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Hanford Site Technical Baseline Data Dictionary

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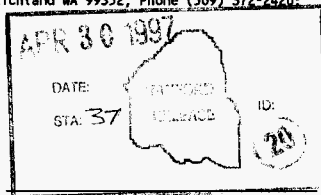
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Abstract: The HSTD is the repository for Hanford site technical baseline data. It is used by Site System Engineering as the primary SE tool. This document defines the essential (required by RLID 430) HSTD data elements and their relationships.

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HANFORD SITE TECHNICAL BASELINE DATABASE DATA DICTIONARY

1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this Data Dictionary is to provide information concerning the structure and information contained in the Hanford Site Technical Baseline Database (HSTD).

1.2 SCOPE

This Data Dictionary addresses the data elements, the attributes of each data element, and the relationships between data elements that are utilized within the RDD-100[®] systems engineering tool to describe and document the HSTD. The mechanics of the use of the RDD-100[®] tool to develop the database and to run reports on the database are covered in the user manual that comes with each copy of RDD-100[®] and are not within the scope of this document.

1.3 BACKGROUND

The RDD-100[®] suite of software tools support a structured systems engineering approach to developing complex systems. The RDD-100 tool suite is being used at Hanford to manage the site's and projects' technical baselines, including supporting data. The tool implements a object-oriented data structure in which data is represented as data elements (E), relationships (R) between data elements, and attributes (A) associated with each data element. Understanding of this ERA structure forms the basis for understanding the information contained in this document. The ERAs contained in this document are a subset of the schema ERAs available within the RDD-100[®] tool (see reference 1.6 b). The software requirements for the purchase of RDD-100 are documented in the software requirements specification (HNF-SD-WM-SDR-014).

1.4 APPLICABILITY

Information contained in this Data Dictionary is applicable to the HSTD as maintained by the Systems Engineering and Integration organization. Data submitted for inclusion into the HSTD will be checked for compliance with the mandatory attributes and relationships described in this document prior to being incorporated into a revised HSTD.

¹RDD-100 is a registered trademark of Ascent Logic Corporation

1.5 PREREQUISITES

The user should have a comfortable grasp of the Element / Relationship / Attribute concept that underlies RDD-100®. The user of this document should have at least the level of knowledge that the "Introduction to RDD-100®" training from Ascent Logic provides.

1.6 REFERENCE DOCUMENTATION

- a) RDD-100® Users Guide, Ascent Logic Corporation
- b) Schema Reference, Ascent Logic Corporation
- c) Printout of the Schema Description Report generated from the Hanford Site Technical Baseline
- d) Technical Issues Management List, HNF-MD-030

1.7 FONTS AND CONVENTIONS

The text in this document uses the following conventions: element types are in italics (e.g., *Component*); relation names are in lower case bold (e.g., **documented by**), and attributes are upper/lower case (e.g., Description). Mandatory attributes and relationships are underlined (e.g., Description, and documented by). Specific instances of elements or values of attributes are in quotation marks (e.g., the *TimeFunction* "Pump Liquid Waste" has as a Duration "10.3"). The data type of a given attribute is enclosed in square brackets (e.g., The attribute Description is of type [string]).

1.8 DEFINITIONS

ALC	Ascent Logic Corporation, the developers of RDD-100®.
Attribute	Attributes describe objects that are represented by elements. Examples of attributes are Name, Description, Size, Number, Maximum Value, Minimum Value, and Units.
Behavioral Requirements	Requirements that influence the manner in which the system behaves. A system's behavior is defined by what the system does and how well the system performs what it does. Behavioral requirements are then either functional or performance requirements and are linked to the system functions, which, in-turn, are linked to the architectures performing the functions.
Component	The hardware and software required to implement the functionality contained in the <i>TimeFunction(s)</i> and <i>DiscreteFunction(s)</i> , e.g., a subsystem, system, or major facility.
DVF	Dynamic Verification Facility - The modeling capability of RDD-100®.

