValuePair:  
Attribute Label: TERRAIN\_TRAFFICABILITY\_FINE  
Attribute Value: ID\_0

modify attribute value

```

        set attribute value -- WARNING [ potential change to all features ] WARNING
        attribute pair #7:
DTAttributeValuePair:
  Attribute Label: SNOW_ACCUMULATION
  Attribute Value: NONE_PRESENT

        modify attribute value
        set attribute value -- WARNING [ potential change to all features ] WARNING
        attribute pair #8:
DTAttributeValuePair:
  Attribute Label: HEIGHT_ABOVE_SURFACE_LEVEL
  Attribute Value: 5.0

        modify attribute value
        set attribute value -- WARNING [ potential change to all features ] WARNING
        attribute pair #9:
DTAttributeValuePair:
  Attribute Label: BUILDING_CONSTRUCTION_TYPE
  Attribute Value: BRICK_CLAD_STEEL_FRAME

        modify attribute value
        set attribute value -- WARNING [ potential change to all features ] WARNING
        attribute pair #10:
DTAttributeValuePair:
  Attribute Label: ROOF_SHAPE
  Attribute Value: FLAT

        modify attribute value
        set attribute value -- WARNING [ potential change to all features ] WARNING
        attribute pair #11:
DTAttributeValuePair:
  Attribute Label: SOURCE
  Attribute Value: MISSING

        modify attribute value
        set attribute value -- WARNING [ potential change to all features ] WARNING
        attribute pair #12:
DTAttributeValuePair:
  Attribute Label: ORIENTATION_ANGLE
  Attribute Value: 0.0

        modify attribute value
        set attribute value -- WARNING [ potential change to all features ] WARNING
        attribute pair #13:
DTAttributeValuePair:
  Attribute Label: LIGHTING_CHARACTERIZATION
  Attribute Value: DIMLY_LIT

        modify attribute value
        set attribute value -- WARNING [ potential change to all features ] WARNING
        attribute pair #14:
DTAttributeValuePair:
  Attribute Label: ROOF_PREDOMINANT_SURFACE_MATERIAL
  Attribute Value: CONGLOMERATE

        modify attribute value
        set attribute value -- WARNING [ potential change to all features ] WARNING
        attribute pair #15:
DTAttributeValuePair:
  Attribute Label: OVERALL_VERTICAL_DIMENSION
  Attribute Value: 0.0

        modify attribute value

```

```

                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #16:
DTAttributeValuePair:
  Attribute Label: UNIVERSALLY_UNIQUE_ID
  Attribute Value: 9c6d352c4ca211e08459002421a8c4c6

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #17:
DTAttributeValuePair:
  Attribute Label: FRONT_AND_AXIS_REFERENCE
  Attribute Value: POSITIVE_X

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #18:
DTAttributeValuePair:
  Attribute Label: ILLUMINANCE
  Attribute Value: 1.0

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #19:
DTAttributeValuePair:
  Attribute Label: POINT_OBJECT_TYPE
  Attribute Value: VERT_STRUCTURE

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #20:
DTAttributeValuePair:
  Attribute Label: USAGE
  Attribute Value: NON_MILITARY

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #21:
DTAttributeValuePair:
  Attribute Label: LENGTH
  Attribute Value: 15.0

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #22:
DTAttributeValuePair:
  Attribute Label: PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION
  Attribute Value: 0.0

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #23:
DTAttributeValuePair:
  Attribute Label: PRIMARY_PRODUCT
  Attribute Value: NO_PRODUCT

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #24:
DTAttributeValuePair:
  Attribute Label: ROOF_LOAD_BEARING_CAPACITY
  Attribute Value: 2.5

                modify attribute value

```

```

                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #25:
DTAttributeValuePair:
  Attribute Label: TERRAIN_TRAFFICABILITY_MEDIUM
  Attribute Value: ID_20

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #26:
DTAttributeValuePair:
  Attribute Label: NAME
  Attribute Value:

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #27:
DTAttributeValuePair:
  Attribute Label: VEHICLE_STORAGE_AREA
  Attribute Value: 0.0

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #28:
DTAttributeValuePair:
  Attribute Label: TERRAIN_TRAFFICABILITY_COARSE
  Attribute Value: DEFAULT

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #29:
DTAttributeValuePair:
  Attribute Label: GENERAL_DAMAGE_FRACTION
  Attribute Value: 7.0

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #30:
DTAttributeValuePair:
  Attribute Label: COLOURATION
  Attribute Value: BROWN

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #31:
DTAttributeValuePair:
  Attribute Label: LADDER_PRESENT
  Attribute Value: 1

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #32:
DTAttributeValuePair:
  Attribute Label: EXTERIOR_WALL_THICKNESS
  Attribute Value: 0.25

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #33:
DTAttributeValuePair:
  Attribute Label: COMBUSTION_STATE
  Attribute Value: NOT_BURNING

                modify attribute value

```

```

                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #34:
DTAttributeValuePair:
  Attribute Label: ANTENNA_COUNT
  Attribute Value: 0

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #35:
DTAttributeValuePair:
  Attribute Label: PRIMARY_ENTRANCE_LOCATION
  Attribute Value: FRONT_CENTRE_ON_GRADE

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #36:
DTAttributeValuePair:
  Attribute Label: DEPTH_BELOW_SURFACE_LEVEL
  Attribute Value: 0.0

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #37:
DTAttributeValuePair:
  Attribute Label: WIDTH
  Attribute Value: 13.0

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #38:
DTAttributeValuePair:
  Attribute Label: ROOF_PREDOMINANT_PATTERN
  Attribute Value: MOTTLED

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #39:
DTAttributeValuePair:
  Attribute Label: WALL_PREDOMINANT_PATTERN
  Attribute Value: BRICK

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #40:
DTAttributeValuePair:
  Attribute Label: SURFACE_TEMPERATURE_QB_BUILDING_COMPONENT_TYPE
  Attribute Value: 15.0

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #41:
DTAttributeValuePair:
  Attribute Label: VEHICLE_STORAGE_DOOR_PRI_HEIGHT
  Attribute Value: 3.0

                modify attribute value
                set attribute value -- WARNING [ potential change to all features ] WARNING
                attribute pair #42:
DTAttributeValuePair:
  Attribute Label: BUILDING_FUNCTION
  Attribute Value: HOUSE

                modify attribute value

```

set attribute value -- WARNING [ potential change to all features ] WARNING  
attribute pair #43:

DTAttributeValuePair:

Attribute Label: OBJECT\_VARIANT  
Attribute Value: 0

modify attribute value  
set attribute value -- WARNING [ potential change to all features ] WARNING  
calculating slice ...  
DONE ...

print: Feature Id = 9c6d352c-4ca2-11e0-8459-002421a8c4c6 FeatureCategory: 46 FeatureName:

==> StaticFeature: Feature Id = 9c6d352c-4ca2-11e0-8459-002421a8c4c6

Feature Category Label = BUILDING

Feature Category = 46

Feature Geometry = Point

Feature Precedence = 1

Slice: 34.891296865596565624 34.891514254403439566 -117.02200039440347723 -117.02178300559660329

Spatial Grid = 0

Number Of Coordinates = 1

Coordinate 0: 34.891405560000002595 -117.02189170000004026 711

Attributes:

ANTENNA\_COUNT = 0

BUILDING\_CONSTRUCTION\_TYPE = [173] BUILDING\_CONSTRUCTION\_TYPE; [3] BRICK\_CLAD\_STEEL\_FRAME

BUILDING\_FUNCTION = [174] BUILDING\_FUNCTION; [68] HOUSE

COLOURATION = [207] COLOURATION; [27] BROWN

COMPLEX\_COMPONENT\_IDENTIFIER = 0

DEPTH\_BELOW\_SURFACE\_LEVEL = 0

FRONT\_AND\_AXIS\_REFERENCE = [338] FRONT\_AND\_AXIS\_REFERENCE; [5] POSITIVE\_X

GENERAL\_DAMAGE\_FRACTION = 7

HEIGHT\_ABOVE\_SURFACE\_LEVEL = 5

ILLUMINANCE = 1

LENGTH = 15

NAME = "

NUMERIC\_OBJECT\_IDENTIFIER = 0

OBJECT\_VARIANT = 0

ORIENTATION\_ANGLE = 0

OVERALL\_VERTICAL\_DIMENSION = 0

POINT\_OBJECT\_TYPE = [827] POINT\_OBJECT\_TYPE; [7] VERT\_STRUCTURE

PREPARED\_EXPLOSIVE\_DESTRUCTION\_COMPLETION\_FRACTION = 0

PRIMARY\_ENTRANCE\_LOCATION = [863] PRIMARY\_ENTRANCE\_LOCATION; [12] FRONT\_CENTRE\_ON\_GRADE

PRIMARY\_PRODUCT = [866] PRIMARY\_PRODUCT; [72] NO\_PRODUCT

REGIONAL\_STYLE = [919] REGIONAL\_STYLE; [10] MODERN\_INDUSTRIAL\_CONSTRUCTION

ROOF\_PREDOMINANT\_PATTERN = [951] ROOF\_PREDOMINANT\_PATTERN; [6] MOTTLED

ROOF\_PREDOMINANT\_SURFACE\_MATERIAL = [952] ROOF\_PREDOMINANT\_SURFACE\_MATERIAL; [8] CONGLOMERATE

ROOF\_SHAPE = [953] ROOF\_SHAPE; [4] FLAT

SNOW\_ACCUMULATION = [1072] SNOW\_ACCUMULATION; [1] NONE\_PRESENT

SOURCE = [1108] SOURCE; [3002] MISSING

TERRAIN\_TRAFFICABILITY\_COARSE = [1214] TERRAIN\_TRAFFICABILITY\_COARSE; [5] DEFAULT

TERRAIN\_TRAFFICABILITY\_FINE = [1215] TERRAIN\_TRAFFICABILITY\_FINE; [1] ID\_0

TERRAIN\_TRAFFICABILITY\_MEDIUM = [1216] TERRAIN\_TRAFFICABILITY\_MEDIUM; [21] ID\_20

USAGE = [1288] USAGE; [92] NON\_MILITARY

VEHICLE\_STORAGE\_AREA = 0

VEHICLE\_STORAGE\_DOOR\_PRI\_HEIGHT = 3

VEHICLE\_STORAGE\_DOOR\_PRI\_WIDTH = 6

WALL\_PREDOMINANT\_PATTERN = [1335] WALL\_PREDOMINANT\_PATTERN; [1] BRICK

WALL\_PREDOMINANT\_SURFACE\_MATERIAL = [1336] WALL\_PREDOMINANT\_SURFACE\_MATERIAL; [9] MASONRY

WIDTH = 13

COMBUSTION\_STATE = [1468] COMBUSTION\_STATE; [1] NOT\_BURNING

EXTERIOR\_WALL\_THICKNESS = 0.25

LADDER\_PRESENT = 1

LIGHTING\_CHARACTERIZATION = [1530] LIGHTING\_CHARACTERIZATION; [2] DIMLY\_LIT

ROOF\_LOAD\_BEARING\_CAPACITY = 2.5



SURFACE\_TEMPERATURE\_QB\_BUILDING\_COMPONENT\_TYPE = 15  
EMISSIVITY\_QB\_EM\_BAND\_AND\_BUILDING\_COMPONENT\_TYPE = 0  
UNIVERSALLY\_UNIQUE\_ID = 00000000-0000-0000-0000-000000000000

num attribute pairs: 44  
attribute pair #0:

DTAttributeValuePair:  
Attribute Label: NUMERIC\_OBJECT\_IDENTIFIER  
Attribute Value: 0

stored attribute: [name: NUMERIC\_OBJECT\_IDENTIFIER, value: 0]  
attribute pair #1:

DTAttributeValuePair:  
Attribute Label: WALL\_PREDOMINANT\_SURFACE\_MATERIAL  
Attribute Value: MASONRY

stored attribute: [name: WALL\_PREDOMINANT\_SURFACE\_MATERIAL, value: MASONRY]  
attribute pair #2:

DTAttributeValuePair:  
Attribute Label: VEHICLE\_STORAGE\_DOOR\_PRI\_WIDTH  
Attribute Value: 6.0

stored attribute: [name: VEHICLE\_STORAGE\_DOOR\_PRI\_WIDTH, value: 6.0]  
attribute pair #3:

DTAttributeValuePair:  
Attribute Label: EMISSIVITY\_QB\_EM\_BAND\_AND\_BUILDING\_COMPONENT\_TYPE  
Attribute Value: 0.0

stored attribute: [name: EMISSIVITY\_QB\_EM\_BAND\_AND\_BUILDING\_COMPONENT\_TYPE, value: 0.0]  
attribute pair #4:

DTAttributeValuePair:  
Attribute Label: REGIONAL\_STYLE  
Attribute Value: MODERN\_INDUSTRIAL\_CONSTRUCTION

stored attribute: [name: REGIONAL\_STYLE, value: MODERN\_INDUSTRIAL\_CONSTRUCTION]  
attribute pair #5:

DTAttributeValuePair:  
Attribute Label: COMPLEX\_COMPONENT\_IDENTIFIER  
Attribute Value: 0

stored attribute: [name: COMPLEX\_COMPONENT\_IDENTIFIER, value: 0]  
attribute pair #6:

DTAttributeValuePair:  
Attribute Label: TERRAIN\_TRAFFICABILITY\_FINE  
Attribute Value: ID\_0

stored attribute: [name: TERRAIN\_TRAFFICABILITY\_FINE, value: ID\_0]  
attribute pair #7:

DTAttributeValuePair:  
Attribute Label: SNOW\_ACCUMULATION  
Attribute Value: NONE\_PRESENT

stored attribute: [name: SNOW\_ACCUMULATION, value: NONE\_PRESENT]  
attribute pair #8:

DTAttributeValuePair:  
Attribute Label: HEIGHT\_ABOVE\_SURFACE\_LEVEL  
Attribute Value: 5.0

stored attribute: [name: HEIGHT\_ABOVE\_SURFACE\_LEVEL, value: 5.0]  
attribute pair #9:

DTAttributeValuePair:  
Attribute Label: BUILDING\_CONSTRUCTION\_TYPE  
Attribute Value: BRICK\_CLAD\_STEEL\_FRAME

stored attribute: [name: BUILDING\_CONSTRUCTION\_TYPE, value: BRICK\_CLAD\_STEEL\_FRAME]  
attribute pair #10:

DTAttributeValuePair:  
Attribute Label: ROOF\_SHAPE  
Attribute Value: FLAT

stored attribute: [name: ROOF\_SHAPE, value: FLAT]  
attribute pair #11:

DTAttributeValuePair:  
Attribute Label: SOURCE  
Attribute Value: MISSING

stored attribute: [name: SOURCE, value: MISSING]  
attribute pair #12:

DTAttributeValuePair:  
Attribute Label: ORIENTATION\_ANGLE  
Attribute Value: 0.0

stored attribute: [name: ORIENTATION\_ANGLE, value: 0.0]  
attribute pair #13:

DTAttributeValuePair:  
Attribute Label: LIGHTING\_CHARACTERIZATION  
Attribute Value: DIMLY\_LIT

stored attribute: [name: LIGHTING\_CHARACTERIZATION, value: DIMLY\_LIT]  
attribute pair #14:

DTAttributeValuePair:  
Attribute Label: ROOF\_PREDOMINANT\_SURFACE\_MATERIAL  
Attribute Value: CONGLOMERATE

stored attribute: [name: ROOF\_PREDOMINANT\_SURFACE\_MATERIAL, value: CONGLOMERATE]  
attribute pair #15:

DTAttributeValuePair:  
Attribute Label: OVERALL\_VERTICAL\_DIMENSION  
Attribute Value: 0.0

stored attribute: [name: OVERALL\_VERTICAL\_DIMENSION, value: 0.0]  
attribute pair #16:

DTAttributeValuePair:  
Attribute Label: UNIVERSALLY\_UNIQUE\_ID  
Attribute Value: 9c6d352c4ca211e08459002421a8c4c6

stored attribute: [name: UNIVERSALLY\_UNIQUE\_ID, value: 9c6d352c4ca211e08459002421a8c4c6]  
attribute pair #17:

DTAttributeValuePair:  
Attribute Label: FRONT\_AND\_AXIS\_REFERENCE  
Attribute Value: POSITIVE\_X

stored attribute: [name: FRONT\_AND\_AXIS\_REFERENCE, value: POSITIVE\_X]  
attribute pair #18:

DTAttributeValuePair:  
Attribute Label: ILLUMINANCE  
Attribute Value: 1.0

stored attribute: [name: ILLUMINANCE, value: 1.0]  
attribute pair #19:

DTAttributeValuePair:  
Attribute Label: POINT\_OBJECT\_TYPE  
Attribute Value: VERT\_STRUCTURE

stored attribute: [name: POINT\_OBJECT\_TYPE, value: VERT\_STRUCTURE]  
attribute pair #20:

DTAttributeValuePair:  
Attribute Label: USAGE  
Attribute Value: NON\_MILITARY  
  
stored attribute: [name: USAGE, value: NON\_MILITARY]  
attribute pair #21:

DTAttributeValuePair:  
Attribute Label: LENGTH  
Attribute Value: 15.0  
  
stored attribute: [name: LENGTH, value: 15.0]  
attribute pair #22:

DTAttributeValuePair:  
Attribute Label: PREPARED\_EXPLOSIVE\_DESTRUCTION\_COMPLETION\_FRACTION  
Attribute Value: 0.0  
  
stored attribute: [name: PREPARED\_EXPLOSIVE\_DESTRUCTION\_COMPLETION\_FRACTION, value: 0.0]  
attribute pair #23:

DTAttributeValuePair:  
Attribute Label: PRIMARY\_PRODUCT  
Attribute Value: NO\_PRODUCT  
  
stored attribute: [name: PRIMARY\_PRODUCT, value: NO\_PRODUCT]  
attribute pair #24:

DTAttributeValuePair:  
Attribute Label: ROOF\_LOAD\_BEARING\_CAPACITY  
Attribute Value: 2.5  
  
stored attribute: [name: ROOF\_LOAD\_BEARING\_CAPACITY, value: 2.5]  
attribute pair #25:

DTAttributeValuePair:  
Attribute Label: TERRAIN\_TRAFFICABILITY\_MEDIUM  
Attribute Value: ID\_20  
  
stored attribute: [name: TERRAIN\_TRAFFICABILITY\_MEDIUM, value: ID\_20]  
attribute pair #26:

DTAttributeValuePair:  
Attribute Label: NAME  
Attribute Value:  
  
stored attribute: [name: NAME, value: ]  
attribute pair #27:

DTAttributeValuePair:  
Attribute Label: VEHICLE\_STORAGE\_AREA  
Attribute Value: 0.0  
  
stored attribute: [name: VEHICLE\_STORAGE\_AREA, value: 0.0]  
attribute pair #28:

DTAttributeValuePair:  
Attribute Label: TERRAIN\_TRAFFICABILITY\_COARSE  
Attribute Value: DEFAULT  
  
stored attribute: [name: TERRAIN\_TRAFFICABILITY\_COARSE, value: DEFAULT]  
attribute pair #29:

DTAttributeValuePair:  
Attribute Label: GENERAL\_DAMAGE\_FRACTION  
Attribute Value: 7.0  
  
stored attribute: [name: GENERAL\_DAMAGE\_FRACTION, value: 7.0]  
attribute pair #30:

DTAttributeValuePair:  
Attribute Label: COLOURATION  
Attribute Value: BROWN

stored attribute: [name: COLOURATION, value: BROWN]  
attribute pair #31:

DTAttributeValuePair:  
Attribute Label: LADDER\_PRESENT  
Attribute Value: 1

stored attribute: [name: LADDER\_PRESENT, value: 1]  
attribute pair #32:

DTAttributeValuePair:  
Attribute Label: EXTERIOR\_WALL\_THICKNESS  
Attribute Value: 0.25

stored attribute: [name: EXTERIOR\_WALL\_THICKNESS, value: 0.25]  
attribute pair #33:

DTAttributeValuePair:  
Attribute Label: COMBUSTION\_STATE  
Attribute Value: NOT\_BURNING

stored attribute: [name: COMBUSTION\_STATE, value: NOT\_BURNING]  
attribute pair #34:

DTAttributeValuePair:  
Attribute Label: ANTENNA\_COUNT  
Attribute Value: 0

stored attribute: [name: ANTENNA\_COUNT, value: 0]  
attribute pair #35:

DTAttributeValuePair:  
Attribute Label: PRIMARY\_ENTRANCE\_LOCATION  
Attribute Value: FRONT\_CENTRE\_ON\_GRADE

stored attribute: [name: PRIMARY\_ENTRANCE\_LOCATION, value: FRONT\_CENTRE\_ON\_GRADE]  
attribute pair #36:

DTAttributeValuePair:  
Attribute Label: DEPTH\_BELOW\_SURFACE\_LEVEL  
Attribute Value: 0.0

stored attribute: [name: DEPTH\_BELOW\_SURFACE\_LEVEL, value: 0.0]  
attribute pair #37:

DTAttributeValuePair:  
Attribute Label: WIDTH  
Attribute Value: 13.0

stored attribute: [name: WIDTH, value: 13.0]  
attribute pair #38:

DTAttributeValuePair:  
Attribute Label: ROOF\_PREDOMINANT\_PATTERN  
Attribute Value: MOTTLED

stored attribute: [name: ROOF\_PREDOMINANT\_PATTERN, value: MOTTLED]  
attribute pair #39:

DTAttributeValuePair:  
Attribute Label: WALL\_PREDOMINANT\_PATTERN  
Attribute Value: BRICK

stored attribute: [name: WALL\_PREDOMINANT\_PATTERN, value: BRICK]  
attribute pair #40:

DTAttributeValuePair:  
Attribute Label: SURFACE\_TEMPERATURE\_QB\_BUILDING\_COMPONENT\_TYPE  
Attribute Value: 15.0

stored attribute: [name: SURFACE\_TEMPERATURE\_QB\_BUILDING\_COMPONENT\_TYPE, value: 15.0]  
attribute pair #41:

DTAttributeValuePair:

Attribute Label: VEHICLE\_STORAGE\_DOOR\_PRI\_HEIGHT  
Attribute Value: 3.0

stored attribute: [name: VEHICLE\_STORAGE\_DOOR\_PRI\_HEIGHT, value: 3.0]  
attribute pair #42:

DTAttributeValuePair:

Attribute Label: BUILDING\_FUNCTION  
Attribute Value: HOUSE

stored attribute: [name: BUILDING\_FUNCTION, value: HOUSE]  
attribute pair #43:

DTAttributeValuePair:

Attribute Label: OBJECT\_VARIANT  
Attribute Value: 0

stored attribute: [name: OBJECT\_VARIANT, value: 0]

Aug 4, 2011 3:51:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning

SEVERE: \_[35m\*\*\*[WARNING]\*\*\*\_][0mdpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mincorporateDataElementChanges\_[0m [922] -  
OTF updated, please issue command to commit changes

Aug 4, 2011 3:51:40 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.tdbrepository.OTFApiImpl::\_[1mgenerateClientUpdate\_[0m [646] -

OTF generateClientUpdate

LocalHost: lvcServer.localdomain

\*\*\* xmlString \*\*\* SERIALIZER \*\*\*

<?xml version="1.0" encoding="UTF-8"?>

<ServerTargetFormatUpdate>

<ChangeDateTime>1312487501179</ChangeDateTime>

<ClientMachineName>lvcServer.localdomain</ClientMachineName>

<ClientPort>7777</ClientPort>

<ClientTargetFormat>OTF</ClientTargetFormat>

<Description>Server Updates to OTF target format</Description>

<UpdateList>

<Update>

<FeatureLabel>BUILDING</FeatureLabel>

<FeatureId>9c6d352c4ca211e08459002421a8c4c6</FeatureId>

<FeatureType>Point</FeatureType>

<GeometryList>

<Point>

<X>-117.02189170000004</X>

<Y>34.89140556</Y>

<Z>711.0</Z>

</Point>

</GeometryList>

<AttributeList>

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<Value>0.0</Value>

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</Attribute>
<Attribute>
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<Attribute>
  <Name>ANTENNA_COUNT</Name>
  <Value>0</Value>
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```

```

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  </Attribute>
  <Attribute>
    <Name>DEPTH_BELOW_SURFACE_LEVEL</Name>
    <Value>0.0</Value>
  </Attribute>
  <Attribute>
    <Name>WIDTH</Name>
    <Value>13.0</Value>
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  <Attribute>
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    <Name>WALL_PREDOMINANT_PATTERN</Name>
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  <Attribute>
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  </Attribute>
  <Attribute>
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    <Value>3.0</Value>
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    <Value>HOUSE</Value>
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    <Value>0</Value>
  </Attribute>
</AttributeList>
</Update>
</UpdateList>
</ServerTargetFormatUpdate>

```

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
INFO: dpbtdbrgen.services.tdbrepository.OTFApiImpl::[1mregenerate\_[0m [947] - recompile of  
----- info, logger.cpp:356: Logger severity changed from debug to info  
----- info, lnen\_build\_status.cpp:230: GRANIELA: \*\*\*ERROR \*\*\* Could not open status file: terrain\_database/EJ/EJ0204/status  
done with update

```

====> GRANIELA: call to TerrainCompilerApi_recompile, 030611 ...
====> GRANIELA: loading config_options from file: land_compiler.cfg
GRANIELA: TEMP HARDCODED GEOTILE VALUES
***> 1. GRANIELA: loading source data for geotile #0 name: EJ0204

```

GRANIELA: tins\_dir: NTC\_source\_terrain\_database, features\_dir: myNTC\_source\_terrain\_database, geotile\_id: EJ0204  
298331 triangles in the binary files.

```

OTF API GeoTile: EJ0204      Setting Triangles: Completed: 0 of 298331
OTF API GeoTile: EJ0204      Setting Triangles: Completed: 40449 of 298331
OTF API GeoTile: EJ0204      Setting Triangles: Completed: 92283 of 298331
OTF API GeoTile: EJ0204      Setting Triangles: Completed: 148309 of 298331
OTF API GeoTile: EJ0204      Setting Triangles: Completed: 192875 of 298331
OTF API GeoTile: EJ0204      Setting Triangles: Completed: 222023 of 298331
OTF API GeoTile: EJ0204      Setting Triangles: Completed: 249505 of 298331
OTF API GeoTile: EJ0204      Setting Triangles: Completed: 268277 of 298331
OTF API GeoTile: EJ0204      Setting Triangles: Completed: 283880 of 298331
OTF API GeoTile: EJ0204      Setting Triangles: Completed: 297241 of 298331
OTF API GeoTile: EJ0204      Setting Triangles: Completed: 313632 of 298331

```



```

298331 triangles read so far!
----- info, lnen_build_status.cpp:230: GRANIELA: ***ERROR *** Could not open status file: terrain_database/EJ/EJ0204/status
----- info, feature_template_cache.cpp:182: Tried to initialize the feature template cache when it was already initialized.
====> 1.A GRANIELA: read_api.read_triangles - DONE READING ORIGINAL TRIANGLES INTO CACHE
Proceed any way like it never happen...
----- info, feature_template_cache.cpp:217: initialize_geo_tile - memory_map_ptr = 0, Feature template zeroed, my_initialized= true, tff file:
terrain_database/EJ/EJ0204/feature_templates.tff
----- info, read_api.cpp:430: Reading features for GeoTile EJ0204.
add_bytes:4 add_bytes:8====> GRANIELA: 1.A1 initialize_geotile - Done initializing geotile.
num_features = 8418
add_bytes:200
0 features read so far. add_bytes:392 add_bytes:584 add_bytes:808 add_bytes:816 add_bytes:1016 add_bytes:1024 add_bytes:1224
add_bytes:1232 add_bytes:1432 add_bytes:1440 add_bytes:1656 add_bytes:1664 add_bytes:1880 add_bytes:1888 add_bytes:2104
add_bytes:2128 add_bytes:2344 add_bytes:2352 add_bytes:2568 add_bytes:2576 add_bytes:2792 add_bytes:2800 add_bytes:3016 <
< ... GRANIELA, removed redundant logs lines>
add_bytes:3119880 add_bytes:3119888 add_bytes:3120304 add_bytes:3120312 add_bytes:3120728 add_bytes:3120736 add_bytes:3121152
add_bytes:3121160 add_bytes:3121576 add_bytes:3121584 add_bytes:3122000 add_bytes:3122008 add_bytes:3122424 add_bytes:3122432
add_bytes:3122848 add_bytes:3122856 add_bytes:3123272 add_bytes:3123280 add_bytes:3123696 add_bytes:3123704 add_bytes:3124120
add_bytes:3124128 add_bytes:3124544 add_bytes:3124552 add_bytes:3124968 add_bytes:3124976 add_bytes:3125392 add_bytes:3125400
add_bytes:3125704 add_bytes:3126008 add_bytes:3126312 add_bytes:3126624 add_bytes:3126632 add_bytes:3127048 add_bytes:3127056
add_bytes:3127368 add_bytes:3127376 add_bytes:3127688 add_bytes:3127696 add_bytes:3128112 add_bytes:3128120OTF API GeoTile:
EJ0204 Setting Features: Completed: 0 of 8418
OTF API GeoTile: EJ0204 Setting Features: Completed: 1518 of 8418
OTF API GeoTile: EJ0204 Setting Features: Completed: 2497 of 8418
OTF API GeoTile: EJ0204 Setting Features: Completed: 2968 of 8418
OTF API GeoTile: EJ0204 Setting Features: Completed: 3345 of 8418
OTF API GeoTile: EJ0204 Setting Features: Completed: 4439 of 8418
OTF API GeoTile: EJ0204 Setting Features: Completed: 5858 of 8418
OTF API GeoTile: EJ0204 Setting Features: Completed: 6697 of 8418
OTF API GeoTile: EJ0204 Setting Features: Completed: 7372 of 8418
OTF API GeoTile: EJ0204 Setting Features: Completed: 7832 of 8418
OTF API GeoTile: EJ0204 Setting Features: Completed: 8418 of 8418
----- info, read_api.cpp:450: Done reading features for GeoTile EJ0204.
====> GRANIELA: 1.B read_api.read_features - DONE READING FEATURES INTO CACHE.
====> GRANIELA: 1.B1 set_features - FEATURES UUID MAP SET.
====> GRANIELA: 1.B2 DONE

load_feature_updates:: Updated terrain features size: 1 after loading source data
load_feature_updates::creating static feature
add_bytes:3128472 load_feature_updates::processing attributes
set attribute value -- WARNING [ potential change to all features ] WARNING
modify attribute values: [name: NUMERIC_OBJECT_IDENTIFIER, value: 0]
set attribute value -- WARNING [ potential change to all features ] WARNING
modify attribute values: [name: WALL_PREDOMINANT_SURFACE_MATERIAL, value: MASONRY]
set attribute value -- WARNING [ potential change to all features ] WARNING
modify attribute values: [name: VEHICLE_STORAGE_DOOR_PRI_WIDTH, value: 6.0]
set attribute value -- WARNING [ potential change to all features ] WARNING
modify attribute values: [name: EMISSIVITY_QB_EM_BAND_AND_BUILDING_COMPONENT_TYPE, value: 0.0]
set attribute value -- WARNING [ potential change to all features ] WARNING
modify attribute values: [name: REGIONAL_STYLE, value: MODERN_INDUSTRIAL_CONSTRUCTION]
set attribute value -- WARNING [ potential change to all features ] WARNING
modify attribute values: [name: COMPLEX_COMPONENT_IDENTIFIER, value: 0]
set attribute value -- WARNING [ potential change to all features ] WARNING
modify attribute values: [name: TERRAIN_TRAFFICABILITY_FINE, value: ID_0]
set attribute value -- WARNING [ potential change to all features ] WARNING
modify attribute values: [name: SNOW_ACCUMULATION, value: NONE_PRESENT]
set attribute value -- WARNING [ potential change to all features ] WARNING
modify attribute values: [name: HEIGHT_ABOVE_SURFACE_LEVEL, value: 5.0]
set attribute value -- WARNING [ potential change to all features ] WARNING
modify attribute values: [name: BUILDING_CONSTRUCTION_TYPE, value: BRICK_CLAD_STEEL_FRAME]
set attribute value -- WARNING [ potential change to all features ] WARNING
modify attribute values: [name: ROOF_SHAPE, value: FLAT]
set attribute value -- WARNING [ potential change to all features ] WARNING