Element	Objects contained in the HSTD used to describe the Hanford Environmental Management System, e.g. <i>TimeFunction</i> , <i>TimeItem</i> , <i>Component</i> , <i>SystemRequirement</i> , <i>CriticalIssue</i> , <i>Decision</i> , and <i>Engineer</i> .
Element Instance	An occurrence of a specific element type in the HSTD.
FNet	An automatically generated representation of the decomposition of a TimeFunction or Scenario. Since it is automatically generated by RDD-100®, further definition of this element will not be addressed in this document, but their relationships to the other elements contained in this document are depicted in Appendix A.
Instance	An occurrence of a specific element, relationship, or attribute.
Leaf Level	In hierarchical element types, a leaf level element is an element which is not broken into component parts.
Non-behavioral Requirements	Requirements that apply to the system architecture selected to perform the functions. Non-behavioral requirements are linked directly to the system architectures to which they apply. Environmental, design, and construction requirements are examples of non-behavioral requirements.
Performance Requirements	Requirements that indicate how well a function must be performed.
Relationship	Relationships describe the role of each element relative to other elements. Relationships are a two-way link, and therefore, provide forward and backward traceability from either element in the relationship. Examples of relationships are <i>incorporates</i> , <i>incorporated by</i> , <i>owns</i> , <i>owned by</i> , <i>documents</i> , and <i>documented by</i> .
Schema	A collection of ERAs available for use in the HSTD. For a given available element this would include the elements, attributes, and relations as defined in this Data Dictionary, as well as others that may be available but not used.

1.9 PRIMARY STRUCTURE OF THE HANFORD SITE TECHNICAL BASELINE DATABASE (HSTD)

A graphical depiction of the primary structure (main elements and relationships) of the HSTD is contained in Appendix A. The appendix addresses the elements and relationships utilized to build the Hanford Environmental Management System, along with the elements of a scenario (specifically the Life Cycle Asset Management [LCAM] scenario) and their relationship to the Hanford Cleanup System elements. The appendix also separately addresses the elements and relationships associated with appending of comments, categorization of elements, traceability of requirements, issue tracking and

resolution, and establishment of hierarchical and organizational relationships. These are addressed separately since they are situations that may exist and therefore have a relationship with almost any other element of the HSTD.

Appendix A addresses the primary structure of the HSTD only. Other elements, relationships, and associated attributes are available within the HSTD as implemented in the RDD-100® systems engineering tool. These ERAs are described in the reference documentation listed above. The primary ERAs are further described in Section 2.0 of this document.

2.0 ELEMENTS, RELATIONSHIPS, AND ATTRIBUTES

2.1 COMMON ATTRIBUTES. All element types in RDD-100® have the following common attributes:

Author: [symbol] When an element is created, RDD-100® automatically fills this in using the contents of the Author field under User Preferences. This attribute documents the originator of an element instance. This can be user modified in the same manner as any other attribute. For example, if an engineer creates a Critical Issue for a manager who does not have access to RDD-100®, the engineer would overwrite the provided name with the manager's name.

Creation Date: [date] When an element is created, RDD-100® automatically fills this in using the current date.

Modification Date: [date] When an element is created or changed in any way, RDD-100® automatically fills this in using the current date.

Modification Time: [time] When an element is created or changed in any way, RDD-100® automatically fills this in using the current time.

Name: [string] Provides the element with an identifier which must be unique within its element type. An element is created when its name is defined.

2.2 COMMON RELATIONSHIPS. All elements in RDD-100® have the following relationships:

viewed by an RDD-100® diagram view. Identifies all of the types of views that the element has been shown as.

currently viewed by an RDD-100® diagram view. Identifies the most recent view (i.e., IDEF0, custom hierarchy) that the element has been shown as.

owned by Engineer. Identifies the owner of an element. RDD-100® automatically makes this relationship when an element instance is first created. The owner is the name of the Engineer in the Author field under User Preferences set by the user. This may be an individual's name or a more global designation such as "Site Systems Engineering," "TWRS Systems Engineering," etc. The element type Engineer can be

found in the System Administration facility. This relationship is used as a part of the change control process.

2.3 UNIQUE ELEMENTS, ATTRIBUTES, AND RELATIONSHIPS

2.3.1 Category

Definition/Usage

Categories are a group or set of data elements that share common characteristics. Categorization of information and data is used as a means of placing element instances in groups for ease of analysis and reporting.