```

modify attribute values: [name: SOURCE, value: MISSING]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: ORIENTATION\_ANGLE, value: 0.0]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: LIGHTING\_CHARACTERIZATION, value: DIMLY\_LIT]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: ROOF\_PREDOMINANT\_SURFACE\_MATERIAL, value: CONGLOMERATE]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: OVERALL\_VERTICAL\_DIMENSION, value: 0.0]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: UNIVERSALLY\_UNIQUE\_ID, value: 9c6d352c4ca211e08459002421a8c4c6]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: FRONT\_AND\_AXIS\_REFERENCE, value: POSITIVE\_X]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: ILLUMINANCE, value: 1.0]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: POINT\_OBJECT\_TYPE, value: VERT\_STRUCTURE]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: USAGE, value: NON\_MILITARY]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: LENGTH, value: 15.0]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: PREPARED\_EXPLOSIVE\_DESTRUCTION\_COMPLETION\_FRACTION, value: 0.0]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: PRIMARY\_PRODUCT, value: NO\_PRODUCT]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: ROOF\_LOAD\_BEARING\_CAPACITY, value: 2.5]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: TERRAIN\_TRAFFICABILITY\_MEDIUM, value: ID\_20]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: NAME, value: ]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: VEHICLE\_STORAGE\_AREA, value: 0.0]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: TERRAIN\_TRAFFICABILITY\_COARSE, value: DEFAULT]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: GENERAL\_DAMAGE\_FRACTION, value: 7.0]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: COLOURATION, value: BROWN]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: LADDER\_PRESENT, value: 1]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: EXTERIOR\_WALL\_THICKNESS, value: 0.25]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: COMBUSTION\_STATE, value: NOT\_BURNING]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: ANTENNA\_COUNT, value: 0]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: PRIMARY\_ENTRANCE\_LOCATION, value: FRONT\_CENTRE\_ON\_GRADE]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: DEPTH\_BELOW\_SURFACE\_LEVEL, value: 0.0]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: WIDTH, value: 13.0]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: ROOF\_PREDOMINANT\_PATTERN, value: MOTTLED]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: WALL\_PREDOMINANT\_PATTERN, value: BRICK]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: SURFACE\_TEMPERATURE\_QB\_BUILDING\_COMPONENT\_TYPE, value: 15.0]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: VEHICLE\_STORAGE\_DOOR\_PRI\_HEIGHT, value: 3.0]  
     set attribute value -- WARNING [ potential change to all features ] WARNING  
 modify attribute values: [name: BUILDING\_FUNCTION, value: HOUSE]

```

set attribute value -- WARNING [ potential change to all features ] WARNING
modify attribute values: [name: OBJECT_VARIANT, value: 0]
print: Feature Id = 9c6d352c-4ca2-11e0-8459-002421a8c4c6 FeatureCategory: 46 FeatureName:
load_feature_updates::static feature num# 0
Feature Id = 9c6d352c-4ca2-11e0-8459-002421a8c4c6
Feature Category Label = BUILDING
Feature Category = 46
Feature Geometry = Point
Feature Precedence = 1
Slice: 34.891296865596565624 34.891514254403439566 -117.02200039440347723 -117.02178300559660329
Spatial Grid = 0
Number Of Coordinates = 1
Coordinate 0: 34.891405560000002595 -117.02189170000004026 711
Attributes:
ANTENNA_COUNT = 0
BUILDING_CONSTRUCTION_TYPE = [173] BUILDING_CONSTRUCTION_TYPE; [3] BRICK_CLAD_STEEL_FRAME
BUILDING_FUNCTION = [174] BUILDING_FUNCTION; [68] HOUSE
COLOURATION = [207] COLOURATION; [27] BROWN
COMPLEX_COMPONENT_IDENTIFIER = 0
DEPTH_BELOW_SURFACE_LEVEL = 0
FRONT_AND_AXIS_REFERENCE = [338] FRONT_AND_AXIS_REFERENCE; [5] POSITIVE_X
GENERAL_DAMAGE_FRACTION = 7
HEIGHT_ABOVE_SURFACE_LEVEL = 5
ILLUMINANCE = 1
LENGTH = 15
NAME = "
NUMERIC_OBJECT_IDENTIFIER = 0
OBJECT_VARIANT = 0
ORIENTATION_ANGLE = 0
OVERALL_VERTICAL_DIMENSION = 0
POINT_OBJECT_TYPE = [827] POINT_OBJECT_TYPE; [7] VERT_STRUCTURE
PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION = 0
PRIMARY_ENTRANCE_LOCATION = [863] PRIMARY_ENTRANCE_LOCATION; [12] FRONT_CENTRE_ON_GRADE
PRIMARY_PRODUCT = [866] PRIMARY_PRODUCT; [72] NO_PRODUCT
REGIONAL_STYLE = [919] REGIONAL_STYLE; [10] MODERN_INDUSTRIAL_CONSTRUCTION
ROOF_PREDOMINANT_PATTERN = [951] ROOF_PREDOMINANT_PATTERN; [6] MOTTLED
ROOF_PREDOMINANT_SURFACE_MATERIAL = [952] ROOF_PREDOMINANT_SURFACE_MATERIAL; [8] CONGLOMERATE
ROOF_SHAPE = [953] ROOF_SHAPE; [4] FLAT
SNOW_ACCUMULATION = [1072] SNOW_ACCUMULATION; [1] NONE_PRESENT
SOURCE = [1108] SOURCE; [3002] MISSING
TERRAIN_TRAFFICABILITY_COARSE = [1214] TERRAIN_TRAFFICABILITY_COARSE; [5] DEFAULT
TERRAIN_TRAFFICABILITY_FINE = [1215] TERRAIN_TRAFFICABILITY_FINE; [1] ID_0
TERRAIN_TRAFFICABILITY_MEDIUM = [1216] TERRAIN_TRAFFICABILITY_MEDIUM; [21] ID_20
USAGE = [1288] USAGE; [92] NON_MILITARY
VEHICLE_STORAGE_AREA = 0
VEHICLE_STORAGE_DOOR_PRI_HEIGHT = 3
VEHICLE_STORAGE_DOOR_PRI_WIDTH = 6
WALL_PREDOMINANT_PATTERN = [1335] WALL_PREDOMINANT_PATTERN; [1] BRICK
WALL_PREDOMINANT_SURFACE_MATERIAL = [1336] WALL_PREDOMINANT_SURFACE_MATERIAL; [9] MASONRY
WIDTH = 13
COMBUSTION_STATE = [1468] COMBUSTION_STATE; [1] NOT_BURNING
EXTERIOR_WALL_THICKNESS = 0.25
LADDER_PRESENT = 1
LIGHTING_CHARACTERIZATION = [1530] LIGHTING_CHARACTERIZATION; [2] DIMLY_LIT
ROOF_LOAD_BEARING_CAPACITY = 2.5
SURFACE_TEMPERATURE_QB_BUILDING_COMPONENT_TYPE = 15
EMISSIVITY_QB_EM_BAND_AND_BUILDING_COMPONENT_TYPE = 0
UNIVERSALLY_UNIQUE_ID = 00000000-0000-0000-0000-000000000000
done

```

load\_feature\_updates:: Updated OTF features size: 1 before loading source data

print: Feature Id = 9c6d352c-4ca2-11e0-8459-002421a8c4c6 FeatureCategory: 46 FeatureName:  
feature num# 0  
Feature Id = 9c6d352c-4ca2-11e0-8459-002421a8c4c6  
Feature Category Label = BUILDING  
Feature Category = 46  
Feature Geometry = Point  
Feature Precedence = 1  
Slice: 34.8912968655965624 34.891514254403439566 -117.02200039440347723 -117.02178300559660329  
Spatial Grid = 0  
Number Of Coordinates = 1  
Coordinate 0: 34.891405560000002595 -117.02189170000004026 711  
Attributes:  
ANTENNA\_COUNT = 0  
BUILDING\_CONSTRUCTION\_TYPE = [173] BUILDING\_CONSTRUCTION\_TYPE; [3] BRICK\_CLAD\_STEEL\_FRAME  
BUILDING\_FUNCTION = [174] BUILDING\_FUNCTION; [68] HOUSE  
COLOURATION = [207] COLOURATION; [27] BROWN  
COMPLEX\_COMPONENT\_IDENTIFIER = 0  
DEPTH\_BELOW\_SURFACE\_LEVEL = 0  
FRONT\_AND\_AXIS\_REFERENCE = [338] FRONT\_AND\_AXIS\_REFERENCE; [5] POSITIVE\_X  
GENERAL\_DAMAGE\_FRACTION = 7  
HEIGHT\_ABOVE\_SURFACE\_LEVEL = 5  
ILLUMINANCE = 1  
LENGTH = 15  
NAME = "  
NUMERIC\_OBJECT\_IDENTIFIER = 0  
OBJECT\_VARIANT = 0  
ORIENTATION\_ANGLE = 0  
OVERALL\_VERTICAL\_DIMENSION = 0  
POINT\_OBJECT\_TYPE = [827] POINT\_OBJECT\_TYPE; [7] VERT\_STRUCTURE  
PREPARED\_EXPLOSIVE\_DESTRUCTION\_COMPLETION\_FRACTION = 0  
PRIMARY\_ENTRANCE\_LOCATION = [863] PRIMARY\_ENTRANCE\_LOCATION; [12] FRONT\_CENTRE\_ON\_GRADE  
PRIMARY\_PRODUCT = [866] PRIMARY\_PRODUCT; [72] NO\_PRODUCT  
REGIONAL\_STYLE = [919] REGIONAL\_STYLE; [10] MODERN\_INDUSTRIAL\_CONSTRUCTION  
ROOF\_PREDOMINANT\_PATTERN = [951] ROOF\_PREDOMINANT\_PATTERN; [6] MOTTLED  
ROOF\_PREDOMINANT\_SURFACE\_MATERIAL = [952] ROOF\_PREDOMINANT\_SURFACE\_MATERIAL; [8] CONGLOMERATE  
ROOF\_SHAPE = [953] ROOF\_SHAPE; [4] FLAT  
SNOW\_ACCUMULATION = [1072] SNOW\_ACCUMULATION; [1] NONE\_PRESENT  
SOURCE = [1108] SOURCE; [3002] MISSING  
TERRAIN\_TRAFFICABILITY\_COARSE = [1214] TERRAIN\_TRAFFICABILITY\_COARSE; [5] DEFAULT  
TERRAIN\_TRAFFICABILITY\_FINE = [1215] TERRAIN\_TRAFFICABILITY\_FINE; [1] ID\_0  
TERRAIN\_TRAFFICABILITY\_MEDIUM = [1216] TERRAIN\_TRAFFICABILITY\_MEDIUM; [21] ID\_20  
USAGE = [1288] USAGE; [92] NON\_MILITARY  
VEHICLE\_STORAGE\_AREA = 0  
VEHICLE\_STORAGE\_DOOR\_PRI\_HEIGHT = 3  
VEHICLE\_STORAGE\_DOOR\_PRI\_WIDTH = 6  
WALL\_PREDOMINANT\_PATTERN = [1335] WALL\_PREDOMINANT\_PATTERN; [1] BRICK  
WALL\_PREDOMINANT\_SURFACE\_MATERIAL = [1336] WALL\_PREDOMINANT\_SURFACE\_MATERIAL; [9] MASONRY  
WIDTH = 13  
COMBUSTION\_STATE = [1468] COMBUSTION\_STATE; [1] NOT\_BURNING  
EXTERIOR\_WALL\_THICKNESS = 0.25  
LADDER\_PRESENT = 1  
LIGHTING\_CHARACTERIZATION = [1530] LIGHTING\_CHARACTERIZATION; [2] DIMLY\_LIT  
ROOF\_LOAD\_BEARING\_CAPACITY = 2.5  
SURFACE\_TEMPERATURE\_QB\_BUILDING\_COMPONENT\_TYPE = 15  
EMISSIVITY\_QB\_EM\_BAND\_AND\_BUILDING\_COMPONENT\_TYPE = 0  
UNIVERSALLY\_UNIQUE\_ID = 00000000-0000-0000-0000-000000000000  
load\_feature\_updates::done

\*\*\*> 1.1 GRANIOLA: Processing corrections  
\*\*\*> 1.C1 GRANIOLA: add\_corrections  
GRANIOLA: affected slice:  
GRANIOLA: triangle updates \*\*\* NOT IMPLEMENTED \*\*\*  
GRANIOLA: updating features

```

GRANIELA: Get features on slice
GRANIELA: update features - num update features: 1 num slice features: 8418
GRANIELA: processing updated OTF features
GRANIELA: processing updated feature label: BUILDING
GRANIELA: Feature not found ... add new feature label: BUILDING
GRANIELA: DONE - number of updated features: 0 num added features: 1
GRANIELA: Add features to slice
OTF API GeoTile: EJ0204 Setting Features: Completed: 0 of 8419
OTF API GeoTile: EJ0204 Setting Features: Completed: 0 of 8419
OTF API GeoTile: EJ0204 Setting Features: Completed: 0 of 8419
OTF API GeoTile: EJ0204 Setting Features: Completed: 0 of 8419
OTF API GeoTile: EJ0204 Setting Features: Completed: 0 of 8419
OTF API GeoTile: EJ0204 Setting Features: Completed: 0 of 8419
OTF API GeoTile: EJ0204 Setting Features: Completed: 0 of 8419
OTF API GeoTile: EJ0204 Setting Features: Completed: 0 of 8419
OTF API GeoTile: EJ0204 Setting Features: Completed: 0 of 8419
OTF API GeoTile: EJ0204 Setting Features: Completed: 0 of 8419
OTF API GeoTile: EJ0204 Setting Features: Completed: 1 of 8419
OTF API GeoTile: EJ0204 Setting Features: Completed: 1 of 8419
----- info, lnen_build_status.cpp:230: GRANIELA: ***ERROR *** Could not open status file: terrain_database/EJ/EJ0204/status
----- info, lnen_build_status.cpp:230: GRANIELA: ***ERROR *** Could not open status file: terrain_database/EJ/EJ0204/status
----- info, lnen_compiler_coverage.cpp:667: Processing EJ0204
----- info, lnen_build_status.cpp:230: GRANIELA: ***ERROR *** Could not open status file: terrain_database/EJ/EJ0204/status
----- info, lnen_compiler_coverage.cpp:677: Building GeoTile EJ0204.
----- info, lnen_compiler_geo_tile.cpp:127: start building geo tile
----- info, lnen_build_status.cpp:230: GRANIELA: ***ERROR *** Could not open status file: terrain_database/EJ/EJ0204/status
***> 2. GRANIELA: done loading data, building tile
***> 2b. GRANIELA: Construct a CompilerCoverage
GRANIELA: build - build_terrain_database - build_geotiles: start
OTF API GeoTile: EJ0204 Building Terrain Skin: Completed Row: 0 of 20
----- info, sequence.cpp:1346: Number of triangles = 1157.
----- info, sequence.cpp:1346: Number of coordinates = 646.
----- info, sequence.cpp:1346: Number of sequence elements = 1708.
----- info, sequence.cpp:1346: Number of subsequences = 183.
----- info, sequence.cpp:1346: Average subsequence length = 6.3278688524590167575.
----- info, sequence.cpp:1346: Smallest subsequence length = 1.
----- info, sequence.cpp:1346: Largest subsequence length = 64.
----- info, sequence.cpp:1346: Number of triangles = 991.
----- info, sequence.cpp:1346: Number of coordinates = 547.
----- info, sequence.cpp:1346: Number of sequence elements = 1490.
----- info, sequence.cpp:1346: Number of subsequences = 166.
----- info, sequence.cpp:1346: Average subsequence length = 5.9698795180722887821.
----- info, sequence.cpp:1346: Smallest subsequence length = 1.
----- info, sequence.cpp:1346: Largest subsequence length = 60.
----- info, sequence.cpp:1346: Number of triangles = 1378.
----- info, sequence.cpp:1346: Number of coordinates = 744.
----- info, sequence.cpp:1346: Number of sequence elements = 2078.
----- info, sequence.cpp:1346: Number of subsequences = 233.
----- info, sequence.cpp:1346: Average subsequence length = 5.9141630901287554067.
----- info, sequence.cpp:1346: Smallest subsequence length = 1.
----- info, sequence.cpp:1346: Largest subsequence length = 146.
----- info, sequence.cpp:1346: Number of triangles = 1585.
----- info, sequence.cpp:1346: Number of coordinates = 856.
----- info, sequence.cpp:1346: Number of sequence elements = 2334.
----- info, sequence.cpp:1346: Number of subsequences = 249.
----- info, sequence.cpp:1346: Average subsequence length = 6.3694779116465864988.
----- info, sequence.cpp:1346: Smallest subsequence length = 1.
----- info, sequence.cpp:1346: Largest subsequence length = 146.
----- info, sequence.cpp:1346: Number of triangles = 1035.
----- info, sequence.cpp:1346: Number of coordinates = 563.
----- info, sequence.cpp:1346: Number of sequence elements = 1522.
----- info, sequence.cpp:1346: Number of subsequences = 162.
----- info, sequence.cpp:1346: Average subsequence length = 6.3888888888888892836.
----- info, sequence.cpp:1346: Smallest subsequence length = 1.

```

----- info, sequence.cpp:1346: Largest subsequence length = 91.  
----- info, sequence.cpp:1346: Number of triangles = 1078.  
----- info, sequence.cpp:1346: Number of coordinates = 580.  
----- info, sequence.cpp:1346: Number of sequence elements = 1550.  
----- info, sequence.cpp:1346: Number of subsequences = 157.  
----- info, sequence.cpp:1346: Average subsequence length = 6.8662420382165603172.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 85.  
----- info, sequence.cpp:1346: Number of triangles = 585.  
----- info, sequence.cpp:1346: Number of coordinates = 334.  
----- info, sequence.cpp:1346: Number of sequence elements = 862.  
----- info, sequence.cpp:1346: Number of subsequences = 92.  
----- info, sequence.cpp:1346: Average subsequence length = 6.3586956521739130821.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 44.  
----- info, sequence.cpp:1346: Number of triangles = 453.  
----- info, sequence.cpp:1346: Number of coordinates = 276.  
----- info, sequence.cpp:1346: Number of sequence elements = 692.  
----- info, sequence.cpp:1346: Number of subsequences = 79.  
----- info, sequence.cpp:1346: Average subsequence length = 5.7468354430379751108.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 36.  
----- info, sequence.cpp:1346: Number of triangles = 772.  
----- info, sequence.cpp:1346: Number of coordinates = 431.  
----- info, sequence.cpp:1346: Number of sequence elements = 1140.  
----- info, sequence.cpp:1346: Number of subsequences = 122.  
----- info, sequence.cpp:1346: Average subsequence length = 6.3360655737704920654.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 60.  
----- info, sequence.cpp:1346: Number of triangles = 797.  
----- info, sequence.cpp:1346: Number of coordinates = 441.  
----- info, sequence.cpp:1346: Number of sequence elements = 1204.  
----- info, sequence.cpp:1346: Number of subsequences = 135.  
----- info, sequence.cpp:1346: Average subsequence length = 5.91111111111111114269.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 61.  
----- info, sequence.cpp:1346: Number of triangles = 1088.  
----- info, sequence.cpp:1346: Number of coordinates = 595.  
----- info, sequence.cpp:1346: Number of sequence elements = 1624.  
----- info, sequence.cpp:1346: Number of subsequences = 178.  
----- info, sequence.cpp:1346: Average subsequence length = 6.1179775280898880396.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 63.  
----- info, sequence.cpp:1346: Number of triangles = 1303.  
----- info, sequence.cpp:1346: Number of coordinates = 701.  
----- info, sequence.cpp:1346: Number of sequence elements = 1970.  
----- info, sequence.cpp:1346: Number of subsequences = 222.  
----- info, sequence.cpp:1346: Average subsequence length = 5.8693693693693695934.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 91.  
----- info, sequence.cpp:1346: Number of triangles = 1140.  
----- info, sequence.cpp:1346: Number of coordinates = 619.  
----- info, sequence.cpp:1346: Number of sequence elements = 1700.  
----- info, sequence.cpp:1346: Number of subsequences = 186.  
----- info, sequence.cpp:1346: Average subsequence length = 6.1344086021505379591.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 107.  
----- info, sequence.cpp:1346: Number of triangles = 1375.  
----- info, sequence.cpp:1346: Number of coordinates = 742.  
----- info, sequence.cpp:1346: Number of sequence elements = 2054.  
----- info, sequence.cpp:1346: Number of subsequences = 226.  
----- info, sequence.cpp:1346: Average subsequence length = 6.0840707964601765667.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.

----- info, sequence.cpp:1346: Largest subsequence length = 70.  
----- info, sequence.cpp:1346: Number of triangles = 1007.  
----- info, sequence.cpp:1346: Number of coordinates = 558.  
----- info, sequence.cpp:1346: Number of sequence elements = 1516.  
----- info, sequence.cpp:1346: Number of subsequences = 169.  
----- info, sequence.cpp:1346: Average subsequence length = 5.964497041420118606.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 68.  
----- info, sequence.cpp:1346: Number of triangles = 1085.  
----- info, sequence.cpp:1346: Number of coordinates = 597.  
----- info, sequence.cpp:1346: Number of sequence elements = 1638.  
----- info, sequence.cpp:1346: Number of subsequences = 184.  
----- info, sequence.cpp:1346: Average subsequence length = 5.8967391304347822611.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 52.  
----- info, sequence.cpp:1346: Number of triangles = 1031.  
----- info, sequence.cpp:1346: Number of coordinates = 570.  
----- info, sequence.cpp:1346: Number of sequence elements = 1542.  
----- info, sequence.cpp:1346: Number of subsequences = 170.

< ... GRANELA, removed redundant logs lines>

----- info, sequence.cpp:1346: Number of triangles = 737.  
----- info, sequence.cpp:1346: Number of coordinates = 412.  
----- info, sequence.cpp:1346: Number of sequence elements = 1114.  
----- info, sequence.cpp:1346: Number of subsequences = 125.  
----- info, sequence.cpp:1346: Average subsequence length = 5.903999999999999147.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 62.  
----- info, sequence.cpp:1346: Number of triangles = 270.  
----- info, sequence.cpp:1346: Number of coordinates = 159.  
----- info, sequence.cpp:1346: Number of sequence elements = 410.  
----- info, sequence.cpp:1346: Number of subsequences = 46.  
----- info, sequence.cpp:1346: Average subsequence length = 5.8913043478260869179.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 29.  
----- info, sequence.cpp:1346: Number of triangles = 548.  
----- info, sequence.cpp:1346: Number of coordinates = 304.  
----- info, sequence.cpp:1346: Number of sequence elements = 816.  
----- info, sequence.cpp:1346: Number of subsequences = 89.  
----- info, sequence.cpp:1346: Average subsequence length = 6.1573033707865167941.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 43.  
----- info, sequence.cpp:1346: Number of triangles = 670.  
----- info, sequence.cpp:1346: Number of coordinates = 370.  
----- info, sequence.cpp:1346: Number of sequence elements = 1004.  
----- info, sequence.cpp:1346: Number of subsequences = 111.  
----- info, sequence.cpp:1346: Average subsequence length = 6.036036036036035668.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 46.  
----- info, sequence.cpp:1346: Number of triangles = 301.  
----- info, sequence.cpp:1346: Number of coordinates = 175.  
----- info, sequence.cpp:1346: Number of sequence elements = 458.  
----- info, sequence.cpp:1346: Number of subsequences = 52.  
----- info, sequence.cpp:1346: Average subsequence length = 5.7884615384615383249.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.  
----- info, sequence.cpp:1346: Largest subsequence length = 29.  
----- info, sequence.cpp:1346: Number of triangles = 345.  
----- info, sequence.cpp:1346: Number of coordinates = 203.  
----- info, sequence.cpp:1346: Number of sequence elements = 532.  
----- info, sequence.cpp:1346: Number of subsequences = 62.  
----- info, sequence.cpp:1346: Average subsequence length = 5.5645161290322580072.  
----- info, sequence.cpp:1346: Smallest subsequence length = 1.

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----- info, sequence.cpp:1346: Largest subsequence length = 55.
----- info, sequence.cpp:1346: Number of triangles = 314.
----- info, sequence.cpp:1346: Number of coordinates = 194.
----- info, sequence.cpp:1346: Number of sequence elements = 498.
----- info, sequence.cpp:1346: Number of subsequences = 61.
----- info, sequence.cpp:1346: Average subsequence length = 5.1475409836065573188.
----- info, sequence.cpp:1346: Smallest subsequence length = 1.
----- info, sequence.cpp:1346: Largest subsequence length = 49.
----- info, sequence.cpp:1346: Number of triangles = 1010.
----- info, sequence.cpp:1346: Number of coordinates = 542.
----- info, sequence.cpp:1346: Number of sequence elements = 1476.
----- info, sequence.cpp:1346: Number of subsequences = 155.
----- info, sequence.cpp:1346: Average subsequence length = 6.5161290322580649459.
----- info, sequence.cpp:1346: Smallest subsequence length = 1.
----- info, sequence.cpp:1346: Largest subsequence length = 80.
----- info, sequence.cpp:1346: Number of triangles = 359.
----- info, sequence.cpp:1346: Number of coordinates = 209.
----- info, sequence.cpp:1346: Number of sequence elements = 556.
----- info, sequence.cpp:1346: Number of subsequences = 65.
----- info, sequence.cpp:1346: Average subsequence length = 5.5384615384615383249.
----- info, sequence.cpp:1346: Smallest subsequence length = 1.
----- info, sequence.cpp:1346: Largest subsequence length = 38.
----- info, sequence.cpp:1346: Number of triangles = 283.
----- info, sequence.cpp:1346: Number of coordinates = 165.
----- info, sequence.cpp:1346: Number of sequence elements = 426.
----- info, sequence.cpp:1346: Number of subsequences = 47.
----- info, sequence.cpp:1346: Average subsequence length = 6.0425531914893619856.
----- info, sequence.cpp:1346: Smallest subsequence length = 1.
----- info, sequence.cpp:1346: Largest subsequence length = 48.
----- info, sequence.cpp:1346: Number of triangles = 193.
----- info, sequence.cpp:1346: Number of coordinates = 129.
----- info, sequence.cpp:1346: Number of sequence elements = 314.
----- info, sequence.cpp:1346: Number of subsequences = 40.
----- info, sequence.cpp:1346: Average subsequence length = 4.8250000000000001776.
----- info, sequence.cpp:1346: Smallest subsequence length = 1.
----- info, sequence.cpp:1346: Largest subsequence length = 19.
OTF API GeoTile: EJ0204      Building Terrain Skin: Completed Row: 20 of 20
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Stitch_Terrain_Skin_In_GeoTile_Complete, found: Build_Terrain_Skin_In_GeoTile_Complete
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Terrain_Skin_In_GeoTile_Complete, found: Build_Terrain_Skin_In_GeoTile_Complete
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 0 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 1 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 2 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 3 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 4 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 5 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 6 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 7 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 8 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 9 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 10 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 11 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 12 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 13 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 14 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 15 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 16 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 17 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 18 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 19 of 20
OTF API GeoTile: EJ0204      Stitching Inside Geotile: Completed Row: 20 of 20

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----- info, lnen\_build\_status.cpp:221: GRANIELA: status file: terrain\_database/EJ/EJ0204/status, looking for build\_phase\_string: Build\_Features\_In\_GeoTile\_Complete, found: Stitch\_Terrain\_Skin\_In\_GeoTile\_Complete  
----- info, lnen\_build\_status.cpp:221: GRANIELA: status file: terrain\_database/EJ/EJ0204/status, looking for build\_phase\_string: Build\_Terrain\_Skin\_In\_GeoTile\_Complete, found: Build\_Terrain\_Skin\_In\_GeoTile\_Complete  
GRANIELA: check\_otf\_terrain\_file - database\_directory: terrain\_database, geotile\_id: EJ0204  
OTF API GeoTile: EJ0204 Building Features: Completed Row: 0 of 20  
build\_and\_write\_features - terrain\_file\_name: terrain\_database/EJ/EJ0204/EJ0204.ter, feature\_file\_name: terrain\_database/EJ/EJ0204/EJ0204.fea  
----- info, lnen\_compiler\_page\_body.cpp:3230: Fetched 3 bridges in page.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of features = 55.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of point features = 4.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of linear features = 40.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of areal features = 11.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of areal features with holes = 0.  
----- info, lnen\_compiler\_page\_body.cpp:3369: Fetched 3 bridges.  
----- info, lnen\_compiler\_page\_body.cpp:3371: Fetched 3 bridge spans.  
----- info, lnen\_compiler\_page\_body.cpp:3545: Fetched 3 bridges in update\_bridge\_spans.  
----- info, lnen\_compiler\_page\_body.cpp:3561: Fetched 3 bridge\_spans in update\_bridge\_spans.  
----- info, lnen\_compiler\_page\_body.cpp:3230: Fetched 1 bridges in page.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of features = 42.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of point features = 2.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of linear features = 33.

< ... GRANIELA, removed redundant logs lines >

----- info, lnen\_compiler\_page\_body.cpp:3545: Fetched 0 bridges in update\_bridge\_spans.  
----- info, lnen\_compiler\_page\_body.cpp:3561: Fetched 0 bridge\_spans in update\_bridge\_spans.  
----- info, lnen\_compiler\_page\_body.cpp:3230: Fetched 0 bridges in page.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of features = 5.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of point features = 0.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of linear features = 4.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of areal features = 1.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of areal features with holes = 0.  
----- info, lnen\_compiler\_page\_body.cpp:3369: Fetched 0 bridges.  
----- info, lnen\_compiler\_page\_body.cpp:3371: Fetched 0 bridge spans.  
----- info, lnen\_compiler\_page\_body.cpp:3545: Fetched 0 bridges in update\_bridge\_spans.  
----- info, lnen\_compiler\_page\_body.cpp:3561: Fetched 0 bridge\_spans in update\_bridge\_spans.  
----- info, lnen\_compiler\_page\_body.cpp:3230: Fetched 0 bridges in page.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of features = 5.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of point features = 0.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of linear features = 4.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of areal features = 1.  
----- info, lnen\_compiler\_page\_body.cpp:3983: Number of areal features with holes = 0.  
----- info, lnen\_compiler\_page\_body.cpp:3369: Fetched 0 bridges.  
----- info, lnen\_compiler\_page\_body.cpp:3371: Fetched 0 bridge spans.  
----- info, lnen\_compiler\_page\_body.cpp:3545: Fetched 0 bridges in update\_bridge\_spans.  
----- info, lnen\_compiler\_page\_body.cpp:3561: Fetched 0 bridge\_spans in update\_bridge\_spans.  
OTF API GeoTile: EJ0204 Building Features: Completed Row: 20 of 20  
----- info, lnen\_compiler\_geo\_tile.cpp:2665: Checking if bridges have spans correctly related to them.  
----- info, lnen\_compiler\_geo\_tile.cpp:2697: Fetched 93 bridges.  
----- info, lnen\_compiler\_geo\_tile.cpp:2831: Checking if spans have bridges correctly related to them.  
----- info, lnen\_compiler\_geo\_tile.cpp:2837: Fetched 339 bridge spans.  
OTF API GeoTile: EJ0204 Building Steep Slopes: Completed Row: 0 of 20  
----- info, steep\_slope\_areal\_creator.cpp:793: Processing 1157 triangles.  
----- info, steep\_slope\_areal\_creator.cpp:803: Found 12 steep triangles.  
----- info, terrain\_page\_body.cpp:6928: Page has 7 steep slope areals  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 4 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 3 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 3 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 5 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 4 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 4 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 5 vertices

----- info, steep\_slope\_areal\_creator.cpp:793: Processing 991 triangles.  
----- info, steep\_slope\_areal\_creator.cpp:803: Found 5 steep triangles.  
----- info, terrain\_page\_body.cpp:6928: Page has 3 steep slope areals  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 3 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 4 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 3 vertices

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----- info, terrain\_page\_body.cpp:6928: Page has 0 steep slope areals  
----- info, steep\_slope\_areal\_creator.cpp:793: Processing 610 triangles.  
----- info, steep\_slope\_areal\_creator.cpp:803: Found 28 steep triangles.  
----- info, terrain\_page\_body.cpp:6928: Page has 8 steep slope areals  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 4 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 3 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 7 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 6 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 4 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 3 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 5 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 4 vertices  
----- info, steep\_slope\_areal\_creator.cpp:793: Processing 568 triangles.  
----- info, steep\_slope\_areal\_creator.cpp:803: Found 3 steep triangles.  
----- info, terrain\_page\_body.cpp:6928: Page has 1 steep slope areals  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 4 vertices  
OTF API GeoTile: EJ0204 Building Step Slopes: Completed Row: 9 of 20  
----- info, steep\_slope\_areal\_creator.cpp:793: Processing 958 triangles.  
----- info, steep\_slope\_areal\_creator.cpp:803: Found 3 steep triangles.  
----- info, terrain\_page\_body.cpp:6928: Page has 2 steep slope areals  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 4 vertices  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 3 vertices

< ... GRANIELA, removed redundant logs lines>

----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 4 vertices  
----- info, steep\_slope\_areal\_creator.cpp:793: Processing 359 triangles.  
----- info, steep\_slope\_areal\_creator.cpp:803: Found 1 steep triangles.  
----- info, terrain\_page\_body.cpp:6928: Page has 0 steep slope areals  
----- info, steep\_slope\_areal\_creator.cpp:793: Processing 283 triangles.  
----- info, steep\_slope\_areal\_creator.cpp:803: Found 0 steep triangles.  
----- info, terrain\_page\_body.cpp:6928: Page has 0 steep slope areals  
----- info, steep\_slope\_areal\_creator.cpp:793: Processing 193 triangles.  
----- info, steep\_slope\_areal\_creator.cpp:803: Found 1 steep triangles.  
----- info, terrain\_page\_body.cpp:6928: Page has 1 steep slope areals  
----- info, terrain\_page\_body.cpp:6942: Adding steep slope areal with 3 vertices  
OTF API GeoTile: EJ0204 Building Step Slopes: Completed Row: 20 of 20  
----- info, lnen\_compiler\_geo\_tile.cpp:2529: Checking the feature ID's on the triangles.  
----- info, lnen\_compiler\_geo\_tile.cpp:2587: Checked feature ID's on 330232 triangles.  
----- info, lnen\_compiler\_geo\_tile.cpp:2591: Found 90 triangles with bad feature ID's.  
----- info, lnen\_compiler\_geo\_tile.cpp:2595: Checked ID's on 7250 features.  
----- info, uhrb\_template\_cache.cpp:1019: Attempt to initialize the UHRB template cache when it was already initialized.  
----- info, lnen\_compiler\_geo\_tile.cpp:3501: Using the binary files to build the UHRB features.  
----- info, uhrb\_feature\_database\_header.cpp:117: UHRB\_FEATURE\_DATABASE\_HEADER:  
----- info, uhrb\_feature\_database\_header.cpp:117: Signature: UHRB FEATURE DB  
----- info, uhrb\_feature\_database\_header.cpp:117: Application Identifier: ERC OTF TERRAIN COMPILER  
----- info, uhrb\_feature\_database\_header.cpp:117: Endian Signature: 67452301  
----- info, uhrb\_feature\_database\_header.cpp:117: Specification Version: 1  
----- info, uhrb\_feature\_database\_header.cpp:117: Application Version: 1  
----- info, uhrb\_feature\_database\_header.cpp:117: Number Features: 0  
----- info, feature\_template\_cache.cpp:265: shutdown- Feature template size: 0, my\_initialized: 0  
----- info, compiler\_common.cpp:187: Clearing features from API level  
----- info, compiler\_common.cpp:198: Clearing 0 UHRB features from API level

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----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Terrain_Skin_In_GeoTile_Complete, found: Build_Terrain_Skin_In_GeoTile_Complete
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Stitch_Terrain_Skin_In_GeoTile_Complete, found: Stitch_Terrain_Skin_In_GeoTile_Complete
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Features_In_GeoTile_Complete, found: Build_Features_In_GeoTile_Complete
----- info, lnen_compiler_geo_tile.cpp:166: <<DONE>> start building geo tile
----- info, compiler_common.cpp:187: Clearing features from API level
----- info, compiler_common.cpp:198: Clearing 0 UHRB features from API level
----- info, otf_api.cpp:404:
----- info, otf_api.cpp:404: Total number of triangles = 0.
----- info, otf_api.cpp:404: Total number of sequence elements = 0.
----- info, otf_api.cpp:404: Average subsequence length = nan.
----- info, otf_api.cpp:404: Total number of coordinates = 0.
----- info, otf_api.cpp:404: Total number of features = 0.
----- info, otf_api.cpp:404: Total number of point features = 0.
----- info, otf_api.cpp:404: Total number of linear features = 0.
----- info, otf_api.cpp:404: Total number of areal features = 0.
----- info, otf_api.cpp:404: Total number of areal features with holes = 0.
----- info, otf_api.cpp:404: Total number of GeoTiles = 0.
----- info, otf_api.cpp:404: Total number of pages = 0.
----- info, otf_api.cpp:404: Total number of regions = 0.
----- info, otf_api.cpp:404: Total number of subregions = 0.
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Terrain_Skin_In_GeoTile_Complete, found: Build_Terrain_Skin_In_GeoTile_Complete
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Features_In_GeoTile_Complete, found: Build_Features_In_GeoTile_Complete
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Terrain_Skin_In_GeoTile_Complete, found: Build_Terrain_Skin_In_GeoTile_Complete
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Features_In_GeoTile_Complete, found: Build_Features_In_GeoTile_Complete
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Terrain_Skin_In_GeoTile_Complete, found: Build_Terrain_Skin_In_GeoTile_Complete
----- info, uhrb_feature_database_header.cpp:117: UHRB_FEATURE_DATABASE_HEADER:
----- info, uhrb_feature_database_header.cpp:117: Signature: UHRB FEATURE DB
----- info, uhrb_feature_database_header.cpp:117: Application Identifier: ERC OTF TERRAIN COMPILER
----- info, uhrb_feature_database_header.cpp:117: Endian Signature: 67452301
----- info, uhrb_feature_database_header.cpp:117: Specification Version: 1
----- info, uhrb_feature_database_header.cpp:117: Application Version: 1
----- info, uhrb_feature_database_header.cpp:117: Number Features: 0
----- info, lnen_compiler_coverage.cpp:667: Processing EJ0204
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_GeoTile_Complete, found: Build_GeoTile_Complete
----- info, lnen_compiler_coverage.cpp:687: EJ0204 already built.
----- info, compiler_common.cpp:187: Clearing features from API level
----- info, compiler_common.cpp:198: Clearing 0 UHRB features from API level
----- info, otf_api.cpp:404:
----- info, otf_api.cpp:404: Total number of triangles = 0.
----- info, otf_api.cpp:404: Total number of sequence elements = 0.
----- info, otf_api.cpp:404: Average subsequence length = nan.
----- info, otf_api.cpp:404: Total number of coordinates = 0.
----- info, otf_api.cpp:404: Total number of features = 0.
----- info, otf_api.cpp:404: Total number of point features = 0.
----- info, otf_api.cpp:404: Total number of linear features = 0.
----- info, otf_api.cpp:404: Total number of areal features = 0.
----- info, otf_api.cpp:404: Total number of areal features with holes = 0.
----- info, otf_api.cpp:404: Total number of GeoTiles = 0.
----- info, otf_api.cpp:404: Total number of pages = 0.
----- info, otf_api.cpp:404: Total number of regions = 0.
----- info, otf_api.cpp:404: Total number of subregions = 0.
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Terrain_Skin_In_GeoTile_Complete, found: Build_Terrain_Skin_In_GeoTile_Complete

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----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Features_In_GeoTile_Complete, found: Build_Features_In_GeoTile_Complete
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Terrain_Skin_In_GeoTile_Complete, found: Build_Terrain_Skin_In_GeoTile_Complete
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Features_In_GeoTile_Complete, found: Build_Features_In_GeoTile_Complete
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Build_Terrain_Skin_In_GeoTile_Complete, found: Build_Terrain_Skin_In_GeoTile_Complete
----- info, uhrb_feature_database_header.cpp:117: UHRB_FEATURE_DATABASE_HEADER:
----- info, uhrb_feature_database_header.cpp:117: Signature: UHRB FEATURE DB
----- info, uhrb_feature_database_header.cpp:117: Application Identifier: ERC OTF TERRAIN COMPILER
----- info, uhrb_feature_database_header.cpp:117: Endian Signature: 67452301
----- info, uhrb_feature_database_header.cpp:117: Specification Version: 1
----- info, uhrb_feature_database_header.cpp:117: Application Version: 1
----- info, uhrb_feature_database_header.cpp:117: Number Features: 0
----- info, lnen_compiler_coverage.cpp:355: stitch_terrain_database: start
GRANIELA: build_geotiles <<DONE>>
***> 2c. GRANIELA: triangle cache initialized
***> 2d. GRANIELA: feature cache initialized
***> 2e. GRANIELA: done
***> 3. GRANIELA: building TDB
***> 2b. GRANIELA: Construct a CompilerCoverage
GRANIELA: build - build_terrain_database - build_geotiles: start
GRANIELA: build_geotiles <<DONE>>
***> 2c. GRANIELA: triangle cache initialized
***> 2d. GRANIELA: feature cache initialized
***> 2e. GRANIELA: done
***> 4. GRANIELA: stitch TDB
GRANIELA: stitch_geotiles: start
GRANIELA: stitch_geotiles <<DONE>>
combine_templates: building .tff file, dir: terrain_database/feature_templates
combine_templates: building .tff file: terrain_database/feature_templates/feature_templates.tff
OTF API GeoTile: EJ0204 Building Feature Templates: Completed: 0 of 1
----- info, feature_template_cache.cpp:1390: Adding GeoTile EJ0204 to centralized tff file: terrain_database/EJ/EJ0204/feature_templates.tff
----- info, feature_template_cache.cpp:1439: Number feature templates in EJ0204, num templates: 8419
----- info, feature_template_cache.cpp:603: 518 unique feature templates.
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Combine_Feature_Templates_Complete, found: Build_GeoTile_Complete
----- info, lnen_build_status.cpp:221: GRANIELA: status file: terrain_database/EJ/EJ0204/status, looking for build_phase_string:
Combine_Feature_Templates_Complete, found: Build_GeoTile_Complete
GRANIELA: stitch_terrain_database - after combine templates :1
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 0 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 1 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 2 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 3 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 4 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 5 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 6 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 7 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 8 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 9 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 10 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 11 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 12 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 13 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 14 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 15 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 16 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 17 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 18 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 19 of 20
OTF API GeoTile: EJ0204 Updating Feature Templates: Completed: 20 of 20

```

----- info, lnen\_build\_status.cpp:221: GRANIELA: status file: terrain\_database/EJ/EJ0204/status, looking for build\_phase\_string:  
Stitch\_Terrain\_Skin\_Between\_GeoTiles\_Complete, found: Combine\_Feature\_Templates\_Complete  
----- info, lnen\_compiler\_coverage.cpp:494: stitch\_terrain\_database: <<DONE>>

Compiler took 0 hour(s), 1 minute(s), 18 second(s).

=====

TIME: Stopping at Thu Aug 4 16:36:08 EDT 2011

## LTF client log - ltfApiServer-Aug04-5.log

Log shows LTF API calls performed to regenerate local LTF.

TIME: Running on lvcServer.localdomain at Thu Aug 4 15:35:13 EDT 2011 - net.onesaf.ext.dpbtdbrgen.services.tdbrepository.LTFApiServer -

START CLASSPATH

/work/jdk1.6.0\_10/lib/dt.jar:/work/jdk1.6.0\_10/lib/tools.jar:/work/sp\_onesaf2\_1/SWR/lib/services/dpbtdbrgen.jar:/work/sp\_onesaf2\_1/SWR/external/FLTApi/FLTReadWrite.jar:/work/sp\_onesaf2\_1/SWR/external/LTFApi/LTFReadWrite.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/srm.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/aterm-java-1.6.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-test.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-rules.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-query.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-pellint.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapi.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-modularity.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-jena.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-explanation.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-el.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-dig.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-datatypes.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-core.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/xercesImpl-2.7.1.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/wstx-asl-3.2.9.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/tax-api-1.0.1.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/slf4j-log4j12-1.5.6.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/slf4j-api-1.5.6.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/lucene-core-2.3.1.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/log4j-1.2.13.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/junit-4.5.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/jena-2.6.2-test.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/jena-2.6.2.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/iri-0.7.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/icu4j-3.4.4.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/arq-2.8.1.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jetty/jetty.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/xsdlib/xsdlib.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/xsdlib/relaxngDatatype.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/owlapi.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/owlapi/owlapi-bin.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/owlapi/owlapi-owlapiv3.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/owlapiv3/owlapi-bin.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/gt2-coverage-2.4.4.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/gt2-gml-2.4.4.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/gt2-main-2.4.4.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/jts-1.8.jar:/work/sp\_onesaf2\_1/SWR/external/geotransform/geotransform\_devel.jar:/work/sp\_onesaf2\_1/SWR/external/jetty/servlet-api-2.5-6.0.0rc2.jar:/work/sp\_onesaf2\_1/SWR/external/jetty/jetty-util-6.0.0rc2.jar:/work/sp\_onesaf2\_1/SWR/external/jetty/jetty-6.0.0rc2.jar:/work/sp\_onesaf2\_1/SWR/external/scripting/rhino1\_6R7.jar:/work/sp\_onesaf2\_1/SWR/external/scripting/jython.jar:/work/sp\_onesaf2\_1/SWR/external/scripting/js-engine.jar:/work/sp\_onesaf2\_1/SWR/external/scripting/jython-engine.jar:/work/sp\_onesaf2\_1/SWR/external/scripting/script-api.jar:/work/sp\_onesaf2\_1/SWR/external/xmlbeans/DGMsgMappings.jar:/work/sp\_onesaf2\_1/SWR/external/xmlbeans/xmlbeans-2.3.0/lib/xbean.jar:/work/sp\_onesaf2\_1/SWR/external/truezip/truezip.jar:/work/sp\_onesaf2\_1/SWR/external/jmx/jmxremote\_optional.jar:/work/sp\_onesaf2\_1/SWR/external/jmx/jmxremote.jar:/work/sp\_onesaf2\_1/SWR/external/jmx/jmxtools.jar:/work/sp\_onesaf2\_1/SWR/external/common-s-math/commons-math-1.1.jar:/work/sp\_onesaf2\_1/SWR/external/poi/poi-2.5.1-final-20040804.jar:/work/sp\_onesaf2\_1/SWR/external/java3d/vecmath.jar:/work/sp\_onesaf2\_1/SWR/external/java3d/j3dcore.jar:/work/sp\_onesaf2\_1/SWR/external/jrms/classes.jar:/work/sp\_onesaf2\_1/SWR/external/prefuse/prefuse.jar:/work/sp\_onesaf2\_1/SWR/external/prefuse/prefuse.jar:/work/sp\_onesaf2\_1/SWR/external/skinlf/skinlf.jar:/work/sp\_onesaf2\_1/SWR/external/javahelp/lib/jhall.jar:/work/sp\_onesaf2\_1/SWR/external/xerces/xml-apis.jar:/work/sp\_onesaf2\_1/SWR/external/xerces/xercesImpl.jar:/work/sp\_onesaf2\_1/SWR/external/jaxb/lib/jaxb-all.jar:/work/sp\_onesaf2\_1/SWR/external/infobus/infobus.jar:/work/sp\_onesaf2\_1/SWR/external/mckoi1.0.2/mckoidb.jar:/work/sp\_onesaf2\_1/S

```

WR/external/xalan2/xalan.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/proploader.jar:/work/sp_onesaf2_1/SWR/external/log4j/log4j-
1.2.8.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/logger2.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/init.jar:/work/sp_onesaf2_1/SWR/lib/s
ervices/sys/enum.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/cachemgr.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/ext.jar:/work/sp_onesaf2
_1/SWR/lib/services/sys/repository.jar:/work/sp_onesaf2_1/SWR/lib/services/gui/support/support.jar:/work/sp_onesaf2_1/SWR/lib/services/gui/t
ool/resources.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/timer.jar:/work/sp_onesaf2_1/SWR/lib/services/data/sax.jar:/work/sp_onesaf2_1/SW
R/lib/services/data/dom.jar:/work/sp_onesaf2_1/SWR/lib/services/data/encodable.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/capability.jar:/w
ork/sp_onesaf2_1/SWR/lib/services/data/dm/ecs.jar:/work/sp_onesaf2_1/SWR/lib/ERC/ERCEvents.jar:/work/sp_onesaf2_1/SWR/lib/services/sy
s/erctypes.jar:/work/sp_onesaf2_1/SWR/lib/services/model/modelengine.jar:/work/sp_onesaf2_1/SWR/lib/models/models.jar:/work/sp_onesaf2
_1/SWR/lib/services/sys/composition.jar:/work/sp_onesaf2_1/SWR/classes
END CLASSPAT
rmi://localhost/LTFApiService ready.
Aug 4, 2011 3:50:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log warning
SEVERE: [35m***[WARNING]***_ [0mdpbtbrgen.services.tdbrepository.LTFApiImpl::_ [1mreadFeatures_ [0m [1373] - LTFApi - LTF
extent readFeatures ... UNDER DEBUG
Aug 4, 2011 3:50:29 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info
INFO: dpbtdbrgen.services.geoscratchpad.LayerAbstract::_ [1m<init>_ [0m [60] - Layer Type: FeatureContainer
Aug 4, 2011 3:50:34 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tdbrepository.LTFApiImpl::_ [1mreadFeatures_ [0m [1411] - =====> read LTF features of type: PRISM, from
area =====> [Geodetic] sw: GDC: (lat: 34.89112778447567 long: -117.02216947777782 elevation: 0.0, ne: GDC: (lat: 34.89168334003122 long:
-117.02161392222223 elevation: 0.0 - [Geocetric] sw: GCC: (-2379510.413560226, -4665588.412398719, 3627966.420246739) ne: GCC: (-
2379449.157240211, -4665580.077967442, 3628016.973585964)
Components.LTF.Utilities.LTFReadWrite::loadFeatures|838 - @loadFeatures( extents )
Components.LTF.Utilities.LTFReadWrite::findDatabaseName|822 - findDatabaseName ***WARNING*** HARDCODED LTF path + name:
/work/tdbRepository//live/LTF/c7_textured/
LTFReadWrite_nativeRead - loading LTF: /work/tdbRepository//live/LTF/c7_textured/
TDB Global Extents: ll: [-2380054.833282, -4666066.162457, 3627581.828627], ur: [-2378904.112614, -4665102.254725, 3628402.066289]
DELTA extents: deltaX: 1150.720668, deltaY: 963.907732, deltaZ: 820.237662
TDB Local Extents: ll: [-500.000000, -500.000000, 0.000000], ur: [500.000000, 500.000000, 0.000000]
Computed ll & ur using transform: ll global: [-2380054.833282, -46655611.831597, 3627581.828627] ur global: [-2378904.112614, -
4665556.585584, 3628402.066289] ll error: [0.000000, 454.330860, 0.000000] ur error: [0.000000, -454.330860, 0.000000]
Components.LTF.Utilities.LTFReadWrite::loadFeatures|861 - nativeRead - processing time: 360 msec
LTFReadWrite_nativeLoadFeatures - loading LTF: /work/tdbRepository//live/LTF/c7_textured/
LTFReadWrite_nativeLoadFeatures GCC - user Area of interest (AOI) global extents: [[-2379510.413560, -2379449.157240], [-
4665588.412399, -4665580.077967], [3627966.420247, 3628016.973586]]
LTFReadWrite_nativeLoadFeatures - TODO - Convert GCC to local
LTFReadWrite_nativeLoadFeatures - found: 0 tile(s) in the AOI out of 1
LTFReadWrite_nativeLoadFeatures - NO TILES INTERSECT AOI getIntersectedTiles ***FUNC NOT WORKING*** use brute force method.
LTFReadWrite_nativeLoadFeatures - computeExtents results for tileId: [0, 0], computed local extents: [[-500, 500], [-500, 500]]
LTFReadWrite_nativeLoadFeatures - computeExtents results for tileId: [0, 0], computed global extents min: [-2380054.83, -4665611.83,
3627581.83], computed global extents max: [-2378904.11, -4665556.59, 3628402.07]
Feature inside AOI: index: 187: Feature id: [0:187] tile extents: [[-500, 500], [-500, 500]] feature local center: [-6.99, -0.36] global center: [-
2379485.79, -4665581.22, 3627991.65] intersects: 1 contains: 1
Feature inside AOI: index: 188: Feature id: [0:188] tile extents: [[-500, 500], [-500, 500]] feature local center: [-6.99, -0.36] global center: [-
2379485.79, -4665581.22, 3627991.65] intersects: 1 contains: 1
Feature inside AOI: index: 1931: Feature id: [0:1931] tile extents: [[-500, 500], [-500, 500]] feature local center: [10.15, 13.88] global
center: [-2379466.82, -4665581.75, 3628003.33] intersects: 1 contains: 1
LTFReadWrite_nativeLoadFeatures: list size: 3
LTFReadWrite_nativeLoadFeatures: num tiles: 1, total featureCount: 3
LTFReadWrite_nativeLoadFeatures: DONE
Components.LTF.Utilities.LTFReadWrite::loadFeatures|872 - nativeLoadFeatures - processing time: 315 msec, num features loaded: 3
Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|997 - processing Loaded LTF features.
LTFReadWrite_nativeNextTerrainTile - processing tile id: [0, 0]
LTFReadWrite_nativeNextTerrainTile - first feature id: [0:187]
Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1020 - LTF::loadFeatures processing tile
LTFReadWrite_nativeGetTerrainTileIdxCol - processing tile id [0]: 0
LTFReadWrite_nativeGetTerrainTileIdxRow - processing tile id [1]: 0
Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1027 - LTF::loadFeatures processing tile: [0,0]
Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1033 - LTF::loadFeatures processing layer
LTFReadWrite_nativeNextFeature - currentFeatureId: [0:187]
Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1045 - LTF::loadFeatures processing feature: 187
LTFReadWrite_nativeGetFeatureGeometryType - geometry: GEOMETRY_CODE_CYLINDER
Components.LTF.Utilities.LTFReadWrite::processFeature|1332 - LTF::processFeature processing featureIndex: 187, hashCodeIndex: -
1185140016

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LTFReadWrite\_nativeGetGeometryVextexCount featureId: [0:187], featureName: Tree Trunk  
 LTFReadWrite\_nativeGetGeometryVextexCount TREE  
 cylinder: center: local coord: [-6.99, -0.36, 712.05] global coord: [-2379751.14, -4666101.51, 3628398.96] radius: 0.12 height: 5.00  
 LTFReadWrite\_nativeGetGeometryVextexCount num vertices: 3  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1378 - LTF::processFeature num geometry vertices: 3  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1392 - center geocentric vertex [-2379751.144905152, -4666101.507823278, 3628398.9641932654] radius: 0.125 height:5.0  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1404 - ----> geometry - processing time: 13  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1417 - num attributes: 5  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Wall Texture, string value: walls.png  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Door Decal, string value: door.png  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Window Decal, string value: window.png  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Roof Texture, string value: roof.png  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Foliage Texture, string value: leaves.png  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1468 - ----> attributes - processing time: 86  
 Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1106 - process feature - processing time: 230 msec  
 LTFReadWrite\_nativeNextFeature - currentFeatureId: [0:188]  
 Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1045 - LTF::loadFeatures processing feature: 188  
 LTFReadWrite\_nativeGetFeatureGeometryType - geometry: GEOMETRY\_CODE\_CYLINDER  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1332 - LTF::processFeature processing featureIndex: 188, hashCodeIndex: -1185140015  
 LTFReadWrite\_nativeGetGeometryVextexCount featureId: [0:188], featureName: Tree Foliage  
 LTFReadWrite\_nativeGetGeometryVextexCount TREE  
 cylinder: center: local coord: [-6.99, -0.36, 712.80] global coord: [-2379751.42, -4666102.06, 3628399.39] radius: 1.50 height: 3.50  
 LTFReadWrite\_nativeGetGeometryVextexCount num vertices: 3  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1378 - LTF::processFeature num geometry vertices: 3  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1392 - center geocentric vertex [-2379751.4243996134, -4666102.055844373, 3628399.3932104274] radius: 1.5 height:3.5  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1404 - ----> geometry - processing time: 7  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1417 - num attributes: 5  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Wall Texture, string value: walls.png  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Door Decal, string value: door.png  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Window Decal, string value: window.png  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Roof Texture, string value: roof.png  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Foliage Texture, string value: leaves.png  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1468 - ----> attributes - processing time: 52  
 Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1106 - process feature - processing time: 64 msec  
 LTFReadWrite\_nativeNextFeature - currentFeatureId: [0:1931]  
 Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1045 - LTF::loadFeatures processing feature: 1931  
 LTFReadWrite\_nativeGetFeatureGeometryType - geometry: GEOMETRY\_CODE\_PRISM  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1332 - LTF::processFeature processing featureIndex: 1931, hashCodeIndex: 1915366054  
 LTFReadWrite\_nativeGetGeometryVextexCount featureId: [0:1931], featureName: Building Wall  
 LTFReadWrite\_nativeGetGeometryVextexCount BUILDING  
 LTFReadWrite\_nativeGetGeometryVextexCount num vertices: 8  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1351 - LTF::processFeature num geometry vertices: 8  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 0. geocentric vertex: [ -2379489.191058226, -4665585.888029615, 3627983.4710462526 ]  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 1. geocentric vertex: [ -2379475.1262431843, -4665593.061180326, 3627983.4710462526 ]  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 2. geocentric vertex: [ -2379469.7548373807, -4665582.529151629, 3628000.4238694 ]  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 3. geocentric vertex: [ -2379483.8196524223, -4665575.356000918, 3628000.4238694 ]  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 4. geocentric vertex: [ -2379492.9176510475, -4665593.19497755, 3627989.1912750793 ]  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 5. geocentric vertex: [ -2379478.852836006, -4665600.368128261, 3627989.1912750793 ]  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 6. geocentric vertex: [ -2379473.4814302023, -4665589.836099563, 3628006.144098226 ]  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 7. geocentric vertex: [ -2379487.546245244, -4665582.662948852, 3628006.144098226 ]  
 Components.LTF.Utilities.LTFReadWrite::processFeature|1404 - ----> geometry - processing time: 17



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Components.LTF.Utilities.LTFReadWrite::processFeature|1417 - num attributes: 5
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Wall Texture, string value: walls.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Door Decal, string value: door.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Window Decal, string value: window.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Roof Texture, string value: roof.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Foliage Texture, string value: leaves.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1468 - ----> attributes - processing time: 53
Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1106 - process feature - processing time: 74 msec
Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1115 - process tile features - processing time: 75 msec
Components.LTF.Utilities.LTFReadWrite::loadFeatures|891 - Loaded features extents
Components.LTF.Utilities.LTFReadWrite$Extents
{
sw (-2379510.413560226,-4665588.412398719,3627966.420246739) ne (-2379449.157240211,-4665580.077967442,3628016.973585964)
}
processed: 3 features.
DONE LOADING AND PROCESSING
Aug 4, 2011 3:50:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_[0mdpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mcreatePrismDataElements_[0m [1513] -
UPDATED CODE, NEEDS TO BE CHECKED
Aug 4, 2011 3:50:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log fine
INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mcreatePrismDataElements_[0m [1523] - ==> Feature type: PRISM, hasCodeIndex:
1915366054
Aug 4, 2011 3:50:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_[0mdpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_[0m [270] - Geometry type:
class com.vividsolutions.jts.geom.MultiPoint DEBUG.
Aug 4, 2011 3:50:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_[0mdpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_[0m [313] - MultiPoint:
extents sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021975 Deg DOUBLE CHECK ...
Aug 4, 2011 3:50:35 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mcreatePrismDataElements_[0m [1565] - LTF PRISM geom:
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Geometry
{
type: PRISM
coordType: GDC
extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021975 Deg
prism data: Geodetic: lat 34.891315 lon -117.021975 Deg
prism data: Geodetic: lat 34.891315 lon -117.021802 Deg
prism data: Geodetic: lat 34.891501 lon -117.021802 Deg
prism data: Geodetic: lat 34.891501 lon -117.021975 Deg
prism data: Geodetic: lat 34.891315 lon -117.021975 Deg
prism data: Geodetic: lat 34.891315 lon -117.021802 Deg
prism data: Geodetic: lat 34.891501 lon -117.021802 Deg
prism data: Geodetic: lat 34.891501 lon -117.021975 Deg
}
Aug 4, 2011 3:50:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_[0mdpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_[0m [270] - Geometry type:
class com.vividsolutions.jts.geom.MultiPoint DEBUG.
Aug 4, 2011 3:50:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_[0mdpbtbrgen.services.geoscratchpad.TdbGen_Geometry::_[1mgetExtents_[0m [313] - MultiPoint:
extents sw: Geodetic: lat 34.891315 lon -117.021975 Deg ne: Geodetic: lat 34.891501 lon -117.021975 Deg DOUBLE CHECK ...
Aug 4, 2011 3:50:36 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbApi::_[1mlookupRmiOntologyRepositoryManagerService_[0m [136] - =====>
Connecting to OntologyRepositoryManager service
Aug 4, 2011 3:50:37 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbApi::_[1mlookupRmiOntologyRepositoryManagerService_[0m [138] - =====>
ontologyManagerRmiInterface initialized.
Aug 4, 2011 3:50:37 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning
SEVERE: _[35m***[WARNING]***_[0mdpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mreadFeatures_[0m [1373] - LTFApi - LTF
extent readFeatures ... UNDER DEBUG
Aug 4, 2011 3:50:37 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.geoscratchpad.LayerAbstract::_[1m<init>_[0m [60] - Layer Type: FeatureContainer
Aug 4, 2011 3:50:37 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug

```

INFO: dpbtdbrgen.services.tdbrepository.LTFApiImpl:: [lMreadFeatures\_0m [1411] - =====> read LTF features of type: CYLINDER, from area ==> [Geodetic] sw: GDC: (lat: 34.89112778447567 long: -117.02216947777782 elevation: 0.0, ne: GDC: (lat: 34.89168334003122 long: -117.02161392222223 elevation: 0.0 - [Geocetric] sw: GCC: (-2379510.413560226, -4665588.412398719, 3627966.420246739) ne: GCC: (-2379449.157240211, -4665580.077967442, 3628016.973585964)

Components.LTF.Utilities.LTFReadWrite::loadFeatures|838 - @loadFeatures( extents )

Components.LTF.Utilities.LTFReadWrite::findDatabaseName|822 - findDatabaseName \*\*\*WARNING\*\*\* HARDCODED LTF path + name: /work/tdbRepository//live/LTF/c7\_textured/

LTFReadWrite\_nativeRead - loading LTF: /work/tdbRepository//live/LTF/c7\_textured/

TDB Global Extents: ll: [-2380054.833282, -4666066.162457, 3627581.828627], ur: [-2378904.112614, -4665102.254725, 3628402.066289]

DELTA extents: deltaX: 1150.720668, deltaY: 963.907732, deltaZ: 820.237662

TDB Local Extents: ll: [-500.000000, -500.000000, 0.000000], ur: [500.000000, 500.000000, 0.000000]

Computed ll & ur using transform: ll global: [-2380054.833282, -4665611.831597, 3627581.828627] ur global: [-2378904.112614, -4665556.585584, 3628402.066289] ll error: [0.000000, 454.330860, 0.000000] ur error: [0.000000, -454.330860, 0.000000]

Components.LTF.Utilities.LTFReadWrite::loadFeatures|861 - nativeRead - processing time: 76 msec

LTFReadWrite\_nativeLoadFeatures - loading LTF: /work/tdbRepository//live/LTF/c7\_textured/

LTFReadWrite\_nativeLoadFeatures GCC - user Area of interest (AOI) global extents: [[-2379510.413560, -2379449.157240], [-4665588.412399, -4665580.077967], [3627966.420247, 3628016.973586]]

LTFReadWrite\_nativeLoadFeatures - TODO - Convert GCC to local

LTFReadWrite\_nativeLoadFeatures - found: 0 tile(s) in the AOI out of 1

LTFReadWrite\_nativeLoadFeatures - NO TILES INTERSECT AOI getIntersectedTiles \*\*\*FUNC NOT WORKING\*\*\* use brute force method.

LTFReadWrite\_nativeLoadFeatures - computeExtents results for tiledId: [0, 0], computed local extents: [[-500, 500], [-500, 500]]

LTFReadWrite\_nativeLoadFeatures - computeExtents results for tiledId: [0, 0], computed global extents min: [-2380054.83, -4665611.83, 3627581.83], computed global extents max: [-2378904.11, -4665556.59, 3628402.07]

Feature inside AOI: index: 187: Feature id: [0:187] tile extents: [[-500, 500], [-500, 500]] feature local center: [-6.99, -0.36] global center: [-2379485.79, -4665581.22, 3627991.65] intersects: 1 contains: 1

Feature inside AOI: index: 188: Feature id: [0:188] tile extents: [[-500, 500], [-500, 500]] feature local center: [-6.99, -0.36] global center: [-2379485.79, -4665581.22, 3627991.65] intersects: 1 contains: 1

Feature inside AOI: index: 1931: Feature id: [0:1931] tile extents: [[-500, 500], [-500, 500]] feature local center: [10.15, 13.88] global center: [-2379466.82, -4665581.75, 3628003.33] intersects: 1 contains: 1

LTFReadWrite\_nativeLoadFeatures: list size: 3

LTFReadWrite\_nativeLoadFeatures: num tiles: 1, total featureCount: 3

LTFReadWrite\_nativeLoadFeatures: DONE

Components.LTF.Utilities.LTFReadWrite::loadFeatures|872 - nativeLoadFeatures - processing time: 122 msec, num features loaded: 3

Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|997 - processing Loaded LTF features.

LTFReadWrite\_nativeNextTerrainTile - processing tile id: [0, 0]

LTFReadWrite\_nativeNextTerrainTile - first feature id: [0:187]

Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1020 - LTF::loadFeatures processing tile

LTFReadWrite\_nativeGetTerrainTileIdxCol - processing tile id [0]: 0

LTFReadWrite\_nativeGetTerrainTileIdxRow - processing tile id [1]: 0

Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1027 - LTF::loadFeatures processing tile: [0,0]

Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1033 - LTF::loadFeatures processing layer

LTFReadWrite\_nativeNextFeature - currentFeatureId: [0:187]

Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1045 - LTF::loadFeatures processing feature: 187

LTFReadWrite\_nativeGetFeatureGeometryType - geometry: GEOMETRY\_CODE\_CYLINDER

Components.LTF.Utilities.LTFReadWrite::processFeature|1332 - LTF::processFeature processing featureIndex: 187, hashCodeIndex: -1185140016

LTFReadWrite\_nativeGetGeometryVextexCount featureId: [0:187], featureName: Tree Trunk

LTFReadWrite\_nativeGetGeometryVextexCount TREE

cylinder: center: local coord: [-6.99, -0.36, 712.05] global coord: [-2379751.14, -4666101.51, 3628398.96] radius: 0.12 height: 5.00

LTFReadWrite\_nativeGetGeometryVextexCount num vertices: 3

Components.LTF.Utilities.LTFReadWrite::processFeature|1378 - LTF::processFeature num geometry vertices: 3

Components.LTF.Utilities.LTFReadWrite::processFeature|1392 - center geocentric vertex [-2379751.144905152, -4666101.507823278, 3628398.9641932654] radius: 0.125 height:5.0

Components.LTF.Utilities.LTFReadWrite::processFeature|1404 - ----> geometry - processing time: 4

Components.LTF.Utilities.LTFReadWrite::processFeature|1417 - num attributes: 5

Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Wall Texture, string value: walls.png

Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Door Decal, string value: door.png

Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Window Decal, string value: window.png

Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Roof Texture, string value: roof.png

Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Foliage Texture, string value: leaves.png

Components.LTF.Utilities.LTFReadWrite::processFeature|1468 - ----> attributes - processing time: 45

Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1106 - process feature - processing time: 53 msec

LTFReadWrite\_nativeNextFeature - currentFeatureId: [0:188]

```

Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1045 - LTF::loadFeatures processing feature: 188
LTFReadWrite_nativeGetFeatureGeometryType - geometry: GEOMETRY_CODE_CYLINDER
Components.LTF.Utilities.LTFReadWrite::processFeature|1332 - LTF::processFeature processing featureIndex: 188, hashCodeIndex: -
1185140015
LTFReadWrite_nativeGetGeometryVextexCount featureId: [0:188], featureName: Tree Foliage
LTFReadWrite_nativeGetGeometryVextexCount TREE
cylinder: center: local coord: [-6.99, -0.36, 712.80] global coord: [-2379751.42, -4666102.06, 3628399.39] radius: 1.50 height: 3.50
LTFReadWrite_nativeGetGeometryVextexCount num vertices: 3
Components.LTF.Utilities.LTFReadWrite::processFeature|1378 - LTF::processFeature num geometry vertices: 3
Components.LTF.Utilities.LTFReadWrite::processFeature|1392 - center geocentric vertex [-2379751.4243996134, -4666102.055844373,
3628399.3932104274] radius: 1.5 height: 3.5
Components.LTF.Utilities.LTFReadWrite::processFeature|1404 - ----> geometry - processing time: 10
Components.LTF.Utilities.LTFReadWrite::processFeature|1417 - num attributes: 5
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Wall Texture, string value: walls.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Door Decal, string value: door.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Window Decal, string value: window.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Roof Texture, string value: roof.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Foliage Texture, string value: leaves.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1468 - ----> attributes - processing time: 57
Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1106 - process feature - processing time: 72 msec
LTFReadWrite_nativeNextFeature - currentFeatureId: [0:1931]
Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1045 - LTF::loadFeatures processing feature: 1931
LTFReadWrite_nativeGetFeatureGeometryType - geometry: GEOMETRY_CODE_PRISM
Components.LTF.Utilities.LTFReadWrite::processFeature|1332 - LTF::processFeature processing featureIndex: 1931, hashCodeIndex:
1915366054
LTFReadWrite_nativeGetGeometryVextexCount featureId: [0:1931], featureName: Building Wall
LTFReadWrite_nativeGetGeometryVextexCount BUILDING
LTFReadWrite_nativeGetGeometryVextexCount num vertices: 8
Components.LTF.Utilities.LTFReadWrite::processFeature|1351 - LTF::processFeature num geometry vertices: 8
Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 0. geocentric vertex: [ -2379489.191058226, -4665585.888029615,
3627983.4710462526 ]
Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 1. geocentric vertex: [ -2379475.1262431843, -4665593.061180326,
3627983.4710462526 ]
Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 2. geocentric vertex: [ -2379469.7548373807, -4665582.529151629,
3628000.4238694 ]
Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 3. geocentric vertex: [ -2379483.8196524223, -4665575.356000918,
3628000.4238694 ]
Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 4. geocentric vertex: [ -2379492.9176510475, -4665593.19497755,
3627989.1912750793 ]
Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 5. geocentric vertex: [ -2379478.852836006, -4665600.368128261,
3627989.1912750793 ]
Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 6. geocentric vertex: [ -2379473.4814302023, -4665589.836099563,
3628006.144098226 ]
Components.LTF.Utilities.LTFReadWrite::processFeature|1360 - 7. geocentric vertex: [ -2379487.546245244, -4665582.662948852,
3628006.144098226 ]
Components.LTF.Utilities.LTFReadWrite::processFeature|1404 - ----> geometry - processing time: 17
Components.LTF.Utilities.LTFReadWrite::processFeature|1417 - num attributes: 5
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Wall Texture, string value: walls.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Door Decal, string value: door.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Window Decal, string value: window.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Roof Texture, string value: roof.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1438 - name: Foliage Texture, string value: leaves.png
Components.LTF.Utilities.LTFReadWrite::processFeature|1468 - ----> attributes - processing time: 21
Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1106 - process feature - processing time: 41 msec
Components.LTF.Utilities.LTFReadWrite::processLoadedFeatures|1115 - process tile features - processing time: 41 msec
Components.LTF.Utilities.LTFReadWrite::loadFeatures|891 - Loaded features extents
Components.LTF.Utilities.LTFReadWrite$Extents
{
sw (-2379510.413560226, -4665588.412398719, 3627966.420246739) ne (-2379449.157240211, -4665580.077967442, 3628016.973585964)
}
rocessed: 3 features.
DONE LOADING AND PROCESSING
Aug 4, 2011 3:50:37 PM net.onesaf.ext.dpbtbdrngen.services.common.Log debug

```

```

INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mcreateCylinderDataElements_0m [1650] - ==> Feature type: CYLINDER,
hasCodeIndex: -1185140016
Aug 4, 2011 3:50:37 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mcreateCylinderDataElements_0m [1684] - LTF PRISM geom:
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Geometry
{
    type: CYLINDER
    coordType: GDC
    extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg      ne: Geodetic: lat 34.891683 lon -117.021688 Deg
    origin: Geodetic: lat 34.891405 lon -117.021965 Deg
    height: 5.0
    radius: 0.125
}
Aug 4, 2011 3:50:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mcreateCylinderDataElements_0m [1650] - ==> Feature type: CYLINDER,
hasCodeIndex: -1185140015
Aug 4, 2011 3:50:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mcreateCylinderDataElements_0m [1684] - LTF PRISM geom:
net.onesaf.ext.dpbtbrgen.services.geoscratchpad.TdbGen_Geometry
{
    type: CYLINDER
    coordType: GDC
    extents: sw: Geodetic: lat 34.891127 lon -117.022243 Deg      ne: Geodetic: lat 34.891683 lon -117.021688 Deg
    origin: Geodetic: lat 34.891405 lon -117.021965 Deg
    height: 3.5
    radius: 1.5
}
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mincorporateDataElementChanges_0m [1061] - Incorporating DataElement changes
into LTF
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mincorporateDataElementChanges_0m [1077] - processing DataElement:
LTF_0X0X0_1931
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mincorporateDataElementChanges_0m [1093] - Initial extents: sw:
Geodetic: lat 34.891315 lon -117.021975 Deg      ne: Geodetic: lat 34.891501 lon -117.021802 Deg
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mgetLabel_0m [1195] - DataElement Label: Building Wall
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mincorporateDataElementChanges_0m [1130] - Incorporate corrections for 1
feature(s), affected extents: sw: Geodetic: lat 34.891315 lon -117.021975 Deg      ne: Geodetic: lat 34.891501 lon -117.021802 Deg
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::_[1mincorporateDataElementChanges_0m [1156] - =====>
incorporateDataElementChanges EXTENTS: [Geodetic] sw: GDC: (lat: 34.89131516549544 long: -117.02197519945848 elevation: 0.0, ne:
GDC: (lat: 34.89150146842888 long: -117.02180247608342 elevation: 0.0 - [Geocetric] sw: GCC: (-2379489.191007183, -4665585.887890305,
3627983.471209689) ne: GCC: (-2379469.754770461, -4665582.529020415, 3628000.4240328353)
Components.LTF.Utilities.LTFReadWrite::update|1566 - =====> Updating LTF features.
Components.LTF.Utilities.LTFReadWrite::update|1573 - No features loaded, loading LTF features.
Components.LTF.Utilities.LTFReadWrite::loadFeatures|838 - @loadFeatures( extents )
Components.LTF.Utilities.LTFReadWrite::findDatabaseName|822 - findDatabaseName ***WARNING*** HARDCODED LTF path + name:
/work/tdbRepository/live/LTF/c7_textured/
LTFReadWrite_nativeRead - loading LTF: /work/tdbRepository/live/LTF/c7_textured/
TDB Global Extents: ll: [-2380054.833282, -4666066.162457, 3627581.828627], ur: [-2378904.112614, -4665102.254725, 3628402.066289]
DELTA extents: deltaX: 1150.720668, deltaY: 963.907732, deltaZ: 820.237662
TDB Local Extents: ll: [-500.000000, -500.000000, 0.000000], ur: [500.000000, 500.000000, 0.000000]
Computed ll & ur using transform: ll global: [-2380054.833282, -4665611.831597, 3627581.828627] ur global: [-2378904.112614, -
4665556.585584, 3628402.066289] ll error: [0.000000, 454.330860, 0.000000] ur error: [0.000000, -454.330860, 0.000000]
Components.LTF.Utilities.LTFReadWrite::loadFeatures|861 - nativeRead - processing time: 9 msec
LTFReadWrite_nativeLoadFeatures - loading LTF: /work/tdbRepository/live/LTF/c7_textured/
LTFReadWrite_nativeLoadFeatures GCC - user Area of interest (AOI) global extents: [[-2379489.191007, -2379469.754770], [-
4665585.887890, -4665582.529020], [3627983.471210, 3628000.424033]]
LTFReadWrite_nativeLoadFeatures - TODO - Convert GCC to local
LTFReadWrite_nativeLoadFeatures - found: 0 tile(s) in the AOI out of 1

```

LTFReadWrite\_nativeLoadFeatures - NO TILES INTERSECT AOI getIntersectedTiles \*\*\*FUNC NOT WORKING\*\*\* use brute force method.  
LTFReadWrite\_nativeLoadFeatures - computeExtents results for tileId: [0, 0], computed local extents: [[-500, 500], [-500, 500]]  
LTFReadWrite\_nativeLoadFeatures - computeExtents results for tileId: [0, 0], computed global extents min: [-2380054.83, -4665611.83, 3627581.83], computed global extents max: [-2378904.11, -4665556.59, 3628402.07]  
LTFReadWrite\_nativeLoadFeatures: list size: 0  
LTFReadWrite\_nativeLoadFeatures: num tiles: 1, total featureCount: 0  
LTFReadWrite\_nativeLoadFeatures: DONE  
Components.LTF.Utilities.LTFReadWrite::loadFeatures|872 - nativeLoadFeatures - processing time: 118 msec, num features loaded: 0  
Components.LTF.Utilities.LTFReadWrite::loadFeatures|899 - LTF::loadFeatures NO FEATURES LOADED  
Components.LTF.Utilities.LTFReadWrite::update|1576 - LTF num features loaded: 0  
Components.LTF.Utilities.LTFReadWrite::updateFeature|1680 - Updating feature in LTF API ...  
Components.LTF.Utilities.LTFReadWrite::updateFeature|1743 - Execute LTF attribute update.  
LTFReadWrite\_nativeUpdateTileFeatureAttributesList - Attributes from AttributeTable before update  
LTFReadWrite\_printFeatureAttributes - Concept Name: Building Wall  
LTFReadWrite\_printFeatureAttributes - 0. name: Wall Texture, value: walls.png  
LTFReadWrite\_printFeatureAttributes - 1. name: Door Decal, value: door.png  
LTFReadWrite\_printFeatureAttributes - 2. name: Window Decal, value: window.png  
LTFReadWrite\_printFeatureAttributes - 3. name: Roof Texture, value: roof.png  
LTFReadWrite\_printFeatureAttributes - 4. name: Foliage Texture, value: leaves.png  
LTFReadWrite\_nativeUpdateTileFeatureAttributesList - AttributesSet data for update  
LTFReadWrite\_printFeatureAttributeSet - Concept Name:  
LTFReadWrite\_printFeatureAttributeSet - 0. name: , value: walls.png  
LTFReadWrite\_printFeatureAttributeSet - 1. name: , value: door.png  
LTFReadWrite\_printFeatureAttributeSet - 2. name: , value: window.png  
LTFReadWrite\_printFeatureAttributeSet - 3. name: , value: roof.png  
LTFReadWrite\_printFeatureAttributeSet - 4. name: , value: leaves.png  
LTFReadWrite\_nativeUpdateTileFeatureAttributesList - Number of attributes to update: 5, Concept Name: Building Wall  
LTFReadWrite\_nativeUpdateTileFeatureAttributesList - updating attribute name: Foliage Texture, value: leaves.png  
\*\*\*ERROR\*\*\* LTFReadWrite\_nativeUpdateTileFeatureAttributesList - \*\*\*Error\*\*\* while looking for Attribute name: Foliage Texture,  
Concept name: Building Wall  
LTFReadWrite\_nativeUpdateTileFeatureAttributesList - updating attribute name: Wall Texture, value: walls.png  
LTFReadWrite\_nativeUpdateTileFeatureAttributesList - updating attribute name: Door Decal, value: door.png  
LTFReadWrite\_nativeUpdateTileFeatureAttributesList - updating attribute name: Roof Texture, value: roof.png  
LTFReadWrite\_nativeUpdateTileFeatureAttributesList - updating attribute name: Window Decal, value: window.png  
LTFReadWrite\_nativeUpdateTileFeatureAttributesList - Attributes after update  
LTFReadWrite\_printFeatureAttributes - Concept Name: Building Wall  
LTFReadWrite\_printFeatureAttributes - 0. name: Wall Texture, value: walls.png  
LTFReadWrite\_printFeatureAttributes - 1. name: Door Decal, value: door.png  
LTFReadWrite\_printFeatureAttributes - 2. name: Window Decal, value: window.png  
LTFReadWrite\_printFeatureAttributes - 3. name: Roof Texture, value: roof.png  
LTFReadWrite\_printFeatureAttributes - 4. name: Foliage Texture, value: leaves.png  
Components.LTF.Utilities.LTFReadWrite::updateFeature|1753 - \*\*\*ERROR\*\*\* TODO: Update LTF geometry. Need to implement LTF geom update.  
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log warning  
SEVERE: \_[35m\*\*\*[WARNING]\*\*\* \_[0mdpbtbrgen.services.tdbrepository.LTFApiImpl::\_[1mincorporateDataElementChanges\_[0m [1165] - LTF updated, please issue command to commit changes  
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.LTFApiImpl::\_[1mgenerateClientUpdate\_[0m [762] - =====> LTF generateClientUpdate message

```

*** xmlString *** SERIALIZER ***
<?xml version="1.0" encoding="UTF-8"?>
<ServerTargetFormatUpdate>
  <ChangeDateTime>1312487502249</ChangeDateTime>
  <ClientTargetFormat>LTF</ClientTargetFormat>
  <Description>Server Updates to LTF target format</Description>
  <UpdateList>
    <Update>
      <FeatureLabel>Building Wall</FeatureLabel>
      <FeatureId>LTF_0X0X0_1931</FeatureId>
      <FeatureType>PRISM</FeatureType>
      <GeometryList>
        <Point>
          <X>-2379489.191063474</X>

```

```

    <Y>-4665585.888039902</Y>
    <Z>3627983.471320409</Z>
  </Point>
  <Point>
    <X>-2379475.126248431</X>
    <Y>-4665593.061190614</Y>
    <Z>3627983.471320409</Z>
  </Point>
  <Point>
    <X>-2379469.7548426273</X>
    <Y>-4665582.529161916</Y>
    <Z>3628000.424143554</Z>
  </Point>
  <Point>
    <X>-2379483.819657671</X>
    <Y>-4665575.356011204</Y>
    <Z>3628000.424143554</Z>
  </Point>
  <Point>
    <X>-2379492.917656294</X>
    <Y>-4665593.194987835</Y>
    <Z>3627989.1915497966</Z>
  </Point>
  <Point>
    <X>-2379478.852841253</X>
    <Y>-4665600.368138547</Y>
    <Z>3627989.191549795</Z>
  </Point>
  <Point>
    <X>-2379473.481435449</X>
    <Y>-4665589.836109849</Y>
    <Z>3628006.144372942</Z>
  </Point>
  <Point>
    <X>-2379487.546250491</X>
    <Y>-4665582.662959138</Y>
    <Z>3628006.144372942</Z>
  </Point>
</GeometryList>
<AttributeList>
  <Attribute>
    <Name>Foliage Texture</Name>
    <Value>leaves.png</Value>
  </Attribute>
  <Attribute>
    <Name>Wall Texture</Name>
    <Value>walls.png</Value>
  </Attribute>
  <Attribute>
    <Name>Door Decal</Name>
    <Value>door.png</Value>
  </Attribute>
  <Attribute>
    <Name>Roof Texture</Name>
    <Value>roof.png</Value>
  </Attribute>
  <Attribute>
    <Name>Window Decal</Name>
    <Value>window.png</Value>
  </Attribute>
</AttributeList>
</Update>
</UpdateList>

```

</ServerTargetFormatUpdate>

Aug 4, 2011 3:53:19 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message  
INFO: dpbtdbrgen.services.tdbrepository.LTFApiImpl:.\_[1mregenerate [0m [1177] - rebuild ltf  
Components.LTF.Utilities.LTFReadWrite::rebuild|1915 - rebuild \*\*\*WARNING\*\*\* HARDCODED TDB output LTF path:  
/work/tdbRepository//live/LTF/c7\_textured\_rebuild/  
writing LTF.../work/tdbRepository//live/LTF/c7\_textured\_rebuild/  
Optimizer processed tile [0, 0]Created new terrain tile directory at: /work/tdbRepository//live/LTF/c7\_textured\_rebuild/Row\_0/Tile\_0\_0  
Storing feature tile at path: /work/tdbRepository//live/LTF/c7\_textured\_rebuild/Row\_0/Tile\_0\_0  
Storing feature BVH tree at path: /work/tdbRepository//live/LTF/c7\_textured\_rebuild/Row\_0/Tile\_0\_0/VolumeFeatureTree.gz  
Storing feature attribution table at path: /work/tdbRepository//live/LTF/c7\_textured\_rebuild/Row\_0/Tile\_0\_0/VolumeFeatureAttribution.gz  
Storing feature tile at path: /work/tdbRepository//live/LTF/c7\_textured\_rebuild/Row\_0/Tile\_0\_0  
Storing feature tile at path: /work/tdbRepository//live/LTF/c7\_textured\_rebuild/Row\_0/Tile\_0\_0  
Stored features  
Stored grids  
Upgraded tile [0, 0]  
Saved database to /work/tdbRepository//live/LTF/c7\_textured\_rebuild/

---

TIME: Stopping at Thu Aug 4 16:35:51 EDT 2011

## FLT client log - fltApiServer-aug04-5.log

Log shows OpenSceneGraph / OpenFlight calls performed to regenerate local OTF.

TIME: Running on lvcServer.localdomain at Thu Aug 4 15:35:23 EDT 2011 - net.onesaf.ext.dpbtdbrgen.services.tdbrepository.FLTApiServer -

### START CLASSPATH

/work/jdk1.6.0\_10/lib/dt.jar:/work/jdk1.6.0\_10/lib/tools.jar:/work/sp\_onesaf2\_1/SWR/lib/services/dpbtdbrgen.jar:/work/sp\_onesaf2\_1/SWR/external/FLTApi/FLTReadWrite.jar:/work/sp\_onesaf2\_1/SWR/external/LTFApi/LTFReadWrite.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/srm.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/aterm-java-1.6.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-test.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-rules.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-query.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-pellint.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapi.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-modularity.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-jena.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-explanation.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-el.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-dig.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-datatypes.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-core.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/xercesImpl-2.7.1.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/wstx-asl-3.2.9.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/tax-api-1.0.1.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/slf4j-log4j12-1.5.6.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/slf4j-api-1.5.6.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/lucene-core-2.3.1.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/log4j-1.2.13.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/junit-4.5.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/jena-2.6.2-test.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/jena-2.6.2.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/iri-0.7.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/icu4j-3.4.4.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jena/arq-2.8.1.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/jetty/jetty.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/xsdlib/xsdlib.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/xsdlib/relaxngDatatype.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapi.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/owlapi/owlapi-bin.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapiv3.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/pellet-2.1.1/lib/owlapiv3/owlapi-bin.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/gt2-coverage-2.4.4.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/gt2-gml-2.4.4.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/gt2-main-2.4.4.jar:/work/sp\_onesaf2\_1/SWR/external/PilotTestExternal/jts-1.8.jar:/work/sp\_onesaf2\_1/SWR/external/geotransform/geotransform\_devel.jar:/work/sp\_onesaf2\_1/SWR/external/jetty/servlet-api-2.5-6.0.0rc2.jar:/work/sp\_onesaf2\_1/SWR/external/jetty/jetty-util-6.0.0rc2.jar:/work/sp\_onesaf2\_1/SWR/external/jetty/jetty-6.0.0rc2.jar:/work/sp\_onesaf2\_1/SWR/external/scripting/rhino1\_6R7.jar:/work/sp\_onesaf2\_1/SWR/external/scripting/jython.jar:/work/sp\_onesaf2\_1/SWR/external/scripting/js-engine.jar:/work/sp\_onesaf2\_1/SWR/external/scripting/jython-engine.jar:/work/sp\_onesaf2\_1/SWR/external/scripting/script-api.jar:/work/sp\_onesaf2\_1/SWR/external/xmlbeans/DGMsgMappings.jar:/work/sp\_onesaf2\_1/SWR/external/xmlbeans/xmlbeans-2.3.0/lib/xbean.jar:/work/sp\_onesaf2\_1/SWR/external/truezip/truezip.jar:/work/sp\_onesaf2\_1/SWR/external/jmx/jmxremote\_optional.jar:/work/sp\_onesaf2\_1/SWR/external/jmx/jmxremote.jar:/work/sp\_onesaf2\_1/SWR/external/jmx/jmxtools.jar:/work/sp\_onesaf2\_1/SWR/external/common-s-math/commons-math-1.1.jar:/work/sp\_onesaf2\_1/SWR/external/poi/poi-2.5.1-final-20040804.jar:/work/sp\_onesaf2\_1/SWR/external/java3d/vecmath.jar:/work/sp\_onesaf2\_1/SWR/external/java3d/j3dcore.jar:/work/sp\_onesaf2\_1/SWR/external/jrms/classes.jar:/work/sp\_onesaf2\_1/SWR/external/prefuse/prefuse.jar:/work/sp\_onesaf2\_1/SWR/external/prefuse/prefuse.jar:/work/sp\_onesaf2\_1/SWR/external/skinlf/skinlf.jar:/work/sp\_onesaf2\_1/SWR/external/javahelp/lib/jhall.jar:/work/sp\_onesaf2\_1/SWR/external/xerces/xml-apis.jar:/work/sp\_onesaf2\_1/SWR/external/xerces/xercesImpl.jar:/work/sp\_onesaf2\_1/SWR/external/jaxb/lib/jaxb-all.jar:/work/sp\_onesaf2\_1/SWR/external/infobus/infobus.jar:/work/sp\_onesaf2\_1/SWR/external/mckoi1.0.2/mckoidb.jar:/work/sp\_onesaf2\_1/SWR/external/xalan2/xalan.jar:/work/sp\_onesaf2\_1/SWR/lib/services/sys/proploader.jar:/work/sp\_onesaf2\_1/SWR/external/log4j/log4j-1.2.8.jar:/work/sp\_onesaf2\_1/SWR/lib/services/sys/logger2.jar:/work/sp\_onesaf2\_1/SWR/lib/services/sys/init.jar:/work/sp\_onesaf2\_1/SWR/lib/s



```

ervices/sys/enum.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/cachemgr.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/ext.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/repository.jar:/work/sp_onesaf2_1/SWR/lib/services/gui/support/support.jar:/work/sp_onesaf2_1/SWR/lib/services/gui/tool/resources.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/timer.jar:/work/sp_onesaf2_1/SWR/lib/services/data/sax.jar:/work/sp_onesaf2_1/SWR/lib/services/data/dom.jar:/work/sp_onesaf2_1/SWR/lib/services/data/encodable.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/capability.jar:/work/sp_onesaf2_1/SWR/lib/services/data/dm/ecs.jar:/work/sp_onesaf2_1/SWR/lib/ERC/ERCEvents.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/erctypes.jar:/work/sp_onesaf2_1/SWR/lib/services/model/modelsengine.jar:/work/sp_onesaf2_1/SWR/lib/models/models.jar:/work/sp_onesaf2_1/SWR/lib/services/sys/composition.jar:/work/sp_onesaf2_1/SWR/classes
END CLASSPAT
rmi://localhost/FLTApiService ready.
osgJniFltApi.FLTReadWrite::initExtRefBuildingMetadata|1621 - loading FLT External Reference building model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeMetadata|1649 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeSpanMetadata|1676 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefTreeMetadata|1739 - loading FLT External Reference tree model data
osgJniFltApi.FLTReadWrite::initExtRefBuildingMetadata|1621 - loading FLT External Reference building model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeMetadata|1649 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeSpanMetadata|1676 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefTreeMetadata|1739 - loading FLT External Reference tree model data
Aug 4, 2011 3:50:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.FLTApiImpl::[_1mreadFeatures_0m [784] - FLTApi - Implement extent on loadModels ... CACHE extents
Aug 4, 2011 3:50:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log info
INFO: dpbtbrgen.services.geoscratchpad.LayerAbstract::[_1m<init>_0m [60] - Layer Type: FeatureContainer
Aug 4, 2011 3:50:38 PM net.onesaf.ext.dpbtbrgen.services.common.Log debug
INFO: dpbtbrgen.services.tdbrepository.FLTApiImpl::[_1mreadFeatures_0m [808] - =====> Looking for FLT features of type: EXTREF_MODEL, from area =====> [Geodetic] sw: Geodetic: lat 34.891128 lon -117.022169 Deg, ne: Geodetic: lat 34.891683 lon -117.021614 Deg
osgJniFltApi.FLTReadWrite::loadModels|2288 - loadModels(swLat, swLon, neLat, neLon)
osgJniFltApi.FLTReadWrite::findDatabaseName|2204 - findDatabaseName looking for FLT TDB for extents: SW lat: 34.89112778447567, lon: -117.02216947777782 NE lat: 34.89168334003122, lon: -117.02161392222223
osgJniFltApi.FLTReadWrite::findDatabaseName|2223 - findDatabaseName ***WARNING*** HARDCODED FLT path + name: /work/tdbRepository/virtual/FLT/myNtc/master.ftl
osgJniFltApi.FLTReadWrite::loadTdbModels|2344 -
===== loadTdbModels tdb: /work/tdbRepository/virtual/FLT/myNtc/master.ftl
extents: SW lat: 34.89112778447567, lon: -117.02216947777782 NE lat: 34.89168334003122, lon: -117.02161392222223

osgJniFltApi.FLTReadWrite::isDataLoaded|2880 - ***WARNING*** Partial implementation, only checking for loadedModelsExtents == null
osgJniFltApi.FLTReadWrite::isDataLoaded|2884 - No extents loaded
FLTReadWrite_nativeRead - loading FLT: /work/tdbRepository/virtual/FLT/myNtc/master.ftl
TDB Origin latitude: 34.8662, longitude: -117.066
osgJniFltApi.FLTReadWrite::loadTdbModels|2369 - nativeRead - processing time: 39745
FLTReadWrite_nativeLoadModels - consider Geodetic Extents: SW [ Latitude: 34.8911, Longitude: -117.022 ] - NE [ Latitude: 34.8917, Longitude: -117.022 ]
FLTReadWrite_nativeLoadModels - loading FLT: /work/tdbRepository/virtual/FLT/myNtc/master.ftl
FindNodeVisitor looking for node name: 012f55a3-4884-504b-b32c-4d572fddff661.ftl
FindNodeVisitor looking for node name: 0339222e-5222-7941-8261-9554a706e40b1.ftl
FindNodeVisitor looking for node name: 03f4b481-5a88-d442-9311-524fff1a7d61.ftl
FindNodeVisitor looking for node name: 07e90348-7620-b24a-b19f-4c8c38e223591.ftl
FindNodeVisitor looking for node name: 0c3ff443-4316-2049-a844-5ebb952c4a411.ftl
FindNodeVisitor looking for node name: 10ed046f-f1af-7048-ba78-145e676e46821.ftl
FindNodeVisitor looking for node name: 131fd320-f40e-694e-8d43-d4ac62b3aeff1.ftl
FindNodeVisitor looking for node name: 1415fd49-2384-174f-b739-c3668968d24c1.ftl
FindNodeVisitor looking for node name: 18c011de-4938-f84b-88e6-183cde64748f1.ftl
FindNodeVisitor looking for node name: 19bdf28-7def-dd42-aeaa-35c0590d60c31.ftl
FindNodeVisitor looking for node name: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51.ftl
Found Match ProxyNode - name: num fileNames: 1 fileName: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51.ftl
FLTReadWrite_nativeLoadModels - saving model: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51.ftl
ModelInfo::collectVertices collecting vertices on model type: 0
EXTREF_MODE - MatrixTransform - translation: 42546.234375, 188283.390625, 678.746643
ModelInfo::collectVertices, done num vertices: 1
FindNodeVisitor looking for node name: 26a82fb3-70cd-7b47-b5b4-34b00ed009d21.ftl

```

FindNodeVisitor looking for node name: 2c3f7106-8f5e-2448-b1b5-843f17a3454b1.fl  
FindNodeVisitor looking for node name: 3095a0c3-92b2-f443-9aed-9d44d32620791.fl  
FindNodeVisitor looking for node name: 41b87deb-1af3-eb4a-9ebf-50e2eb9e87631.fl  
FindNodeVisitor looking for node name: 41c546cf-56fe-7644-9829-e5f6026463a01.fl  
FindNodeVisitor looking for node name: 44177336-4335-c348-9a5e-c3d3c30262ae1.fl  
FindNodeVisitor looking for node name: 46607a43-acaf-6240-b2d7-531b227f017a1.fl  
FindNodeVisitor looking for node name: 4c6d9b31-9def-ab4c-aaa1-804cb27b0d571.fl  
FindNodeVisitor looking for node name: 562e01b9-3b7f-b247-9983-9c1bb74b6de11.fl  
FindNodeVisitor looking for node name: 5a530d24-7514-5742-ae37-2ffb14fcfd661.fl  
FindNodeVisitor looking for node name: 5ce40213-3fff-a147-9886-471bad595ed11.fl  
FindNodeVisitor looking for node name: 62573e73-721b-9b49-b066-f8638357e1841.fl  
FindNodeVisitor looking for node name: 6e559e6b-94eb-8f45-97f6-1062fe2d96b41.fl  
FindNodeVisitor looking for node name: 6e7117b2-3692-7940-bc04-f3246b3e23ad1.fl  
FindNodeVisitor looking for node name: 708ded62-d6be-cc45-becc-5d7db0ebe23c1.fl  
FindNodeVisitor looking for node name: 72ea1fa8-0ec8-fd44-8661-bff292521e8f1.fl  
FindNodeVisitor looking for node name: 787f30cb-e741-644a-a4e3-07f51335dfd51.fl  
FindNodeVisitor looking for node name: 79094a52-3e3c-1449-a6c9-72dbf6661d761.fl  
FindNodeVisitor looking for node name: 882b67f4-5200-d847-a231-10d1ccdd2e901.fl  
FindNodeVisitor looking for node name: 8a1b7abf-6a72-0f4a-8482-5662e3c53bc71.fl  
FindNodeVisitor looking for node name: 8c1c01d1-b194-4a48-ba18-854b64aa0f5f1.fl  
FindNodeVisitor looking for node name: 8fba887-6634-d048-9f2e-a53849707f4e1.fl  
FindNodeVisitor looking for node name: 91d18f14-e79a-784e-9958-1a1b5bab2f2b1.fl  
FindNodeVisitor looking for node name: 9b6e28ec-ed56-b241-8d57-1d7f221876c11.fl  
FindNodeVisitor looking for node name: 9c0c588d-0365-8e42-971b-361a310bf5441.fl  
FindNodeVisitor looking for node name: 9fa20c77-b054-a740-a80a-f3a53ce0e8fa1.fl  
FindNodeVisitor looking for node name: a84202ed-818a-2748-b465-103801784b661.fl  
FindNodeVisitor looking for node name: abec9566-f5af-a345-9bdd-8feccf05f9ee1.fl  
FindNodeVisitor looking for node name: ace4745e-4ee6-2a4d-92b5-e186d143d7cd1.fl  
FindNodeVisitor looking for node name: b08c6045-0069-c042-9eeb-8d90db04e00a1.fl  
FindNodeVisitor looking for node name: b10b753b-6242-884b-930b-0f8819a1faf91.fl  
FindNodeVisitor looking for node name: b4a92cae-f6c6-7b44-8dca-23878a1e44861.fl  
FindNodeVisitor looking for node name: bc79cc5d-679d-fb46-b21c-c17c2463e2031.fl  
FindNodeVisitor looking for node name: bf38438c-66db-504a-8c1f-8cfa793b2d9d1.fl  
FindNodeVisitor looking for node name: c277eb85-601b-dd45-9edf-b71c064944981.fl  
FindNodeVisitor looking for node name: c564c5aa-2c35-974e-baa0-d05638881f191.fl  
FindNodeVisitor looking for node name: ce449785-b2aa-894a-b6b4-adc85b60f37f1.fl  
FindNodeVisitor looking for node name: cf4b25d1-43b0-7d41-a2e2-ede6082c48d21.fl  
FindNodeVisitor looking for node name: d40b7c6f-7858-6847-9871-790e0d67acd1.fl  
FindNodeVisitor looking for node name: d4642180-fae5-2f45-956a-40ea18a02fd41.fl  
FindNodeVisitor looking for node name: d57f08fb-4e55-d14c-8bd2-637a095315361.fl  
FindNodeVisitor looking for node name: d5cca06e-294d-c246-825c-fe4d31abb3191.fl  
FindNodeVisitor looking for node name: e0b81e92-0f7d-a34a-93b2-1177aee6e6761.fl  
FindNodeVisitor looking for node name: e1f7b143-e8d8-bd4f-8184-388e054be02e1.fl  
FindNodeVisitor looking for node name: e6f709c6-cc1b-7f46-a6fd-2cbd8b79ae311.fl  
FindNodeVisitor looking for node name: e8803655-36b5-064c-b2c2-fc074232595e1.fl  
FindNodeVisitor looking for node name: e88851ba-182f-574b-ab24-119ad3a9c7b11.fl  
FindNodeVisitor looking for node name: ec41ec34-f3e7-2647-9b5a-0e5fedab8c5d1.fl  
FindNodeVisitor looking for node name: f29d9f00-f7d8-e543-afc2-9c0f2ccdc8701.fl  
FindNodeVisitor looking for node name: f80ccc1e-3818-944b-b1c0-ccc51c0fd7701.fl  
FindNodeVisitor looking for node name: fbdeba55-c6d2-b044-89bd-5cdc6a4c9ab61.fl  
FindNodeVisitor looking for node name: 261bridge.fl  
Found Match ProxyNode - name: num fileNames: 1 fileName: 261bridge.fl  
FLTRedWrite\_nativeLoadModels - saving model: 261bridge.fl  
ModelInfo::collectVertices collecting vertices on model type: 0  
EXTREF\_MODE - MatrixTransform - translation: 42626.855469, 190031.562500, 613.630371  
ModelInfo::collectVertices, done num vertices: 1  
FindNodeVisitor looking for node name: 261Bridge-Span1.fl  
FindNodeVisitor looking for node name: 261Bridge-Span2.fl  
FindNodeVisitor looking for node name: 261Bridge-Span3.fl  
FindNodeVisitor looking for node name: 261Bridge-Span4.fl  
FindNodeVisitor looking for node name: 261Bridge-Span5.fl  
FindNodeVisitor looking for node name: 261Bridge-Span6.fl  
FindNodeVisitor looking for node name: 261Bridge-Span7.fl

FindNodeVisitor looking for node name: 261Bridge-Span8.fl  
FindNodeVisitor looking for node name: 261Bridge-Span9.fl  
FindNodeVisitor looking for node name: 261Bridge-Span10.fl  
FindNodeVisitor looking for node name: 261Bridge-Span11.fl  
FindNodeVisitor looking for node name: 261Bridge-Span12.fl  
FindNodeVisitor looking for node name: 261Bridge-Span-Destroyed.fl  
FindNodeVisitor looking for node name: queenpalm.fl  
FindNodeVisitor looking for node name: 012f5a3-4884-504b-b32c-4d572fddff661.fl  
FindNodeVisitor looking for node name: 0339222e-5222-7941-8261-9554a706e40b1.fl  
FindNodeVisitor looking for node name: 03f4b481-5a88-d442-9311-524fffb1a7d61.fl  
FindNodeVisitor looking for node name: 07e90348-7620-b24a-b19f-4c8c38e223591.fl  
FindNodeVisitor looking for node name: 0c3ff443-4316-2049-a844-5ebb952c4a411.fl  
FindNodeVisitor looking for node name: 10ed046f-f1af-7048-ba78-145e676e46821.fl  
FindNodeVisitor looking for node name: 131fd320-f40e-694e-8d43-d4ac62b3aeff1.fl  
FindNodeVisitor looking for node name: 1415fd49-2384-174f-b739-c3668968d24c1.fl  
FindNodeVisitor looking for node name: 18c011de-4938-f84b-88e6-183cde64748f1.fl  
FindNodeVisitor looking for node name: 19bdf28-7def-dd42-aeaa-35c0590d60c31.fl  
FindNodeVisitor looking for node name: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51.fl  
Found Match ProxyNode - name: num fileNames: 1 fileName: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51.fl  
FLTReadWrite\_nativeLoadModels - saving model: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51.fl  
ModelInfo::collectVertices collecting vertices on model type: 0  
EXTREF\_MODE - MatrixTransform - translation: 42546.234375, 188283.390625, 678.746643  
ModelInfo::collectVertices, done num vertices: 1  
FindNodeVisitor looking for node name: 26a82fb3-70cd-7b47-b5b4-34b00ed009d21.fl  
FindNodeVisitor looking for node name: 2c3f7106-8f5e-2448-b1b5-843f17a3454b1.fl  
FindNodeVisitor looking for node name: 3095a0c3-92b2-f443-9aed-9d44d32620791.fl  
FindNodeVisitor looking for node name: 41b87deb-1af3-eb4a-9ebf-50e2eb9e87631.fl  
FindNodeVisitor looking for node name: 41c546cf-56fe-7644-9829-e5f6026463a01.fl  
FindNodeVisitor looking for node name: 44177336-4335-c348-9a5e-c3d3c30262ae1.fl  
FindNodeVisitor looking for node name: 46607a43-acaf-6240-b2d7-531b227f017a1.fl  
FindNodeVisitor looking for node name: 4c6d9b31-9def-ab4c-aaa1-804cb27b0d571.fl  
FindNodeVisitor looking for node name: 562e01b9-3b7f-b247-9983-9c1bb74b6de11.fl  
FindNodeVisitor looking for node name: 5a530d24-7514-5742-ae37-2ffb14fcfd661.fl  
FindNodeVisitor looking for node name: 5ce40213-3fff-a147-9886-471bad595ed11.fl  
FindNodeVisitor looking for node name: 62573e73-721b-9b49-b066-f8638357e1841.fl  
FindNodeVisitor looking for node name: 6e559e6b-94eb-8f45-97f6-1062fc2d96b41.fl  
FindNodeVisitor looking for node name: 6e7117b2-3692-7940-bc04-f3246b3e23ad1.fl  
FindNodeVisitor looking for node name: 708ded62-d6be-cc45-becc-5d7db0ebe23c1.fl  
FindNodeVisitor looking for node name: 72ea1fa8-0ec8-fd44-8661-bff292521e8f1.fl  
FindNodeVisitor looking for node name: 787f30cb-e741-644a-a4e3-07f51335dfd51.fl  
FindNodeVisitor looking for node name: 79094a52-3e3c-1449-a6c9-72dbf6661d761.fl  
FindNodeVisitor looking for node name: 882b67f4-5200-d847-a231-10d1ccdd2e901.fl  
FindNodeVisitor looking for node name: 8a1b7abf-6a72-0f4a-8482-5662e3c53bc71.fl  
FindNodeVisitor looking for node name: 8c1c01d1-b194-4a48-ba18-854b64aa0f5f1.fl  
FindNodeVisitor looking for node name: 8fba887-6634-d048-9f2e-a53849707f4e1.fl  
FindNodeVisitor looking for node name: 91d18f14-e79a-784e-9958-1a1b5bab2f2b1.fl  
FindNodeVisitor looking for node name: 9b6e28ec-ed56-b241-8d57-1d7f221876c11.fl  
FindNodeVisitor looking for node name: 9c0c588d-0365-8e42-971b-361a310bf5441.fl  
FindNodeVisitor looking for node name: 9fa20c77-b054-a740-a80a-f3a53ce0e8fa1.fl  
FindNodeVisitor looking for node name: a84202ed-818a-2748-b465-103801784b661.fl  
FindNodeVisitor looking for node name: abec9566-f5af-a345-9bdd-8fccc05f9ee1.fl  
FindNodeVisitor looking for node name: ace4745e-4ee6-2a4d-92b5-e186d143d7cd1.fl  
FindNodeVisitor looking for node name: b08c6045-0069-c042-9eeb-8d90db04e00a1.fl  
FindNodeVisitor looking for node name: b10b753b-6242-884b-930b-0f8819a1faf91.fl  
FindNodeVisitor looking for node name: b4a92cae-f6c6-7b44-8dca-23878a1e44861.fl  
FindNodeVisitor looking for node name: bc79cc5d-679d-fb46-b21c-c17c2463e2031.fl  
FindNodeVisitor looking for node name: bf38438c-66db-504a-8c1f-8cfa793b2d9d1.fl  
FindNodeVisitor looking for node name: c277eb85-601b-dd45-9edf-b71c064944981.fl  
FindNodeVisitor looking for node name: c564c5aa-2c35-974e-baa0-d05638881f191.fl  
FindNodeVisitor looking for node name: ce449785-b2aa-894a-b6b4-adc85b60f37f1.fl  
FindNodeVisitor looking for node name: cf4b25d1-43b0-7d41-a2e2-ede6082c48d21.fl  
FindNodeVisitor looking for node name: d40b7c6f-7858-6847-9871-790e0d67acdc1.fl  
FindNodeVisitor looking for node name: d4642180-fae5-2f45-956a-40ea18a02fd41.fl

FindNodeVisitor looking for node name: d57f08fb-4e55-d14c-8bd2-637a095315361.fl  
 FindNodeVisitor looking for node name: d5cca06e-294d-c246-825c-fe4d31abb3191.fl  
 FindNodeVisitor looking for node name: e0b81e92-0f7d-a34a-93b2-1177aee6e6761.fl  
 FindNodeVisitor looking for node name: e1f7b143-e8d8-bd4f-8184-388e054be02e1.fl  
 FindNodeVisitor looking for node name: e6f709c6-cc1b-7f46-a6fd-2cbd8b79ae311.fl  
 FindNodeVisitor looking for node name: e8803655-36b5-064c-b2c2-fc074232595e1.fl  
 FindNodeVisitor looking for node name: e88851ba-182f-574b-ab24-119ad3a9c7b11.fl  
 FindNodeVisitor looking for node name: ec41ec34-f3e7-2647-9b5a-0e5fedab8c5d1.fl  
 FindNodeVisitor looking for node name: f29d9f00-f7d8-e543-afc2-9c0f2ccdc8701.fl  
 FindNodeVisitor looking for node name: f80ccc1e-3818-944b-b1c0-ccc51c0fd7701.fl  
 FindNodeVisitor looking for node name: fbdeba55-c6d2-b044-89bd-5cdc6a4c9ab61.fl  
 FindNodeVisitor looking for node name: 261bridge.fl  
 Found Match ProxyNode - name: num fileNames: 1 fileName: 261bridge.fl  
 FLTRedWrite\_nativeLoadModels - saving model: 261bridge.fl  
 ModelInfo::collectVertices collecting vertices on model type: 0  
 EXTREF\_MODE - MatrixTransform - translation: 42626.855469, 190031.562500, 613.630371  
 ModelInfo::collectVertices, done num vertices: 1  
 FindNodeVisitor looking for node name: 261Bridge-Span1.fl  
 FindNodeVisitor looking for node name: 261Bridge-Span2.fl  
 FindNodeVisitor looking for node name: 261Bridge-Span3.fl  
 FindNodeVisitor looking for node name: 261Bridge-Span4.fl  
 FindNodeVisitor looking for node name: 261Bridge-Span5.fl  
 FindNodeVisitor looking for node name: 261Bridge-Span6.fl  
 FindNodeVisitor looking for node name: 261Bridge-Span7.fl  
 FindNodeVisitor looking for node name: 261Bridge-Span8.fl  
 FindNodeVisitor looking for node name: 261Bridge-Span9.fl  
 FindNodeVisitor looking for node name: 261Bridge-Span10.fl  
 FindNodeVisitor looking for node name: 261Bridge-Span11.fl  
 FindNodeVisitor looking for node name: 261Bridge-Span12.fl  
 FindNodeVisitor looking for node name: 261Bridge-Span-Destroyed.fl  
 FindNodeVisitor looking for node name: queenpalm.fl  
 FLTRedWrite\_nativeLoadModels - done collecting models  
 FLTRedWrite\_nativeLoadModels - cache model - model type: 0, name: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51.fl, modelHashCodeIndex: -194687986, vertex count: 1  
 FLTRedWrite\_nativeLoadModels: DONE. Found 4 model(s).  
 osgJniFltApi.FLTRedWrite::loadTdbModels|2377 - nativeLoadModels - processing time: 159  
 Header: loc - latitude: 34.8662, longitude: -117.066  
 Header: loc - latitude: 34.8662, longitude: -117.066  
 osgJniFltApi.FLTRedWrite::getTdbOrigin|2505 - FLT TDB UTM origin - easting: 493959.899109236, northing: 3858210.9854782447, zone: 11.0  
 osgJniFltApi.FLTRedWrite::loadTdbModels|2410 - FLT::loadTdbModels processing tile  
 osgJniFltApi.FLTRedWrite::loadTdbModels|2417 - FLT::loadTdbModels processing tile: [0,0]  
 osgJniFltApi.FLTRedWrite::loadTdbModels|2426 - FLT::loadTdbModels processing model hashcode index: -5941746916707185650  
 nativeGetModelType - model type: 0  
 osgJniFltApi.FLTRedWrite::processModel|2556 - FLT::processModel processing nameHashCodeIndex: -5941746916707185650  
 osgJniFltApi.FLTRedWrite::processExtRefModel|2587 - FLT::processExtRefModel processing nameHashCodeIndex: -5941746916707185650  
 osgJniFltApi.FLTRedWrite::processExtRefModel|2641 - FLT vertex# 0 - UTM: [ 536506.133484236, 4046494.3761032447, 678.7466430664062 ]  
 FLTRedWrite\_nativeGetModelExternalRefernceFilename - filename: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51.fl  
 osgJniFltApi.FLTRedWrite::processExtRefModel|2665 - modelName: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51.fl, listOfAttributes size: 5  
 osgJniFltApi.FLTRedWrite::processExtRefModel|2674 - FLT model orientation angle: 0.0  
 osgJniFltApi.FLTRedWrite::processExtRefModel|2681 - listOfAttributes size: 6  
 osgJniFltApi.FLTRedWrite::processExtRefModel|2693 - ----> geometry - processing time: 10  
 osgJniFltApi.FLTRedWrite::loadTdbModels|2446 - process model - processing time: 111  
 osgJniFltApi.FLTRedWrite::loadTdbModels|2426 - FLT::loadTdbModels processing model hashcode index: 8274118836400194277  
 nativeGetModelType - model type: 0  
 osgJniFltApi.FLTRedWrite::processModel|2556 - FLT::processModel processing nameHashCodeIndex: 8274118836400194277  
 osgJniFltApi.FLTRedWrite::processExtRefModel|2587 - FLT::processExtRefModel processing nameHashCodeIndex: 8274118836400194277  
 osgJniFltApi.FLTRedWrite::processExtRefModel|2641 - FLT vertex# 0 - UTM: [ 536586.754577986, 4048242.5479782447, 613.63037109375 ]  
 FLTRedWrite\_nativeGetModelExternalRefernceFilename - filename: 261bridge.fl  
 osgJniFltApi.FLTRedWrite::processExtRefModel|2665 - modelName: 261bridge.fl, listOfAttributes size: 4  
 osgJniFltApi.FLTRedWrite::processExtRefModel|2674 - FLT model orientation angle: 36.03080394384989

```
osgJniFltApi.FLTReadWrite::processExtRefModel|2681 - listOfAttributes size: 5
osgJniFltApi.FLTReadWrite::processExtRefModel|2693 - -----> geometry - processing time: 1
osgJniFltApi.FLTReadWrite::loadTdbModels|2446 - process model - processing time: 2
nativeHasMoreModels, No more models.
osgJniFltApi.FLTReadWrite::loadTdbModels|2459 - process tile models - processing time: 3
osgJniFltApi.FLTReadWrite::loadTdbModels|2463 -
```

====> DONE - loadedModelsExtents

EXTENTS

```
origin: latitude: 34.89112778447567 longitude: -117.02216947777782 elevation: 0.0
sw: latitude: 34.89112778447567 longitude: -117.02216947777782 elevation: 0.0
ne: latitude: 34.89168334003122 longitude: -117.02161392222223 elevation: 0.0
```

```
Aug 4, 2011 3:51:18 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_[1mreadFeatures_[0m [825] - Processing EXTREF_MODEL
```

```
Aug 4, 2011 3:51:18 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_[1mcreateExtRefModelDataElements_[0m [878] - Creating EXTREF_MODEL model
num: 0, External Ref code index; -5941746916707185650
```

```
Aug 4, 2011 3:51:18 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_[1mextractModelGeometry_[0m [1061] - Convert geometry from FLT to DataElement.
```

```
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_[1mlookupRmiOntologyRepositoryManagerService_[0m [136] - =====>
Connecting to OntologyRepositoryManager service
```

```
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.TdbApi::_[1mlookupRmiOntologyRepositoryManagerService_[0m [138] - =====>
ontologyManagerRmiInterface initialized.
```

```
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_[1mcreateExtRefModelDataElements_[0m [938] -
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.DataElement_FLT
```

```
{
  [label] AL015
  [format] FLT
  [unique_id] FLT_0X0_-5941746916707185650
  [extents] ...
  sw: Geodetic: lat 36.562908 lon -116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
  [geometry] ...
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen_Geometry
{
  type: EXTREF_MODEL
  coordType: GDC
  extents: sw: Geodetic: lat 36.562908 lon -116.592309 Deg      ne: Geodetic: lat 36.563464 lon -116.591753 Deg
  filename: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51.flit
  origin: Geodetic: lat 36.563186 lon -116.592031 Deg
  aoo: 0.0
}
  [attributes] ...
net.onesaf.ext.dpbtbrngen.services.geoscratchpad.TdbGen_Attributes
{
  Attribute - type: class java.lang.Double, name: WID, value: 10.0
  Attribute - type: class java.lang.Double, name: HGT, value: 4.0
  Attribute - type: class java.lang.String, name: Label, value: AL015
  Attribute - type: class java.lang.Double, name: AOO, value: 0.0
  Attribute - type: class java.lang.Integer, name: EXS, value: 28
  Attribute - type: class java.lang.Double, name: LNT, value: 10.0
}
  ontology class info: namespace: http://localhost/ontologies/TDBVirtualFLT.owl#, name: FLTExtRefModelBuilding
}
```

```
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtbrngen.services.common.Log fine
```

```

INFO: dpbtdbrgen.services.tdbrepository.FLTApiImpl::_[1mcreateExtRefModelDataElements_]0m [878] - Creating EXTREF_MODEL model
num: 1, External Ref code index; 8274118836400194277
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtdbrgen.services.common.Log fine
INFO: dpbtdbrgen.services.tdbrepository.FLTApiImpl::_[1mextractModelGeometry_]0m [1061] - Convert geometry from FLT to DataElement.
Aug 4, 2011 3:51:22 PM net.onesaf.ext.dpbtdbrgen.services.common.Log debug
INFO: dpbtdbrgen.services.tdbrepository.FLTApiImpl::_[1mcreateExtRefModelDataElements_]0m [938] -
net.onesaf.ext.dpbtdbrgen.services.geoscratchpad.DataElement_FLT
{
    [label] AQ040
    [format] FLT
    [unique_id] FLT_0X0_8274118836400194277
    [extents] ...
    sw: Geodetic: lat 36.578665 lon -116.591325 Deg      ne: Geodetic: lat 36.579220 lon -116.590769 Deg
    [geometry] ...
net.onesaf.ext.dpbtdbrgen.services.geoscratchpad.TdbGen_Geometry
{
    type: EXTREF_MODEL
    coordType: GDC
    extents: sw: Geodetic: lat 36.578665 lon -116.591325 Deg      ne: Geodetic: lat 36.579220 lon -116.590769 Deg
    filename: 261bridge.flt
    origin: Geodetic: lat 36.578942 lon -116.591047 Deg
    aoo: 36.03080394384989
}
    [attributes] ...
net.onesaf.ext.dpbtdbrgen.services.geoscratchpad.TdbGen_Attributes
{
    Attribute - type: class java.lang.Double, name: WID, value: 12.0
    Attribute - type: class java.lang.Integer, name: NOS, value: 12
    Attribute - type: class java.lang.String, name: Label, value: AQ040
    Attribute - type: class java.lang.Double, name: AOO, value: 36.03080394384989
    Attribute - type: class java.lang.Integer, name: EXS, value: 28
}
    ontology class info: namespace: http://localhost/ontologies/TDBVirtualFLT.owl#, name: FLTExtRefModelBridge
}

```

```

Aug 4, 2011 3:51:26 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation
SEVERE: [35m***[LIMITATION]***_0mdpbtbrgen.services.tdbrepository.FLTApiImpl::_[1mgetTDBName_]0m [2581] - TEMP
Hardcoded FLT name: myNtc
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation
SEVERE: [35m***[LIMITATION]***_0mdpbtbrgen.services.tdbrepository.FLTApiImpl::_[1mgetTDBName_]0m [2581] - TEMP
Hardcoded FLT name: myNtc
osgJniFltApi.FLTReadWrite::initExtRefBuildingMetadata|1621 - loading FLT External Reference building model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeMetadata|1649 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeSpanMetadata|1676 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefTreeMetadata|1739 - loading FLT External Reference tree model data
Aug 4, 2011 3:51:27 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation
SEVERE: [35m***[LIMITATION]***_0mdpbtbrgen.services.tdbrepository.FLTApiImpl::_[1mgetTDBName_]0m [2581] - TEMP
Hardcoded FLT name: myNtc
osgJniFltApi.FLTReadWrite::initExtRefBuildingMetadata|1621 - loading FLT External Reference building model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeMetadata|1649 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeSpanMetadata|1676 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefTreeMetadata|1739 - loading FLT External Reference tree model data
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation
SEVERE: [35m***[LIMITATION]***_0mdpbtbrgen.services.tdbrepository.FLTApiImpl::_[1mgetTDBName_]0m [2581] - TEMP
Hardcoded FLT name: myNtc
osgJniFltApi.FLTReadWrite::initExtRefBuildingMetadata|1621 - loading FLT External Reference building model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeMetadata|1649 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeSpanMetadata|1676 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefTreeMetadata|1739 - loading FLT External Reference tree model data
Aug 4, 2011 3:51:28 PM net.onesaf.ext.dpbtdbrgen.services.common.Log limitation
SEVERE: [35m***[LIMITATION]***_0mdpbtbrgen.services.tdbrepository.FLTApiImpl::_[1mgetTDBName_]0m [2581] - TEMP
Hardcoded FLT name: myNtc
osgJniFltApi.FLTReadWrite::initExtRefBuildingMetadata|1621 - loading FLT External Reference building model data

```



```

osgJniFltApi.FLTReadWrite::initExtRefBridgeMetadata|1649 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeSpanMetadata|1676 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefTreeMetadata|1739 - loading FLT External Reference tree model data
Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation
SEVERE: [35m***[LIMITATION]***_0mdpbtbrngen.services.tdbrepository.FLTApiImpl::_1mgetTDBName_0m [2581] - TEMP
Hardcoded FLT name: myNtc
osgJniFltApi.FLTReadWrite::initExtRefBuildingMetadata|1621 - loading FLT External Reference building model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeMetadata|1649 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefBridgeSpanMetadata|1676 - loading FLT External Reference bridge model data
osgJniFltApi.FLTReadWrite::initExtRefTreeMetadata|1739 - loading FLT External Reference tree model data
Aug 4, 2011 3:51:36 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation
SEVERE: [35m***[LIMITATION]***_0mdpbtbrngen.services.tdbrepository.FLTApiImpl::_1mgetTDBName_0m [2581] - TEMP
Hardcoded FLT name: myNtc
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_1mincorporateDataElementChanges_0m [588] - Incorporating DataElement changes
into FLT
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_1mloadTdbData_0m [695] - verify that the correct Tdb data is loaded
osgJniFltApi.FLTReadWrite::isDataLoaded|2880 - ***WARNING*** Partial implementation, only checking for loadedModelsExtents == null
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log limitation
SEVERE: [35m***[LIMITATION]***_0mdpbtbrngen.services.tdbrepository.FLTApiImpl::_1mincorporateDataElementChanges_0m [632]
- Need coordinate conversion - Flat earth to Geodetic

osgJniFltApi.FLTReadWrite::getModelExternalReferenceNode|1421 - looking for external reference model: type=EXTREF_MODEL hashcode:
-5941746916707185650
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_1mgetAttributePairs_0m [2528] - FLT attributes
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_1mgetAttributePairs_0m [2530] - attribute: type: class java.lang.Double, name: WID,
value: 10.0

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_1mgetAttributePairs_0m [2530] - attribute: type: class java.lang.Double, name: HGT,
value: 4.0

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_1mgetAttributePairs_0m [2530] - attribute: type: class java.lang.String, name: Label,
value: AL015

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_1mgetAttributePairs_0m [2530] - attribute: type: class java.lang.Double, name: AOO,
value: 0.0

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_1mgetAttributePairs_0m [2530] - attribute: type: class java.lang.Integer, name: EXS,
value: 7

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_1mgetAttributePairs_0m [2530] - attribute: type: class java.lang.Double, name: LNT,
value: 10.0

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log message
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_1mincorporateDataElementChanges_0m [644] - Extracted 1 models from message.
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log debug
INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::_1mincorporateDataElementChanges_0m [656] - =====>
incorporateDataElementChanges extents: [Geodetic] sw: Geodetic: lat 36.562908 lon -116.592309 Deg, ne: Geodetic: lat 36.563464 lon -
116.591753 Deg
osgJniFltApi.FLTReadWrite::update|2794 -

====> Updating FLT models

osgJniFltApi.FLTReadWrite::update|2804 - =====> Different extents, reload FLT TDB - SKIP

```



osgJniFltApi.FLTReadWrite::updateModel|2916 -

====> FLT API - Updating local model.

osgJniFltApi.FLTReadWrite::updateModelGeometry|2956 - FLT API - Updating local model geometry with updated geometry.

osgJniFltApi.FLTReadWrite::updateModelGeometry|2976 -

FLT API - Updating external reference model

====> nameHashCodeIndex: -5941746916707185650 with filename: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51-destroyed.flt

nativeUpdateModelExternalRefernceFilename - External Reference filename: 1ae4c4f1-812a-674e-99c2-cfa0c65d28d51-destroyed.flt

osgJniFltApi.FLTReadWrite::updateModelAttributes|3013 - FLT API - Updating local model attributes with updated attributes.

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log warning

SEVERE: [35m\*\*\*[WARNING]\*\*\* [0mdpbtbrngen.services.tdbrepository.FLTApiImpl::\_[1mincorporateDataElementChanges\_[0m [664] -

FLT updated, please issue command to commit changes

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrngen.services.common.Log message

INFO: dpbtbrngen.services.tdbrepository.FLTApiImpl::\_[1mgenerateClientUpdate\_[0m [329] - FLT generateClientUpdate

\*\*\* xmlString \*\*\* SERIALIZER \*\*\*

<?xml version="1.0" encoding="UTF-8"?>

<ServerTargetFormatUpdate>

<ChangeDateTime>1312487503142</ChangeDateTime>

<ClientTargetFormat>FLT</ClientTargetFormat>

<Description>Server Updates to FLT target format</Description>

<UpdateList>

<Update>

<FeatureLabel>AL015</FeatureLabel>

<FeatureId>FLT\_0X0\_-5941746916707185650</FeatureId>

<FeatureType>EXTREF\_MODEL</FeatureType>

<GeometryList>

<Point>

<X>-116.59203122649177</X>

<Y>36.56318594343001</Y>

<Z>678.7466430664062</Z>

</Point>

<NodeAttributeList>

<AngleOfOrientation>0.0</AngleOfOrientation>

<ModelExtRefFilename>1ae4c4f1-812a-674e-99c2-cfa0c65d28d51-destroyed.flt</ModelExtRefFilename>

</NodeAttributeList>

</GeometryList>

<AttributeList>

<Attribute>

<Name>WID</Name>

<Value>10.0</Value>

</Attribute>

<Attribute>

<Name>HGT</Name>

<Value>4.0</Value>

</Attribute>

<Attribute>

<Name>Label</Name>

<Value>AL015</Value>

</Attribute>

<Attribute>

<Name>AOO</Name>

<Value>0.0</Value>

</Attribute>

<Attribute>

<Name>EXS</Name>

<Value>7</Value>

</Attribute>

<Attribute>

```
<Name>LNT</Name>
<Value>10.0</Value>
</Attribute>
</AttributeList>
</Update>
</UpdateList>
</ServerTargetFormatUpdate>
```

```
Aug 4, 2011 3:53:21 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.tdbrepository.FLTApiImpl:._[1mregenerate_[0m [677] - rebuild flt
osgJniFltApi.FLTReadWrite::rebuild|3148 - ***ERROR*** Persistent Attribute updates not implemented. Udpate and save attributes to disk.
osgJniFltApi.FLTReadWrite::rebuild|3173 - rebuild ***WARNING*** HARDCODED TDB output FLT path:
/work/tdbRepository//virtual/FLT/myNtc/master_rebuild.flt
writing FLT.../work/tdbRepository//virtual/FLT/myNtc/master_rebuild.flt
```

=====

TIME: Stopping at Thu Aug 4 16:35:56 EDT 2011

## Client Logs

### **otfClient-aug04-5.log**

This client contains two messages one is the initial changes messages which includes the changes to the bridge attributes. The other message is received after the server processed the change. Update message processing starts with the tag <ServerTargetFormatUpdate>. Processing of the OTF RMI sever is done similarly to the server.

```
./runOtfClient.sh: line 2: setuposgdev: command not found
./runOtfClient.sh: line 3: setupltdfdev: command not found
TIME: Running on lvcConstructive.localdomain at Thu Aug 4 15:36:55 EDT 2011 - net.onesaf.core.services.sys.composition.RuntimeLoader
PartialTdbGenClient - --Dnet.onesaf.core.services.sys.messaging.messagingEnabled=false
```

#### DEBUG INFO PATHS START

PATH =

```
./native:/work/hfrde/trunk/build/Linux.x86_64.gcc.4.1.2.release/bin:/work/jdk1.6.0_10/bin:/work/sp_onesaf2_1/SWR/external/ant/bin:/usr/bin:/work/hfrde/thirdparty.linux.x86_64.gcc.4.1.2.release/qt/bin:/work/hfrde/thirdparty.linux.x86_64.gcc.4.1.2.release/osg/bin:/work/hfrde/trunk/build/Linux.x86_64.gcc.4.1.2.release/bin:/work/jdk1.6.0_10/bin:/work/sp_onesaf2_1/SWR/external/ant/bin:/usr/bin:/work/hfrde/thirdparty.linux.x86_64.gcc.4.1.2.release/qt/bin:/work/hfrde/thirdparty.linux.x86_64.gcc.4.1.2.release/osg/bin:/work/jdk1.6.0_10/bin:/work/sp_onesaf2_1/SWR/external/ant/bin:/usr/bin:/sbin:/usr/sbin:/usr/lib64/qt-3.3/bin:/usr/kerberos/bin:/usr/local/bin:/usr/bin:/bin:/usr/X11R6/bin:/home/bgraniela/bin:/work/sp_onesaf2_1/SWR/lib/so:/work/sp_onesaf2_1/SWR/lib/so/linux/x86_64:/work/sp_onesaf2_1/SWR/external/LTFApi:/work/osg/OpenSceneGraph-2.6.1/lib:/work/osg/OpenSceneGraph-2.6.1/lib/osgPlugins-2.6.1:/work/osg/OpenSceneGraph-2.6.1/bin
```

LD\_LIBRARY\_PATH =

```
./native:/work/hfrde/trunk/build/Linux.x86_64.gcc.4.1.2.release/lib:/work/hfrde/thirdparty.linux.x86_64.gcc.4.1.2.release/osg/lib:/work/hfrde/thirdparty.linux.x86_64.gcc.4.1.2.release/qt/lib:/usr/X11R6/lib:/work/hfrde/trunk/build/Linux.x86_64.gcc.4.1.2.release/lib:/work/hfrde/thirdparty.linux.x86_64.gcc.4.1.2.release/osg/lib:/work/hfrde/thirdparty.linux.x86_64.gcc.4.1.2.release/qt/lib:/usr/X11R6/lib:/work/sp_onesaf2_1/SWR/lib/so:/work/sp_onesaf2_1/SWR/lib/so/linux/x86_64:/usr/X11R6/lib:/work/sp_onesaf2_1/SWR/lib/so:/work/sp_onesaf2_1/SWR/lib/so/linux/x86_64:/work/sp_onesaf2_1/SWR/external/LTFApi:/work/osg/OpenSceneGraph-2.6.1/lib:/work/osg/OpenSceneGraph-2.6.1/lib/osgPlugins-2.6.1
```

CLASSPATH =

```
/work/jdk1.6.0_10/lib/dt.jar:/work/jdk1.6.0_10/lib/tools.jar:/external/PilotTestExternal/grouplayout.jar:/external/FLTApi/FLTReadWrite.jar:/external/LTFApi/LTFReadWrite.jar:/external/PilotTestExternal/srm.jar:/external/PilotTestExternal/pellet-2.1.1/lib/aterm-java-1.6.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-test.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-rules.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-query.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-pellint.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapi.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-modularity.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-jena.jar:/external/PilotTestExternal/pellet-2.1.1/lib/aterm-explanation.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-el.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-dig.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-datatypes.jar:/external/PilotTestExternal/pellet-2.1.1/lib/pellet-core.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/xercesImpl-2.7.1.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/wstx-asl-3.2.9.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/tax-api-1.0.1.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/slf4j-log4j12-1.5.6.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/lucene-core-2.3.1.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/log4j-1.2.13.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/junit-4.5.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/jena-2.6.2-test.jar:/external/PilotTestExternal/pellet-2.1.1/lib/jena/jena-2.6.2.jar:/external/PilotTestExternal/pellet-
```

2.1.1/lib/jena/iri-0.7.jar:../../../../external/PilotTestExternal/pellet-2.1.1/lib/jena/icu4j-3.4.4.jar:../../../../external/PilotTestExternal/pellet-2.1.1/lib/jena/arc-2.8.1.jar:../../../../external/PilotTestExternal/pellet-2.1.1/lib/jetty/jetty.jar:../../../../external/PilotTestExternal/pellet-2.1.1/lib/xsdlb/xsdlb.jar:../../../../external/PilotTestExternal/pellet-2.1.1/lib/xsdlb/relaxngDatatype.jar:../../../../external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapi.jar:../../../../external/PilotTestExternal/pellet-2.1.1/lib/owlapi/owlapi-bin.jar:../../../../external/PilotTestExternal/pellet-2.1.1/lib/pellet-owlapiv3.jar:../../../../external/PilotTestExternal/pellet-2.1.1/lib/owlapiv3/owlapi-bin.jar:../../../../external/PilotTestExternal/gt2-coverage-2.4.4.jar:../../../../external/PilotTestExternal/gt2-gml-2.4.4.jar:../../../../external/PilotTestExternal/gt2-main-2.4.4.jar:../../../../external/PilotTestExternal/jts-1.8.jar:../../../../external/jetty/servlet-api-2.5-6.0.0rc2.jar:../../../../external/jetty/jetty-util-6.0.0rc2.jar:../../../../external/jetty/jetty-6.0.0rc2.jar:../../../../external/scripting/rhino1\_6R7.jar:../../../../external/scripting/jython.jar:../../../../external/scripting/js-engine.jar:../../../../external/scripting/jython-engine.jar:../../../../external/scripting/script-api.jar:../../../../external/xmlbeans/DGMsgMappings.jar:../../../../external/xmlbeans/xmlbeans-2.3.0/lib/xbean.jar:../../../../external/truezip/truezip.jar:../../../../external/jmx/jmxremote\_optional.jar:../../../../external/jmx/jmxremote.jar:../../../../external/jmx/jmxtools.jar:../../../../external/commons-math/commons-math-1.1.jar:../../../../external/poi/poi-2.5.1-final-20040804.jar:../../../../external/java3d/j3dutils.jar:../../../../external/java3d/j3dcore.jar:../../../../external/java3d/vecmath.jar:../../../../external/jrms/classes.jar:../../../../external/prefuse/prefuse.jar:../../../../external/prefuse/prefuse.jar:../../../../external/skinlf/skinlf.jar:../../../../external/javahelp/lib/jhall.jar:../../../../external/xerces/xml-apis.jar:../../../../external/xerces/xercesImpl.jar:../../../../external/jaxb/lib/jaxb-all.jar:../../../../external/infobus/infobus.jar:../../../../external/mckoi1.0.2/mckoidb.jar:../../../../external/xalan2/xalan.jar:../../../../lib/services/sys/proploader.jar:../../../../external/log4j/log4j-1.2.8.jar:../../../../lib/services/sys/logger2.jar:../../../../lib/services/sys/init.jar:../../../../lib/services/sys/enum.jar:../../../../lib/services/sys/cachemgr.jar:../../../../lib/services/sys/ext.jar:../../../../lib/services/sys/repository.jar:../../../../lib/services/gui/support/support.jar:../../../../lib/services/gui/tool/resources.jar:../../../../lib/services/sys/timer.jar:../../../../lib/services/data/sax.jar:../../../../lib/services/data/dom.jar:../../../../lib/services/data/encodable.jar:../../../../lib/services/sys/capability.jar:../../../../lib/services/sys/composition.jar:

DEBUG INFO PATHS END

Aug 4, 2011 3:36:58 PM net.onesaf.core.services.sys.messaging.ServiceRegistry <init>

WARNING: Messaging Services disabled flag is set. Going to single node mode.

00:00] GVT: -1 info ..../src/net/onesaf/core/services/erc/native/src/core/sim\_time.cpp 332:

+ CORE::SimTime initialized from the system clock.

Aug 4, 2011 3:37:30 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message

INFO: dpbtdbrgen.services.client.PartialTdbGenClient::\_[1m<init>\_[0m [125] - PartialTdbGenClient is running.

Aug 4, 2011 3:37:30 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message

INFO: dpbtdbrgen.services.client.PartialTdbGenClient::\_[1m<init>\_[0m [147] - connecting to PartialTdbGenServer running, on machine: lvcServer, port: 7777

Aug 4, 2011 3:37:30 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message

INFO: dpbtdbrgen.services.client.PartialTdbGenClient::\_[1mInitConnectionToServer\_[0m [567] - LocalHost: lvcConstructive.localdomain

Aug 4, 2011 3:37:30 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message

INFO: dpbtdbrgen.services.client.PartialTdbGenClient::\_[1mInitConnectionToServer\_[0m [578] - Found connection to lvcServer

Aug 4, 2011 3:37:30 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message

INFO: dpbtdbrgen.services.client.PartialTdbGenClient::\_[1mconnectToTdbGenServer\_[0m [606] - Connecting to TdbGenServer on: lvcServer, port: 7777

Aug 4, 2011 3:37:30 PM net.onesaf.ext.dpbtdbrgen.services.common.Log error

SEVERE: \_[34m\*\*[ERROR]\*\*\_ [0mdpbtdbrgen.services.client.PartialTdbGenClient::\_[1mconnectToTdbGenServer\_[0m [621] - IOException connecting to server:

STACK TRACE:

```

java.net.ConnectException: Connection refused
    at java.net.PlainSocketImpl.socketConnect(Native Method)
    at java.net.PlainSocketImpl.doConnect(PlainSocketImpl.java:333)
    at java.net.PlainSocketImpl.connectToAddress(PlainSocketImpl.java:195)
    at java.net.PlainSocketImpl.connect(PlainSocketImpl.java:182)
    at java.net.SocksSocketImpl.connect(SocksSocketImpl.java:366)
    at java.net.Socket.connect(Socket.java:519)
    at java.net.Socket.connect(Socket.java:469)
    at java.net.Socket.<init>(Socket.java:366)
    at java.net.Socket.<init>(Socket.java:180)
    at net.onesaf.ext.dpbtdbrgen.services.client.PartialTdbGenClient.connectToTdbGenServer(PartialTdbGenClient.java:614)
    at net.onesaf.ext.dpbtdbrgen.services.client.PartialTdbGenClient.initConnectionToServer(PartialTdbGenClient.java:581)
    at net.onesaf.ext.dpbtdbrgen.services.client.PartialTdbGenClient.<init>(PartialTdbGenClient.java:149)
    at sun.reflect.NativeConstructorAccessorImpl.newInstance0(Native Method)
    at sun.reflect.NativeConstructorAccessorImpl.newInstance(NativeConstructorAccessorImpl.java:39)
    at sun.reflect.DelegatingConstructorAccessorImpl.newInstance(DelegatingConstructorAccessorImpl.java:27)
    at java.lang.reflect.Constructor.newInstance(Constructor.java:513)
    at java.lang.Class.newInstance0(Class.java:355)
    at java.lang.Class.newInstance(Class.java:308)

```

```

at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:39)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:25)
at java.lang.reflect.Method.invoke(Method.java:597)
at net.onesaf.core.services.sys.composition.composer.utils.Statement.invoke(Statement.java:769)
at net.onesaf.core.services.sys.composition.composer.utils.Expression.getValue(Expression.java:113)
at net.onesaf.core.services.sys.composition.composer.utils.ObjectHandler.getValue(CompositionDecoder.java:307)
at net.onesaf.core.services.sys.composition.composer.utils.ObjectHandler.endElement(CompositionDecoder.java:621)
at org.apache.xerces.parsers.AbstractSAXParser.endElement(Unknown Source)
at org.apache.xerces.parsers.AbstractXMLDocumentParser.emptyElement(Unknown Source)
at org.apache.xerces.impl.XMLDocumentFragmentScannerImpl.scanStartElement(Unknown Source)
at org.apache.xerces.impl.XMLDocumentFragmentScannerImpl$FragmentContentDispatcher.dispatch(Unknown Source)
at org.apache.xerces.impl.XMLDocumentFragmentScannerImpl.scanDocument(Unknown Source)
at org.apache.xerces.parsers.XML11Configuration.parse(Unknown Source)
at org.apache.xerces.parsers.XML11Configuration.parse(Unknown Source)
at org.apache.xerces.parsers.XMLParser.parse(Unknown Source)
at org.apache.xerces.parsers.AbstractSAXParser.parse(Unknown Source)
at org.apache.xerces.jaxp.SAXParserImpl$JAXPSAXParser.parse(Unknown Source)
at javax.xml.parsers.SAXParser.parse(SAXParser.java:395)
at javax.xml.parsers.SAXParser.parse(SAXParser.java:198)
at net.onesaf.core.services.sys.composition.composer.utils.CompositionDecoder.<init>(CompositionDecoder.java:119)
at net.onesaf.core.services.sys.composition.RuntimeLoader.readBeans(RuntimeLoader.java:193)
at net.onesaf.core.services.sys.composition.RuntimeLoader.main(RuntimeLoader.java:758)

```

java.net.ConnectException: Connection refused

```

at java.net.PlainSocketImpl.socketConnect(Native Method)
at java.net.PlainSocketImpl.doConnect(PlainSocketImpl.java:333)
at java.net.PlainSocketImpl.connectToAddress(PlainSocketImpl.java:195)
at java.net.PlainSocketImpl.connect(PlainSocketImpl.java:182)
at java.net.SocksSocketImpl.connect(SocksSocketImpl.java:366)
at java.net.Socket.connect(Socket.java:519)
at java.net.Socket.connect(Socket.java:469)
at java.net.Socket.<init>(Socket.java:366)
at java.net.Socket.<init>(Socket.java:180)
at net.onesaf.ext.dpbtdbrgen.services.client.PartialTdbGenClient.connectToTdbGenServer(PartialTdbGenClient.java:614)
at net.onesaf.ext.dpbtdbrgen.services.client.PartialTdbGenClient.initConnectionToServer(PartialTdbGenClient.java:581)
at net.onesaf.ext.dpbtdbrgen.services.client.PartialTdbGenClient.<init>(PartialTdbGenClient.java:149)
at sun.reflect.NativeConstructorAccessorImpl.newInstance0(Native Method)
at sun.reflect.NativeConstructorAccessorImpl.newInstance(NativeConstructorAccessorImpl.java:39)
at sun.reflect.DelegatingConstructorAccessorImpl.newInstance(DelegatingConstructorAccessorImpl.java:27)
at java.lang.reflect.Constructor.newInstance(Constructor.java:513)
at java.lang.Class.newInstance0(Class.java:355)
at java.lang.Class.newInstance(Class.java:308)
at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:39)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:25)
at java.lang.reflect.Method.invoke(Method.java:597)
at net.onesaf.core.services.sys.composition.composer.utils.Statement.invoke(Statement.java:769)
at net.onesaf.core.services.sys.composition.composer.utils.Expression.getValue(Expression.java:113)
at net.onesaf.core.services.sys.composition.composer.utils.ObjectHandler.getValue(CompositionDecoder.java:307)
at net.onesaf.core.services.sys.composition.composer.utils.ObjectHandler.endElement(CompositionDecoder.java:621)
at org.apache.xerces.parsers.AbstractSAXParser.endElement(Unknown Source)
at org.apache.xerces.parsers.AbstractXMLDocumentParser.emptyElement(Unknown Source)
at org.apache.xerces.impl.XMLDocumentFragmentScannerImpl.scanStartElement(Unknown Source)
at org.apache.xerces.impl.XMLDocumentFragmentScannerImpl$FragmentContentDispatcher.dispatch(Unknown Source)
at org.apache.xerces.impl.XMLDocumentFragmentScannerImpl.scanDocument(Unknown Source)
at org.apache.xerces.parsers.XML11Configuration.parse(Unknown Source)
at org.apache.xerces.parsers.XML11Configuration.parse(Unknown Source)
at org.apache.xerces.parsers.XMLParser.parse(Unknown Source)
at org.apache.xerces.parsers.AbstractSAXParser.parse(Unknown Source)
at org.apache.xerces.jaxp.SAXParserImpl$JAXPSAXParser.parse(Unknown Source)
at javax.xml.parsers.SAXParser.parse(SAXParser.java:395)
at javax.xml.parsers.SAXParser.parse(SAXParser.java:198)

```

```

    at net.onesaf.core.services.sys.composition.composer.utils.CompositionDecoder.<init>(CompositionDecoder.java:119)
    at net.onesaf.core.services.sys.composition.RuntimeLoader.readBeans(RuntimeLoader.java:193)
    at net.onesaf.core.services.sys.composition.RuntimeLoader.main(RuntimeLoader.java:758)
Aug 4, 2011 3:37:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1m<init>_[0m [157] - Constructive Client support enabled.
Aug 4, 2011 3:37:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1maddListeners_[0m [203] - PartialTdbGenClient - adding listeners to environment
changes ...
Aug 4, 2011 3:37:30 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.ProcessServerMessages::_[1mrun_[0m [952] - <<< Processing Onto Tdb Gen Server update Messages >>>
server port: 7777
OpenMap(tm) Version 4.6.4
  Copyright (C) BBNT Solutions LLC. All rights reserved.
  See http://openmap.bbn.com/ for details.

Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mobjectAdded_[0m [264] - PartialOTFClient - received object added ...
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient$2::_[1mpropertyChange_[0m [241] - PartialOTFClient - attributeChanges ...
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mprocessFeatureChanges_[0m [325] -
====> Feature changes start ...

Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mprocessFeatureAttributeChange_[0m [411] - processFeatureAttributeChange -
processing newValue - newChanges length: 2
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mprocessFeatureAttributeChange_[0m [412] - dcPair:
label=HEIGHT_ABOVE_SURFACE_LEVEL, value=5.0
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mprocessFeatureChanges_[0m [339] - ****> Feature changes are still coming in ...
wait some more
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mprocessFeatureChanges_[0m [352] - =====> update lastFeatureChange
attributes, Feature UUID9c6d352c4ca211e08459002421a8c4c6
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient$2::_[1mpropertyChange_[0m [241] - PartialOTFClient - attributeChanges ...
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mprocessFeatureAttributeChange_[0m [411] - processFeatureAttributeChange -
processing newValue - newChanges length: 3
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mprocessFeatureAttributeChange_[0m [412] - dcPair:
label=ORIENTATION_ANGLE, value=0.0
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mprocessFeatureAttributeChange_[0m [424] - lcPair:
label=HEIGHT_ABOVE_SURFACE_LEVEL, value=5.0
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mprocessFeatureAttributeChange_[0m [433] - processFeatureAttributeChange <<<
ATTRIBUTE CHANGE >>> Feature UUID9c6d352c4ca211e08459002421a8c4c6
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient$2::_[1mpropertyChange_[0m [241] - PartialOTFClient - attributeChanges ...
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mprocessFeatureAttributeChange_[0m [411] - processFeatureAttributeChange -
processing newValue - newChanges length: 4
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mprocessFeatureAttributeChange_[0m [412] - dcPair: label=ILLUMINANCE,
value=1.0
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.PartialTdbGenClient::_[1mprocessFeatureAttributeChange_[0m [424] - lcPair:
label=HEIGHT_ABOVE_SURFACE_LEVEL, value=5.0
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

```



INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [412] - dcPair: label=TERRAIN\_TRAFFICABILITY\_MEDIUM, value=ID\_20  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [424] - lcPair: label=HEIGHT\_ABOVE\_SURFACE\_LEVEL, value=5.0  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [433] - processFeatureAttributeChange <<< ATTRIBUTE CHANGE >>> Feature UID9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient\$2::\_[IpropertyChange\_0m [241] - PartialOTFClient - attributeChanges ...  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [411] - processFeatureAttributeChange - processing newValue - newChanges length: 10  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [412] - dcPair: label=TERRAIN\_TRAFFICABILITY\_COARSE, value=DEFAULT  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [424] - lcPair: label=HEIGHT\_ABOVE\_SURFACE\_LEVEL, value=5.0  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [433] - processFeatureAttributeChange <<< ATTRIBUTE CHANGE >>> Feature UID9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient\$2::\_[IpropertyChange\_0m [241] - PartialOTFClient - attributeChanges ...  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [411] - processFeatureAttributeChange - processing newValue - newChanges length: 11  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [412] - dcPair: label=GENERAL\_DAMAGE\_FRACTION, value=7.0  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [424] - lcPair: label=HEIGHT\_ABOVE\_SURFACE\_LEVEL, value=5.0  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [433] - processFeatureAttributeChange <<< ATTRIBUTE CHANGE >>> Feature UID9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient\$2::\_[IpropertyChange\_0m [241] - PartialOTFClient - attributeChanges ...  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [411] - processFeatureAttributeChange - processing newValue - newChanges length: 12  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [412] - dcPair: label=DEPTH\_BELOW\_SURFACE\_LEVEL, value=0.0  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [424] - lcPair: label=HEIGHT\_ABOVE\_SURFACE\_LEVEL, value=5.0  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [433] - processFeatureAttributeChange <<< ATTRIBUTE CHANGE >>> Feature UID9c6d352c4ca211e08459002421a8c4c6  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient\$2::\_[IpropertyChange\_0m [241] - PartialOTFClient - attributeChanges ...  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [411] - processFeatureAttributeChange - processing newValue - newChanges length: 13  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [412] - dcPair: label=BUILDING\_FUNCTION, value=HOUSE  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[IprocessFeatureAttributeChange\_0m [424] - lcPair: label=HEIGHT\_ABOVE\_SURFACE\_LEVEL, value=5.0  
Aug 4, 2011 3:46:29 PM net.onesaf.ext.dpbtbrgen.services.common.Log message



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INFO: dpbtdbrgen.services.client.PartialTdbGenClient::_[I]mprocessFeatureAttributeChange_[0m [433] - processFeatureAttributeChange <<<
ATTRIBUTE CHANGE >>> Feature UUID9c6d352c4ca211e08459002421a8c4c6
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtdbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_[0mdpbtbrgen.services.client.PartialTdbGenClient$TdbFeatureChangeWatchDogTimer::_[1mrun_[0m
[484] - No more changes, submitting changes to server.
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.client.PartialTdbGenClient::_[I]mconnectToTdbGenServer_[0m [606] - Connecting to TdbGenServer on: lvcServer,
port: 7777
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.client.PartialTdbGenClient::_[I]mgenerateFeatureChangeXML_[0m [666] - converting feature to XML ...
Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.client.PartialTdbGenClient::_[I]mgenerateFeatureChangeXML_[0m [761] - XML:
<?xml version="1.0" encoding="UTF-8"?>
<ClientTargetFormatChange>
  <ChangeDateTime>1312487199163</ChangeDateTime>
  <ClientMachineName>lvcConstructive</ClientMachineName>
  <ClientPort>7777</ClientPort>
  <ClientTargetFormat>OTF</ClientTargetFormat>
  <Description>
    Changes to OTF target format
  </Description>
  <ChangeList>
    <Change>
      <FeatureType>Point</FeatureType>
      <FeatureLabel>BUILDING</FeatureLabel>
      <FeatureId>9c6d352c4ca211e08459002421a8c4c6</FeatureId>
      <GeometryList>
        <Point>
          <X>-117.02189170000001</X>
          <Y>34.891405562253446</Y>
          <Z>711.0001743612811</Z>
        </Point>
      </GeometryList>
      <AttributeList>
        <Attribute>
          <Name>TERRAIN_TRAFFICABILITY_FINE</Name>
          <Value>ID_0</Value>
        </Attribute>
        <Attribute>
          <Name>HEIGHT_ABOVE_SURFACE_LEVEL</Name>
          <Value>5.0</Value>
        </Attribute>
        <Attribute>
          <Name>ORIENTATION_ANGLE</Name>
          <Value>0.0</Value>
        </Attribute>
        <Attribute>
          <Name>ILLUMINANCE</Name>
          <Value>1.0</Value>
        </Attribute>
        <Attribute>
          <Name>USAGE</Name>
          <Value>NON_MILITARY</Value>
        </Attribute>
        <Attribute>
          <Name>PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION</Name>
          <Value>0.0</Value>
        </Attribute>
        <Attribute>
          <Name>LENGTH</Name>
          <Value>15.0</Value>
        </Attribute>
      </AttributeList>
    </Change>
  </ChangeList>
</ClientTargetFormatChange>

```

```

    <Attribute>
      <Name>PRIMARY_PRODUCT</Name>
      <Value>NO_PRODUCT</Value>
    </Attribute>
    <Attribute>
      <Name>TERRAIN_TRAFFICABILITY_MEDIUM</Name>
      <Value>ID_20</Value>
    </Attribute>
    <Attribute>
      <Name>TERRAIN_TRAFFICABILITY_COARSE</Name>
      <Value>DEFAULT</Value>
    </Attribute>
    <Attribute>
      <Name>GENERAL_DAMAGE_FRACTION</Name>
      <Value>7.0</Value>
    </Attribute>
    <Attribute>
      <Name>DEPTH_BELOW_SURFACE_LEVEL</Name>
      <Value>0.0</Value>
    </Attribute>
    <Attribute>
      <Name>BUILDING_FUNCTION</Name>
      <Value>HOUSE</Value>
    </Attribute>
  </AttributeList>
</Change>
</ChangeList>
</ClientTargetFormatChange>

```

Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[1mtransmitXmlToTdbGenServer\_[0m [860] - sending feature XML to lvcServer ... mgs#0

Aug 4, 2011 3:46:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[1mtransmitXmlToTdbGenServer\_[0m [886] - Message from server: Received Target Format change message, procesing ...

Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.ConnectionHandler::\_[1mrun\_[0m [1003] - <<< \*\*\* TDB GEN SERVER \*\*\* update Message Received>>> received msg#0

Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.ConnectionHandler::\_[1mrun\_[0m [1004] - message:

```

<?xml version="1.0" encoding="UTF-8"?>
<ServerTargetFormatUpdate>
  <ChangeDateTime>1312487501179</ChangeDateTime>
  <ClientMachineName>lvcServer.localdomain</ClientMachineName>
  <ClientPort>7777</ClientPort>
  <ClientTargetFormat>OTF</ClientTargetFormat>
  <Description>Server Updates to OTF target format</Description>
  <UpdateList>
    <Update>
      <FeatureLabel>BUILDING</FeatureLabel>
      <FeatureId>9c6d352c4ca211e08459002421a8c4c6</FeatureId>
      <FeatureType>Point</FeatureType>
      <GeometryList>
        <Point>
          <X>-117.02189170000004</X>
          <Y>34.89140556</Y>
          <Z>711.0</Z>
        </Point>
      </GeometryList>
      <AttributeList>
        <Attribute>
          <Name>NUMERIC_OBJECT_IDENTIFIER</Name>
          <Value>0</Value>
        </Attribute>
      </AttributeList>
    </Update>
  </UpdateList>
</ServerTargetFormatUpdate>

```

```

</Attribute>
<Attribute>
  <Name>WALL_PREDOMINANT_SURFACE_MATERIAL</Name>
  <Value>MASONRY</Value>
</Attribute>
<Attribute>
  <Name>VEHICLE_STORAGE_DOOR_PRI_WIDTH</Name>
  <Value>6.0</Value>
</Attribute>
<Attribute>
  <Name>EMISSIVITY_QB_EM_BAND_AND_BUILDING_COMPONENT_TYPE</Name>
  <Value>0.0</Value>
</Attribute>
<Attribute>
  <Name>REGIONAL_STYLE</Name>
  <Value>MODERN_INDUSTRIAL_CONSTRUCTION</Value>
</Attribute>
<Attribute>
  <Name>COMPLEX_COMPONENT_IDENTIFIER</Name>
  <Value>0</Value>
</Attribute>
<Attribute>
  <Name>TERRAIN_TRAFFICABILITY_FINE</Name>
  <Value>ID_0</Value>
</Attribute>
<Attribute>
  <Name>SNOW_ACCUMULATION</Name>
  <Value>NONE_PRESENT</Value>
</Attribute>
<Attribute>
  <Name>HEIGHT_ABOVE_SURFACE_LEVEL</Name>
  <Value>5.0</Value>
</Attribute>
<Attribute>
  <Name>BUILDING_CONSTRUCTION_TYPE</Name>
  <Value>BRICK_CLAD_STEEL_FRAME</Value>
</Attribute>
<Attribute>
  <Name>ROOF_SHAPE</Name>
  <Value>FLAT</Value>
</Attribute>
<Attribute>
  <Name>SOURCE</Name>
  <Value>MISSING</Value>
</Attribute>
<Attribute>
  <Name>ORIENTATION_ANGLE</Name>
  <Value>0.0</Value>
</Attribute>
<Attribute>
  <Name>LIGHTING_CHARACTERIZATION</Name>
  <Value>DIMLY_LIT</Value>
</Attribute>
<Attribute>
  <Name>ROOF_PREDOMINANT_SURFACE_MATERIAL</Name>
  <Value>CONGLOMERATE</Value>
</Attribute>
<Attribute>
  <Name>OVERALL_VERTICAL_DIMENSION</Name>
  <Value>0.0</Value>
</Attribute>
<Attribute>
  <Name>UNIVERSALLY_UNIQUE_ID</Name>

```

```

    <Value>9c6d352c4ca211e08459002421a8c4c6</Value>
  </Attribute>
  <Attribute>
    <Name>FRONT_AND_AXIS_REFERENCE</Name>
    <Value>POSITIVE_X</Value>
  </Attribute>
  <Attribute>
    <Name>ILLUMINANCE</Name>
    <Value>1.0</Value>
  </Attribute>
  <Attribute>
    <Name>POINT_OBJECT_TYPE</Name>
    <Value>VERT_STRUCTURE</Value>
  </Attribute>
  <Attribute>
    <Name>USAGE</Name>
    <Value>NON_MILITARY</Value>
  </Attribute>
  <Attribute>
    <Name>LENGTH</Name>
    <Value>15.0</Value>
  </Attribute>
  <Attribute>
    <Name>PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION</Name>
    <Value>0.0</Value>
  </Attribute>
  <Attribute>
    <Name>PRIMARY_PRODUCT</Name>
    <Value>NO_PRODUCT</Value>
  </Attribute>
  <Attribute>
    <Name>ROOF_LOAD_BEARING_CAPACITY</Name>
    <Value>2.5</Value>
  </Attribute>
  <Attribute>
    <Name>TERRAIN_TRAFFICABILITY_MEDIUM</Name>
    <Value>ID_20</Value>
  </Attribute>
  <Attribute>
    <Name>NAME</Name>
    <Value/>
  </Attribute>
  <Attribute>
    <Name>VEHICLE_STORAGE_AREA</Name>
    <Value>0.0</Value>
  </Attribute>
  <Attribute>
    <Name>TERRAIN_TRAFFICABILITY_COARSE</Name>
    <Value>DEFAULT</Value>
  </Attribute>
  <Attribute>
    <Name>GENERAL_DAMAGE_FRACTION</Name>
    <Value>7.0</Value>
  </Attribute>
  <Attribute>
    <Name>COLOURATION</Name>
    <Value>BROWN</Value>
  </Attribute>
  <Attribute>
    <Name>LADDER_PRESENT</Name>
    <Value>true</Value>
  </Attribute>
  <Attribute>

```

```

    <Name>EXTERIOR_WALL_THICKNESS</Name>
    <Value>0.25</Value>
  </Attribute>
  <Attribute>
    <Name>COMBUSTION_STATE</Name>
    <Value>NOT_BURNING</Value>
  </Attribute>
  <Attribute>
    <Name>ANTENNA_COUNT</Name>
    <Value>0</Value>
  </Attribute>
  <Attribute>
    <Name>PRIMARY_ENTRANCE_LOCATION</Name>
    <Value>FRONT_CENTRE_ON_GRADE</Value>
  </Attribute>
  <Attribute>
    <Name>DEPTH_BELOW_SURFACE_LEVEL</Name>
    <Value>0.0</Value>
  </Attribute>
  <Attribute>
    <Name>WIDTH</Name>
    <Value>13.0</Value>
  </Attribute>
  <Attribute>
    <Name>ROOF_PREDOMINANT_PATTERN</Name>
    <Value>MOTTLED</Value>
  </Attribute>
  <Attribute>
    <Name>WALL_PREDOMINANT_PATTERN</Name>
    <Value>BRICK</Value>
  </Attribute>
  <Attribute>
    <Name>SURFACE_TEMPERATURE_QB_BUILDING_COMPONENT_TYPE</Name>
    <Value>15.0</Value>
  </Attribute>
  <Attribute>
    <Name>VEHICLE_STORAGE_DOOR_PRI_HEIGHT</Name>
    <Value>3.0</Value>
  </Attribute>
  <Attribute>
    <Name>BUILDING_FUNCTION</Name>
    <Value>HOUSE</Value>
  </Attribute>
  <Attribute>
    <Name>OBJECT_VARIANT</Name>
    <Value>0</Value>
  </Attribute>
</AttributeList>
</Update>
</UpdateList>
</ServerTargetFormatUpdate>

```

```

Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.ConnectionHandler::_[1mcalculateThroughput_[0m [1173] - message received time: 1312487501946
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.ConnectionHandler::_[1mcalculateThroughput_[0m [1191] - looking for ChangeDate tag
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log error
SEVERE: _[34m***[ERROR]***_[0mdpbtbrgen.services.client.ConnectionHandler::_[1mgetStringAttribute_[0m [1243] - Attribute [name:
ChangeDateTime] [value: 1312487501179]
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.ConnectionHandler::_[1mcalculateThroughput_[0m [1196] - ChangeDate: 1312487501179
Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.ConnectionHandler::_[1mcalculateThroughput_[0m [1209] - MESSAGE transmission time: 767 msec

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Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.ConnectionHandler::\_[1mcalculateThroughput\_[0m [1210] - 0.767 sec  
 Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.ConnectionHandler::\_[1mcalculateThroughput\_[0m [1214] - message size: 7725 characters / bytes  
 Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.ConnectionHandler::\_[1mrun\_[0m [1012] - <<<<METRIC>>>> server-to-client update message throughput:  
 80573.66362451109 bps  
 Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.ConnectionHandler::\_[1mrun\_[0m [1013] - 78.68521838331161 Kbps  
 Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.ConnectionHandler::\_[1mrun\_[0m [1014] - 0.07684103357745274 Mbps  
 Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.common.TdbGen\_Queue::\_[1msubscribe\_[0m [92] - Added listener:  
 net.onesaf.ext.dpbtbrgen.services.tdbrepository.TdbRepositoryManager@4f132932  
 Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mloadTdbRepoInfo\_[0m [186] - Support for Constructive TDB processing  
 ENABLED  
 Aug 4, 2011 3:51:41 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mloadTdbFrontAndBackEnds\_[0m [265] - Provide support for  
 Constructive APIs, repository path: /work/tdbRepository/  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1msetClientMessageForProcessing\_[0m [371] - initializing xml\_document  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1misServerTdbUpdateMssage\_[0m [434] - Determine if XML message is  
 sever update - looking for ServerTargetFormatUpdate tag  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.ConnectionHandler::\_[1mprocessServerMessage\_[0m [1082] - Processing Server Update message.  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.ConnectionHandler::\_[1mprocessServerMessage\_[0m [1085] - update message processing start time:  
 1312487502053  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_[0m [590] - looking for  
 ServerTargetFormatUpdate tag  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_[0m [686] - looking for  
 ServerTargetFormatUpdate tag  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_[0m [699] - processing server updates ...  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetStringAttribute\_[0m [1216] - Attribute [name: ClientTargetFormat]  
 [value: OTF]  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_[0m [716] - processing format: OTF  
 Aug 4, 2011 3:53:08 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_[0m [719] - done  
 Aug 4, 2011 3:53:08 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_[0m [723] - all client formats updated.  
 Aug 4, 2011 3:53:08 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.ConnectionHandler::\_[1mprocessServerMessage\_[0m [1091] - update message processing end time:  
 1312487588043  
 Aug 4, 2011 3:53:08 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.ConnectionHandler::\_[1mprocessServerMessage\_[0m [1095] - MESSAGE processing time: 85.99 msec  
 Aug 4, 2011 3:53:08 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.ConnectionHandler::\_[1mprocessServerMessage\_[0m [1096] - 85.99 sec  
 Aug 4, 2011 3:53:08 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mresetClientMessage\_[0m [382] - re-set xml\_document - set to null  
 Aug 4, 2011 5:00:07 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.PartialTdbGenClient::\_[1mobjectRemoved\_[0m [285] - PartialOTFClient - received object removed ...

TIME: Stopping at Thu Aug 4 17:00:20 EDT 2011

## LTFClient-Aug04-5.log

This log provides log statements that show processing of updates by a remote client machine. Processing starts with the update message tag

<ServerTargetFormatUpdate>. Processing of the LTF RMI sever is done similarly to the server.

TIME: Running on lvcLive.localdomain at Thu Aug 4 15:43:38 EDT 2011 - net.onesaf.ext.dpbtbdrngen.services.client.LtfPartialTdbGenClient -

```
Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbdrngen.services.common.Log info
INFO: dpbtbdrngen.services.common.TdbGen_Queue::_[1msubscribe_[0m [92] - Added listener:
net.onesaf.ext.dpbtbdrngen.services.tdbrepository.TdbRepositoryManager@5b2558d6
Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbdrngen.services.common.Log message
INFO: dpbtbdrngen.services.tdbrepository.TdbRepositoryManager::_[1mloadTdbRepoInfo_[0m [195] - Support for Live TDB processing
ENABLED
Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbdrngen.services.common.Log message
INFO: dpbtbdrngen.services.tdbrepository.TdbRepositoryManager::_[1mloadTdbFrontAndBackEnds_[0m [275] - Provide support for Live APIs,
repository path: /work/tdbRepository/
Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbdrngen.services.common.Log message
INFO: dpbtbdrngen.services.client.GenericPartialTdbGenClient::_[1m<init>_[0m [75] - Generic PartialTdbGenClient initialized.
Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbdrngen.services.common.Log message
INFO: dpbtbdrngen.services.client.GenericPartialTdbGenClient::_[1m<init>_[0m [89] - connecting to PartialTdbGenServer running, on machine:
lvcServer, port: 7777
Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbdrngen.services.common.Log message
INFO: dpbtbdrngen.services.client.GenericPartialTdbGenClient::_[1minitConnectionToServer_[0m [119] - Client LocalHost: lvcLive.localdomain
Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbdrngen.services.common.Log message
INFO: dpbtbdrngen.services.client.GenericPartialTdbGenClient::_[1minitConnectionToServer_[0m [130] - Found connection to SERVER:
lvcServer
Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbdrngen.services.common.Log message
INFO: dpbtbdrngen.services.client.GenericPartialTdbGenClient::_[1mconnectToTdbGenServer_[0m [159] - Connecting to TdbGenServer on:
lvcServer, port: 7777
java.net.ConnectException: Connection refused
    at java.net.PlainSocketImpl.socketConnect(Native Method)
    at java.net.PlainSocketImpl.doConnect(PlainSocketImpl.java:333)
    at java.net.PlainSocketImpl.connectToAddress(PlainSocketImpl.java:195)
    at java.net.PlainSocketImpl.connect(PlainSocketImpl.java:182)
    at java.net.SocksSocketImpl.connect(SocksSocketImpl.java:366)
    at java.net.Socket.connect(Socket.java:519)
    at java.net.Socket.connect(Socket.java:469)
    at java.net.Socket.<init>(Socket.java:366)
    at java.net.Socket.<init>(Socket.java:180)
    at
net.onesaf.ext.dpbtbdrngen.services.client.GenericPartialTdbGenClient.connectToTdbGenServer(GenericPartialTdbGenClient.java:167)
    at
net.onesaf.ext.dpbtbdrngen.services.client.GenericPartialTdbGenClient.initConnectionToServer(GenericPartialTdbGenClient.java:133)
    at net.onesaf.ext.dpbtbdrngen.services.client.GenericPartialTdbGenClient.<init>(GenericPartialTdbGenClient.java:91)
    at net.onesaf.ext.dpbtbdrngen.services.client.LtfPartialTdbGenClient.<init>(LtfPartialTdbGenClient.java:28)
    at net.onesaf.ext.dpbtbdrngen.services.client.LtfPartialTdbGenClient.main(LtfPartialTdbGenClient.java:57)
Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbdrngen.services.common.Log error
SEVERE: _[34m***[ERROR]***_[0mdpbtbdrngen.services.client.GenericPartialTdbGenClient::_[1mconnectToTdbGenServer_[0m [175] -
Exception :
```

Connection refused

STACK TRACE:

```
java.net.ConnectException: Connection refused
    at java.net.PlainSocketImpl.socketConnect(Native Method)
    at java.net.PlainSocketImpl.doConnect(PlainSocketImpl.java:333)
    at java.net.PlainSocketImpl.connectToAddress(PlainSocketImpl.java:195)
    at java.net.PlainSocketImpl.connect(PlainSocketImpl.java:182)
    at java.net.SocksSocketImpl.connect(SocksSocketImpl.java:366)
    at java.net.Socket.connect(Socket.java:519)
    at java.net.Socket.connect(Socket.java:469)
    at java.net.Socket.<init>(Socket.java:366)
    at java.net.Socket.<init>(Socket.java:180)
    at
net.onesaf.ext.dpbtbrgen.services.client.GenericPartialTdbGenClient.connectToTdbGenServer(GenericPartialTdbGenClient.java:167)
    at
net.onesaf.ext.dpbtbrgen.services.client.GenericPartialTdbGenClient.initConnectionToServer(GenericPartialTdbGenClient.java:133)
    at net.onesaf.ext.dpbtbrgen.services.client.GenericPartialTdbGenClient.<init>(GenericPartialTdbGenClient.java:91)
    at net.onesaf.ext.dpbtbrgen.services.client.LtfPartialTdbGenClient.<init>(LtfPartialTdbGenClient.java:28)
    at net.onesaf.ext.dpbtbrgen.services.client.LtfPartialTdbGenClient.main(LtfPartialTdbGenClient.java:57)
```

Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1m initializeTdbFrontAndBackEnds\_[0m [309] - intializing front and backends

Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.client.LtfPartialTdbGenClient::\_[1m<init>\_[0m [30] - LtfPartialTdbGenClient is running.

Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.client.LtfPartialTdbGenClient::\_[1m<init>\_[0m [38] - Live Client Machine: Yes support enabled.

Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.client.LtfPartialTdbGenClient::\_[1m<init>\_[0m [48] - LTF PartialTdbGenClient is running.

Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.client.LtfPartialTdbGenClient::\_[1mmain\_[0m [59] - LTF loop for ever ... wait for Server messages.

Aug 4, 2011 3:43:39 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.client.GenericServerMessageProcessing::\_[1mrun\_[0m [229] - <<< Processing Tdb Gen Server update Messages >>> server port: 7777

Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mrun\_[0m [280] - <<< \*\*\* TDB GEN SERVER \*\*\* update Message Received>>> received msg#0

Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mrun\_[0m [281] - message:

<?xml version="1.0" encoding="UTF-8"?>

<ServerTargetFormatUpdate>

<ChangeDateTime>1312487502249</ChangeDateTime>

<ClientTargetFormat>LTF</ClientTargetFormat>

<Description>Server Updates to LTF target format</Description>

<UpdateList>

<Update>

<FeatureLabel>Building Wall</FeatureLabel>

<FeatureId>LTF\_0X0X0\_1931</FeatureId>

<FeatureType>PRISM</FeatureType>

<GeometryList>

<Point>

<X>-2379489.191063474</X>

<Y>-4665585.888039902</Y>

<Z>3627983.471320409</Z>

</Point>

<Point>

<X>-2379475.126248431</X>

<Y>-4665593.061190614</Y>

<Z>3627983.471320409</Z>

</Point>

<Point>

<X>-2379469.7548426273</X>

<Y>-4665582.529161916</Y>



```

    <Z>3628000.424143554</Z>
  </Point>
  <Point>
    <X>-2379483.819657671</X>
    <Y>-4665575.356011204</Y>
    <Z>3628000.424143554</Z>
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  <Point>
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    <Y>-4665593.194987835</Y>
    <Z>3627989.1915497966</Z>
  </Point>
  <Point>
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    <Y>-4665600.368138547</Y>
    <Z>3627989.191549795</Z>
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  <Point>
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    <Y>-4665589.836109849</Y>
    <Z>3628006.144372942</Z>
  </Point>
  <Point>
    <X>-2379487.546250491</X>
    <Y>-4665582.662959138</Y>
    <Z>3628006.144372942</Z>
  </Point>
</GeometryList>
<AttributeList>
  <Attribute>
    <Name>Foliage Texture</Name>
    <Value>leaves.png</Value>
  </Attribute>
  <Attribute>
    <Name>Wall Texture</Name>
    <Value>walls.png</Value>
  </Attribute>
  <Attribute>
    <Name>Door Decal</Name>
    <Value>door.png</Value>
  </Attribute>
  <Attribute>
    <Name>Roof Texture</Name>
    <Value>roof.png</Value>
  </Attribute>
  <Attribute>
    <Name>Window Decal</Name>
    <Value>window.png</Value>
  </Attribute>
</AttributeList>
</Update>
</UpdateList>
</ServerTargetFormatUpdate>

```

```

Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mcalculateThroughput_[0m [486] - message received time:
1312487502648
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mcalculateThroughput_[0m [504] - looking for ChangeDate tag
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mgetStringAttribute_[0m [556] - Attribute [name: ChangeDateTime]
[value: 1312487502249]
Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

```

INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mcalculateThroughput\_][0m [509] - ChangeDate: 1312487502249  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mcalculateThroughput\_][0m [522] - MESSAGE transmission time: 399 msec  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mcalculateThroughput\_][0m [523] - 0.399 sec  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mcalculateThroughput\_][0m [527] - message size: 2824 characters / bytes  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mrun\_][0m [289] - <<<METRIC>>> server-to-client update message throughput: 56621.55388471178 bps  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mrun\_][0m [290] - 55.294486215538846 Kbps  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mrun\_][0m [291] - 0.053998521694862155 Mbps  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1msetClientMessageForProcessing\_][0m [371] - initializing xml\_document  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1misServerTdbUpdateMssage\_][0m [434] - Determine if XML message is sever update - looking for ServerTargetFormatUpdate tag  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mprocessServerMessage\_][0m [355] - Processing Server Update message.  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mprocessServerMessage\_][0m [358] - update message processing start time: 1312487502948  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_][0m [590] - looking for ServerTargetFormatUpdate tag  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_][0m [686] - looking for ServerTargetFormatUpdate tag  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_][0m [699] - processing server updates ...  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetStringAttribute\_][0m [1216] - Attribute [name: ClientTargetFormat] [value: LTF]  
 Aug 4, 2011 3:51:42 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_][0m [716] - processing format: LTF  
 Aug 4, 2011 3:51:45 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_][0m [719] - done  
 Aug 4, 2011 3:51:45 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_][0m [723] - all client formats updated.  
 Aug 4, 2011 3:51:45 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mprocessServerMessage\_][0m [364] - update message processing end time: 1312487505651  
 Aug 4, 2011 3:51:45 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mprocessServerMessage\_][0m [368] - MESSAGE processing time: 2.703 msec  
 Aug 4, 2011 3:51:45 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mprocessServerMessage\_][0m [369] - 2.703 sec  
 Aug 4, 2011 3:51:45 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
 INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mresetClientMessage\_][0m [382] - re-set xml\_document - set to null

## **fltClient-Aug04-5.log**

This log provides log statements that show processing of updates by a remote client machine. Processing starts with the update message tag

<ServerTargetFormatUpdate>. Processing of the FLT RMI sever is done similarly to the server.

TIME: Running on lvcVirtual.localdomain at Thu Aug 4 15:44:08 EDT 2011 - net.onesaf.ext.dpbtdbrgen.services.client.FltPartialTdbGenClient -

```
Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtdbrgen.services.common.Log info
INFO: dpbtdbrgen.services.common.TdbGen_Queue::_[1msubscribe_[0m [92] - Added listener:
net.onesaf.ext.dpbtdbrgen.services.tdbrepository.TdbRepositoryManager@70eb7859
Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.tdbrepository.TdbRepositoryManager::_[1mloadTdbRepoInfo_[0m [179] - Support for Virtual TDB processing
ENABLED. path: /work/tdbRepository/
Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.tdbrepository.TdbRepositoryManager::_[1mloadTdbFrontAndBackEnds_[0m [255] - Provide support for Virtual
APIs, repository path: /work/tdbRepository/
Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.client.GenericPartialTdbGenClient::_[1m<init>_[0m [75] - Generic PartialTdbGenClient initialized.
Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.client.GenericPartialTdbGenClient::_[1m<init>_[0m [89] - connecting to PartialTdbGenServer running, on machine:
lvcServer, port: 7777
Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.client.GenericPartialTdbGenClient::_[1minitConnectionToServer_[0m [119] - Client LocalHost:
lvcVirtual.localdomain
Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.client.GenericPartialTdbGenClient::_[1minitConnectionToServer_[0m [130] - Found connection to SERVER:
lvcServer
Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtdbrgen.services.common.Log message
INFO: dpbtdbrgen.services.client.GenericPartialTdbGenClient::_[1mconnectToTdbGenServer_[0m [159] - Connecting to TdbGenServer on:
lvcServer, port: 7777
java.net.ConnectException: Connection refused
    at java.net.PlainSocketImpl.socketConnect(Native Method)
    at java.net.PlainSocketImpl.doConnect(PlainSocketImpl.java:333)
    at java.net.PlainSocketImpl.connectToAddress(PlainSocketImpl.java:195)
    at java.net.PlainSocketImpl.connect(PlainSocketImpl.java:182)
    at java.net.SocksSocketImpl.connect(SocksSocketImpl.java:366)
    at java.net.Socket.connect(Socket.java:519)
    at java.net.Socket.connect(Socket.java:469)
    at java.net.Socket.<init>(Socket.java:366)
    at java.net.Socket.<init>(Socket.java:180)
    at
net.onesaf.ext.dpbtdbrgen.services.client.GenericPartialTdbGenClient.connectToTdbGenServer(GenericPartialTdbGenClient.java:167)
    at
net.onesaf.ext.dpbtdbrgen.services.client.GenericPartialTdbGenClient.initConnectionToServer(GenericPartialTdbGenClient.java:133)
    at net.onesaf.ext.dpbtdbrgen.services.client.GenericPartialTdbGenClient.<init>(GenericPartialTdbGenClient.java:91)
    at net.onesaf.ext.dpbtdbrgen.services.client.FltPartialTdbGenClient.<init>(FltPartialTdbGenClient.java:28)
    at net.onesaf.ext.dpbtdbrgen.services.client.FltPartialTdbGenClient.main(FltPartialTdbGenClient.java:56)
Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtdbrgen.services.common.Log error
```

SEVERE: \_[34m\*\*\*[ERROR]\*\*\*\_ [0mdpbtbrgen.services.client.GenericPartialTdbGenClient::\_[1mconnectToTdbGenServer\_[0m [175] - Exception :

Connection refused

STACK TRACE:

```
java.net.ConnectException: Connection refused
    at java.net.PlainSocketImpl.socketConnect(Native Method)
    at java.net.PlainSocketImpl.doConnect(PlainSocketImpl.java:333)
    at java.net.PlainSocketImpl.connectToAddress(PlainSocketImpl.java:195)
    at java.net.PlainSocketImpl.connect(PlainSocketImpl.java:182)
    at java.net.SocksSocketImpl.connect(SocksSocketImpl.java:366)
    at java.net.Socket.connect(Socket.java:519)
    at java.net.Socket.connect(Socket.java:469)
    at java.net.Socket.<init>(Socket.java:366)
    at java.net.Socket.<init>(Socket.java:180)
    at
net.onesaf.ext.dpbtbrgen.services.client.GenericPartialTdbGenClient.connectToTdbGenServer(GenericPartialTdbGenClient.java:167)
    at
net.onesaf.ext.dpbtbrgen.services.client.GenericPartialTdbGenClient.initConnectionToServer(GenericPartialTdbGenClient.java:133)
    at net.onesaf.ext.dpbtbrgen.services.client.GenericPartialTdbGenClient.<init>(GenericPartialTdbGenClient.java:91)
    at net.onesaf.ext.dpbtbrgen.services.client.FltPartialTdbGenClient.<init>(FltPartialTdbGenClient.java:28)
    at net.onesaf.ext.dpbtbrgen.services.client.FltPartialTdbGenClient.main(FltPartialTdbGenClient.java:56)
```

Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1m initializeTdbFrontAndBackEnds\_[0m [309] - intializing front and backends

Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.FltPartialTdbGenClient::\_[1m<init>\_[0m [30] - FltPartialTdbGenClient is running.

Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.FltPartialTdbGenClient::\_[1m<init>\_[0m [39] - Client Machine: lvcVirtual support enabled.

Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.FltPartialTdbGenClient::\_[1m<init>\_[0m [47] - FLTPartialTdbGenClient is running.

Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.FltPartialTdbGenClient::\_[1mmain\_[0m [58] - FLT client loop for ever ... wait for Server messages.

Aug 4, 2011 3:44:09 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.GenericServerMessageProcessing::\_[1mrun\_[0m [229] - <<< Processing Tdb Gen Server update Messages >>>  
server port: 7777

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mrun\_[0m [280] - <<< \*\*\* TDB GEN SERVER \*\*\* update Message Received>>> received msg#0

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mrun\_[0m [281] - message:

<?xml version="1.0" encoding="UTF-8"?>

<ServerTargetFormatUpdate>

<ChangeDateTime>1312487503142</ChangeDateTime>

<ClientTargetFormat>FLT</ClientTargetFormat>

<Description>Server Updates to FLT target format</Description>

<UpdateList>

<Update>

<FeatureLabel>AL015</FeatureLabel>

<FeatureId>FLT\_0X0\_-5941746916707185650</FeatureId>

<FeatureType>EXTREF\_MODEL</FeatureType>

<GeometryList>

<Point>

<X>-116.59203122649177</X>

<Y>36.56318594343001</Y>

<Z>678.7466430664062</Z>

</Point>

<NodeAttributeList>

<AngleOfOrientation>0.0</AngleOfOrientation>

<ModelExtRefFilename>1ae4c4f1-812a-674e-99c2-cfa0c65d28d51-destroyed.flt</ModelExtRefFilename>

</NodeAttributeList>

</GeometryList>

</AttributeList>

```

    <Attribute>
      <Name>WID</Name>
      <Value>10.0</Value>
    </Attribute>
    <Attribute>
      <Name>HGT</Name>
      <Value>4.0</Value>
    </Attribute>
    <Attribute>
      <Name>Label</Name>
      <Value>AL015</Value>
    </Attribute>
    <Attribute>
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      <Value>0.0</Value>
    </Attribute>
    <Attribute>
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    </Attribute>
    <Attribute>
      <Name>LNT</Name>
      <Value>10.0</Value>
    </Attribute>
  </AttributeList>
</Update>
</UpdateList>
</ServerTargetFormatUpdate>

```

```

Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mcalculateThroughput_[0m [486] - message received time:
1312487503196
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mcalculateThroughput_[0m [504] - looking for ChangeDate tag
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mgetStringAttribute_[0m [556] - Attribute [name: ChangeDateTime]
[value: 1312487503142]
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mcalculateThroughput_[0m [509] - ChangeDate: 1312487503142
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mcalculateThroughput_[0m [522] - MESSAGE transmission time: 54
msec
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mcalculateThroughput_[0m [523] - 0.054 sec
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mcalculateThroughput_[0m [527] - message size: 1847 characters / bytes
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mrun_[0m [289] - <<<METRIC>>> server-to-client update message
throughput: 273629.6296296296 bps
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mrun_[0m [290] -
267.21643518518516 Kbps
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mrun_[0m [291] -
0.2609535499855324 Mbps
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1msetClientMessageForProcessing_[0m [371] - initializing xml_document
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::_[1misServerTdbUpdateMssage_[0m [434] - Determine if XML message is
sever update - looking for ServerTargetFormatUpdate tag
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::_[1mprocessServerMessage_[0m [355] - Processing Server Update message.
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message

```

INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mprocessServerMessage\_[0m [358] - update message processing start time: 1312487503476  
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_[0m [590] - looking for ServerTargetFormatUpdate tag  
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_[0m [686] - looking for ServerTargetFormatUpdate tag  
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_[0m [699] - processing server updates ...  
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mgetStringAttribute\_[0m [1216] - Attribute [name: ClientTargetFormat] [value: FLT]  
Aug 4, 2011 3:51:43 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_[0m [716] - processing format: FLT  
Aug 4, 2011 3:52:04 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_[0m [719] - done  
Aug 4, 2011 3:52:04 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mprocessServerTargetUpdate\_[0m [723] - all client formats updated.  
Aug 4, 2011 3:52:04 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mprocessServerMessage\_[0m [364] - update message processing end time: 1312487524649  
Aug 4, 2011 3:52:04 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mprocessServerMessage\_[0m [368] - MESSAGE processing time: 21.173 msec  
Aug 4, 2011 3:52:04 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.client.GenericClientConnectionHandler::\_[1mprocessServerMessage\_[0m [369] - 21.173 sec  
Aug 4, 2011 3:52:04 PM net.onesaf.ext.dpbtbrgen.services.common.Log message  
INFO: dpbtbrgen.services.tdbrepository.TdbRepositoryManager::\_[1mresetClientMessage\_[0m [382] - re-set xml\_document - set to null



**APPENDIX C:  
CHANGE AND UPDATE MESSAGE**



Example of OTF client to server XML message and server update messages for OTF, LTF and FLT are included in this section.

The possible minimum update message which could be send by and OTF client is shown bellow.

```

<?xml version="1.0" encoding="UTF-8"?>
<ClientTargetFormatChange>
  <ChangeDateTime>1249245926627</ChangeDateTime>
  <ClientTargetFormat>OTF</ClientTargetFormat>
  <Description>
    Changes to OTF target format
  </Description>
  <ChangeList>
    <Change>
      <FeatureType>Point</FeatureType>
      <FeatureLabel>BRIDGE_SPAN</FeatureLabel>
      <FeatureId>6267a6947fa511deb1a400123f7907a4</FeatureId>
      <GeometryList>
        <Point>
          <X>-116.64510838553932</X>
          <Y>34.92343137207773</Y>
          <Z>499.70000363793224</Z>
        </Point>
      </GeometryList>
      <AttributeList>
        <Attribute>
          <Name>GENERAL_DAMAGE_FRACTION</Name>
          <Value>3.0</Value>
        </Attribute>
      </AttributeList>
    </Change>
  </ChangeList>
</ClientTargetFormatChange>

```

In the above client to sever message fields are provided to identify the time at which the target format change took place (ChangeDateTime), the target format type (ClientTargetFormat) as well as the type of feature geometry (FeatureType) and attributes that changed (AttributeList) .

## **OTF client bridge change message**

However the OTF client provided more information that it's was required. The following is an actual message send by OTF client. Although the only modified attribute was the GENERAL\_DAMAGE\_FRACTION other attributes were provided as well.

```
<?xml version="1.0" encoding="UTF-8"?>
<ClientTargetFormatChange>
  <ChangeDateTime>1312481678620</ChangeDateTime>
  <ClientMachineName>lvcConstructive</ClientMachineName>
  <ClientPort>7777</ClientPort>
  <ClientTargetFormat>OTF</ClientTargetFormat>
  <Description>
    Changes to OTF target format
  </Description>
  <ChangeList>
    <Change>
      <FeatureType>Point</FeatureType>
      <FeatureLabel>BRIDGE_SPAN</FeatureLabel>
      <FeatureId>290f1ba2938911dcb44c00114311bce0</FeatureId>
      <GeometryList>
        <Point>
          <X>-117.02442457563224</X>
          <Y>34.90514491752665</Y>
          <Z>606.7955561382696</Z>
        </Point>
      </GeometryList>
      <AttributeList>
        <Attribute>
          <Name>GENERAL_DAMAGE_FRACTION</Name>
          <Value>7.0</Value>
        </Attribute>
        <Attribute>
          <Name>UNDERBRIDGE_CLEARANCE</Name>
          <Value>3.5</Value>
        </Attribute>
        <Attribute>
          <Name>BRIDGE_DESIGN</Name>
          <Value>STRINGER_BEAM</Value>
        </Attribute>
        <Attribute>
          <Name>PRIMARY_MATERIAL_TYPE</Name>
          <Value>MASONRY</Value>
        </Attribute>
        <Attribute>
          <Name>ORIENTATION_ANGLE</Name>
          <Value>0.9250245035569946</Value>
        </Attribute>
        <Attribute>
          <Name>COMPLETION_PERCENTAGE</Name>
          <Value>0.0</Value>
        </Attribute>
        <Attribute>
          <Name>TRANSPORTER</Name>
          <Value>OTHER</Value>
        </Attribute>
        <Attribute>
          <Name>PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION</Name>
          <Value>0.0</Value>
        </Attribute>
      </AttributeList>
    </Change>
  </ChangeList>
</ClientTargetFormatChange>
```

```

        </Attribute>
        <Attribute>
            <Name>LENGTH</Name>
            <Value>50.0</Value>
        </Attribute>
    </AttributeList>
</Change>
</ChangeList>
</ClientTargetFormatChange>

```

## **Server to client update messages**

### **Server to OTF client bridge update message**

```

<?xml version="1.0" encoding="UTF-8"?>
<ServerTargetFormatUpdate>
    <ChangeDateTime>1310839555466</ChangeDateTime>
    <ClientMachineName>lvcServer.localdomain</ClientMachineName>
    <ClientPort>7777</ClientPort>
    <ClientTargetFormat>OTF</ClientTargetFormat>
    <Description>Server Updates to OTF target format</Description>
    <UpdateList>
        <Update>
            <FeatureLabel>BRIDGE_SPAN</FeatureLabel>
            <FeatureId>290f1ba2938911dcb44c00114311bce0</FeatureId>
            <FeatureType>Point</FeatureType>
            <GeometryList>
                <Point>
                    <X>-117.02442457563225</X>
                    <Y>34.905144915315546</Y>
                    <Z>606.7953849667683</Z>
                </Point>
            </GeometryList>
            <AttributeList>
                <Attribute>
                    <Name>NUMERIC_OBJECT_IDENTIFIER</Name>
                    <Value>0</Value>
                </Attribute>
                <Attribute>
                    <Name>BLOCKAGE_PRESENT</Name>
                    <Value>>true</Value>
                </Attribute>
                <Attribute>
                    <Name>GENERAL_DAMAGE_FRACTION</Name>
                    <Value>7.0</Value>
                </Attribute>
                <Attribute>
                    <Name>UNDERBRIDGE_CLEARANCE</Name>
                    <Value>3.5</Value>
                </Attribute>
                <Attribute>
                    <Name>COLOURATION</Name>
                    <Value>BROWN</Value>
                </Attribute>
                <Attribute>
                    <Name>BRIDGE_DESIGN</Name>
                    <Value>STRINGER_BEAM</Value>
                </Attribute>
            </AttributeList>
        </Update>
    </UpdateList>
</ServerTargetFormatUpdate>

```

```

</Attribute>
<Attribute>
  <Name>PRIMARY_MATERIAL_TYPE</Name>
  <Value>MASONRY</Value>
</Attribute>
<Attribute>
  <Name>COMBUSTION_STATE</Name>
  <Value>NOT_BURNING</Value>
</Attribute>
<Attribute>
  <Name>SURFACE_MATERIAL_TYPE</Name>
  <Value>MASONRY</Value>
</Attribute>
<Attribute>
  <Name>COMPLEX_COMPONENT_IDENTIFIER</Name>
  <Value>1</Value>
</Attribute>
<Attribute>
  <Name>SNOW_ACCUMULATION</Name>
  <Value>NONE_PRESENT</Value>
</Attribute>
<Attribute>
  <Name>INTERCHANGE_TRAVERSABILITY</Name>
  <Value>NNNN</Value>
</Attribute>
<Attribute>
  <Name>SOURCE</Name>
  <Value>BATHYMETRY_0r5_ARC_MINUTE_DIGITAL_DATA_BASE</Value>
</Attribute>
<Attribute>
  <Name>ORIENTATION_ANGLE</Name>
  <Value>0.9250245035569946</Value>
</Attribute>
<Attribute>
  <Name>COMPLETION_PERCENTAGE</Name>
  <Value>0.0</Value>
</Attribute>
<Attribute>
  <Name>UNIVERSALLY_UNIQUE_ID</Name>
  <Value>290f1ba2938911dcb44c00114311bce0</Value>
</Attribute>
<Attribute>
  <Name>EMISSIVITY_QB_EM_BAND</Name>
  <Value>0.0</Value>
</Attribute>
<Attribute>
  <Name>FRONT_AND_AXIS_REFERENCE</Name>
  <Value>POSITIVE_X</Value>
</Attribute>
<Attribute>
  <Name>POINT_OBJECT_TYPE</Name>
  <Value>VERT_STRUCTURE</Value>
</Attribute>
<Attribute>
  <Name>TRANSPORTER</Name>
  <Value>OTHER</Value>
</Attribute>
<Attribute>
  <Name>LENGTH</Name>
  <Value>50.0</Value>
</Attribute>
<Attribute>
  <Name>PREPARED_EXPLOSIVE_DESTRUCTION_COMPLETION_FRACTION</Name>

```

```

    <Value>0.0</Value>
  </Attribute>
</AttributeList>
</Update>
</UpdateList>
</ServerTargetFormatUpdate>

```

## **Server to FLT client bridge update message**

```

<?xml version="1.0" encoding="UTF-8"?>
<ServerTargetFormatUpdate>
  <ChangeDateTime>1310839557290</ChangeDateTime>
  <ClientTargetFormat>FLT</ClientTargetFormat>
  <Description>Server Updates to FLT target format</Description>
  <UpdateList>
    <Update>
      <FeatureLabel>AQ040</FeatureLabel>
      <FeatureId>FLT_0X0_8274118836400194277</FeatureId>
      <FeatureType>EXTREF_MODEL</FeatureType>
      <GeometryList>
        <Point>
          <X>-116.59104719619879</X>
          <Y>36.57894236630533</Y>
          <Z>613.63037109375</Z>
        </Point>
        <NodeAttributeList>
          <AngleOfOrientation>36.03080394384989</AngleOfOrientation>
          <ModelExtRefFilename>261bridge-destroyed.flt</ModelExtRefFilename>
        </NodeAttributeList>
      </GeometryList>
      <AttributeList>
        <Attribute>
          <Name>WID</Name>
          <Value>12.0</Value>
        </Attribute>
        <Attribute>
          <Name>NOS</Name>
          <Value>12</Value>
        </Attribute>
        <Attribute>
          <Name>Label</Name>
          <Value>AQ040</Value>
        </Attribute>
        <Attribute>
          <Name>AOO</Name>
          <Value>36.03080394384989</Value>
        </Attribute>
        <Attribute>
          <Name>EXS</Name>
          <Value>7</Value>
        </Attribute>
      </AttributeList>
    </Update>
  </UpdateList>
</ServerTargetFormatUpdate>

```

## **APPENDIX D: TDB API INTERFACES**

## **TDB API Interface**

The TDB API interface described in the file `TdbApiInterface.java` describes the interface that the TDB formats must implement in order for the `TdbRepoManager` to implement the needed functions by the Onto-Driven TDB Regeneration Architecture. It provides the interface for the functions to initialize the native API, process XML messages, read, write and regenerate the particular TDB. The first section provides the interface, and next sections describe how this interface was implemented by OTF ERC API, the LTF API and the OpenSceneGraph OpenFlight plug-in API (FLT TDB).

### ***TdbApiInterface.java***

```
/*
 * TdbApiInterface.java
 *
 */

package net.onesaf.ext.dpbtbdrngen.services.tdbrepository;

import java.util.ArrayList;
import org.w3c.dom.Document;

import net.onesaf.ext.dpbtbdrngen.services.geoscratchpad.LayerOfFeatures;
import net.onesaf.ext.dpbtbdrngen.services.geoscratchpad.DataElement;
import net.onesaf.ext.dpbtbdrngen.services.geoscratchpad.TdbGen_Extents;
import net.onesaf.ext.dpbtbdrngen.services.geoscratchpad.TdbGen_Geometry.GeometryType;

/**
 * RMI Interface for APIs
 *
 * @author granielab
 */
public interface TdbApiInterface extends java.rmi.Remote {

    /**
     * shutdown API
     */
}
```

```

    */
    public void shutdown() throws java.rmi.RemoteException;

    /**
     * Initialize API
     *
     * @return - true if initialization was successful
     */
    public boolean initialize() throws java.rmi.RemoteException;

    /**
     * Given a XML document generate a List of DataElements
     *
     * Initial messages received by the server. The server converts the received
     * XML messages into DataElements using the TDB Api services.
     *
     * @param xml_document
     * @return ArrayList<DataElement>
     */
    public ArrayList<DataElement> processClientChange(Document xml_document) throws
    java.rmi.RemoteException;

    /**
     * Given a XML document incorporate TDB updates into all local Target formats
     *
     * Client receives the update message, decodes the XML and uses the front-end and
     * back-end to read, update and write an updated version of the TDB.
     *
     * @param xml_document
     */
    public void processServerUpdates(Document xml_document) throws
    java.rmi.RemoteException;

    /**
     * Process DataElement addition message
     *
     * @param xml_document
     * @return ArrayList<DataElement>
     */
    public ArrayList<DataElement> processClientAdd( Document xml_document ) throws
    java.rmi.RemoteException;

    /**
     * Given a list of DataElements generate a update message for clients
     *
     * @param dataElements
     * @return - xml_document message
     */
    public String generateClientUpdate(ArrayList<DataElement> dataElements) throws
    java.rmi.RemoteException;

    /**
     * Incorporate the given list of DataElement changes into the particular
     * target format
     *
     * @param changedDataElements
     */

```



```

    public void incorporateDataElementChanges(ArrayList<DataElement>
changedDataElements) throws java.rmi.RemoteException;

    /**
     * Regenerate TDb - trigger TDB regeneration (if necessary)
     *
     */
    public void regenerate() throws java.rmi.RemoteException;

    /**
     * For the provided extents load TDB and generate a layer of terrain for the
GeoScratchPad
     *
     * @param extents
     * @return
     */
    public LayerOfFeatures readTerrain(TdbGen_Extents extents) throws
java.rmi.RemoteException;

    /**
     * For the provided extents load TDB and generate a layer of features for the
GeoScratchPad
     *
     * @param extents
     * @return
     */
    public LayerOfFeatures readFeatures(TdbGen_Extents extents, GeometryType
geomTypes) throws java.rmi.RemoteException;

    /**
     * Create features from DataElement list
     *
     * @param dataElements
     * @return
     */
    public boolean createFeatures(ArrayList<DataElement> dataElements) throws
java.rmi.RemoteException;

    /**
     * find and read local version of DataElement
     *
     * @param changed or dataElement of interest
     * @return - local DataElement
     */
    public DataElement readFeature(DataElement dataElement) throws
java.rmi.RemoteException;

    /**
     * Get layer name for this format
     *
     * @return layer name
     */
    public String getFeatureLayerName() throws java.rmi.RemoteException;

    /**

```

```

    * Update all the ontologies. Updates are by format. Assumes that the names
    * of all the Tdb are maintained by this API.
    *
    */
public void updateTdbOntologies() throws java.rmi.RemoteException;

/**
 * Is the provided Geometry type supported by this format
 *
 */
public boolean isGeometryTypeSupported(GeometryType type) throws
java.rmi.RemoteException;

/**
 * Provide the name of the TDB which includes the provide extents
 */
public String getTDBName(TdbGen_Extents extents) throws java.rmi.RemoteException;

/**
 * get supported format
 */
public TdbApi.TdbFormats getSupportedTdbFormat() throws java.rmi.RemoteException;
}

```

### **Remote Method Invocation**

The ERC version used by OneSAF required a legacy compiler (gcc 3.3). The other two API s (LTF and OpenSceneGraph) use more up to date compilers. Many attempts were made to establish a common environment for all three API. Eventually it was determined that conflicts between two different visions of dynamic link libraries were causing the runtime crashes. Binary incompatibility between the different versions of the compilers was the cause of the problem.

To avoid conflicts and to isolate the native TDB APIs it was decided to use java Remote Method Invocation methods to isolate.

### **OTF Regeneration**

OneSAF ERC does not directly support partial OTF regeneration. This is different than dynamic terrain which although is store with the OTF it does not alter the original OTF features. ERC first loads the OTF and then the dynamic terrain features are applied to the in-memory OTF. The intent of this work was to implement partial regeneration so that the OTF on disk contained the actual changes.

The mechanism for the TDB regeneration was bases on a set of tools and procedure used to update OTF from one version to another. Every time a new version of the ERC was release it was necessary to re compile all the existing OTFs so that they could be used by the new ERC version. The technique used by OneSAF generated an intermediate representation which contained features and terrain information contained in the previous version of ERC. Using this feature and terrain information a new OTF form the new ERC release was generated.

The first step used the stand alone test driver (standalone\_td) tool to generate binary representations of OTF TDB using the old ERC version. The standalone\_td option "(41) Dump Terrain Database to Binary" extracts the complete OTF to a directory. The conversion process was guided by a number of configuration files and the test\_of application located in the SWR\_dev\_d/src/net/onesaf/services/erc/native/src/apps/terrain\_compiler/test directory.

After conversion the information was stored to a terrain\_database directory. This new OTF could then be used by the new ERC version.

The generated binary representation of the myNTC\_terrain\_database OTF was used as cached version of the OTF. This OTF was loaded into memory using similar techniques as those used by the test\_otf application. At that point the OTF/ERC changes or updates were incorporated and eventually written to disk.

The code that controlled ERC Java Native Interface (JNI) was modified to include feature updates and regeneration. Code is provided in the function `Java_net_onesaf_core_services_erc_TerrainCompilerApi_recompile__`.

### **LTF Regeneration Support**

Add description of LTF regeneration

### **FLT Regeneration support**

#### ***Attribute Augmentation***

On some formats like OpenFlight the classification and attributes content is not sufficient to support adequate relationships between components in the virtual format and other formats. Therefore it was necessary to add classification and attributes that could be relate components in the virtual format. This also required the definition of unique identifiers which could be assigned to these components. In OpenFlight the

scene graph is composed node such as group, level of detail, external reference, switch and object nodes. The generation of unique ids for external reference nodes included the TDB file name and external reference model file name. APPENDIX D: provides more information on the use of unique ids For OpenFlight this allowed for the link of FLT TDB components to FLT instance or individual data which contained, extents, related features, integrity and correlation tests, and transformation information.

### **Client native TDB read and write back-end interface**

The following source code was used to implement the necessary TDB API interface using the native APIs. This included a Java interface code as well as Java Native Interface (JNI) for CPP stub implementations. The TDB Repository Manager used the TDB API back-end implementations to incorporate read and updates the client TDB.

Source code can be provided on request

**APPENDIX E:  
SOURCE CODE**

The software is divided into directories by their function. The following are the main source code directories;

- Directory: agents/
- Directory: blackboard/
- Directory: clients/
- Directory: common/
- Directory: geoscratchpad/
- Directory: models/
- Directory: ontology/
- Directory: server/
- Directory: tdbrepository/
- Directory: test/

The java source code is over 1000 lines long and it can be provided on request.

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