ATTRIBUTES

Category elements have the common attributes plus the following:

Category Element: [enumerated] "nil" (default), "Component," "CriticalIssue," "Decision," "DiscreteFunction," "DiscreteItem," "Organization," "SystemRequirement," "Scenario," "Source," "TimeFunction," "TimeItem," "VerificationRequirement." Used to indicate that this instance of *Category* is intended to be applied only to the chosen element type.

Description: [string] Used to describe what the link to this element is meant to signify.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the category contained in the element instance.

RELATIONSHIPS

Category elements have the common relationships, plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. Used to group elements.

categories *Any element*.

incorporated by *Category*. Allows for the building of a hierarchy of *Category* elements. For example, lower level instances such as "Rail Transport," "Truck Transport," and "Ship Transport" are **incorporated by** a high level *Category* "Transportation."

incorporates *Category*. Allows for the building of a hierarchy of *Category* elements. For example, a high level *Category* "Transportation" **incorporates** lower level instances such as "Rail Transport," "Truck Transport," and "Ship Transport."

2.3.2 Comment

Definition/Usage

Comments are textual information the user wants to relate to element instance(s). The difference between a *Comment* and a *CriticalIssue* is: a *CriticalIssue* requires action (i.e., it must be dealt with and **resolved by** a *Decision*) and a *Comment* does not.

ATTRIBUTES

Comment elements have the common attributes plus the following:

Description: [string] Used to describe what the link to this element is meant to signify.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

RELATIONSHIPS

Comment elements have the common relationships, plus the following:

annotates *Any element.*

annotated by *Comment.* Used to associate any *Comment* with another *Comment.*

categorized by *Category.* Allows the user to group elements.

primary is *Organization.* Shows the *Organization* that has primary interest in the *Comment.*

secondary is *Organization.* Used to show the *Organizations* which have a secondary interest in the *Comment.*

2.3.3 Component

Definition/Usage

Component elements are used to accommodate the system architecture information. They are hierarchically structured through the **built-in** and **built-from** relation. Thus a *Component* can represent an entire system or any lower part of a system.

The interaction between *Components* is represented in the *Component connects to Interface* relation. The *Interface* is the collection point for all links joining a pair of *Components* (See *Interface* and *ItemLink* elements). Each *Component connects to* at least one *Interface*. Connected *Components* should be at the same level of the hierarchy.

A *Component* is linked to the function it performs by the **performs** relation. Alternatively, the lowest level *Component* in the component hierarchy is linked to the corresponding lowest level *TimeFunction* or *DiscreteFunction* in the functional hierarchy using the **allocates** relation.

The *Component* is used to capture the Hanford Site Environmental Management System hierarchy, including Major Facilities, e.g., "Plutonium Uranium Extraction (PUREX) Plant," "Plutonium Finishing Plant (PFP)," "Canister Storage Building (CSB)," "Reactors on the River Groundwater Operational Units," and "Central Plateau Soil Site Operational Units."

ATTRIBUTES

Component elements have the common attributes, plus the following:

Component Type: [enumerated] "nil," "CSC" (Computer Software Component), "CSCI" (Computer Software Configuration Item), "CSU" (Computer Software Unit), "Environment," "External System," "Facility," "Human," "HWCI" (Hardware Configuration Item), "HW element," "Part," "Subsystem," "System," "System Segment," "Task."

Description: [string] Used to describe the component, system, subsystem, major facility, etc., represented by the element instance.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

RELATIONSHIPS

Component elements have the common relationships plus the following:

annotated by Comment. Used to associate any non-requirement, non-issue text with an element.

built from Component. Used to show how a *Component* is built from lower level *Components*.

built in Component. Used to show how a *Component* is built in its parent *Component*.

Note: Either **built from** or **built in** are mandatory, depending on hierarchy.

categorized by Category. Used to group elements.

connected to Interface. This relationship is used to show how one *Component* is connected to another via an *Interface*.

has context FNet The target *FNet* is used to include major facility into the life cycle *Scenario* of the *Component*.

inputs from *ItemLink*. This relation is used to link the destination *Component* to an *ItemLink*.

outputs to *ItemLink*. This relation is used to link the source *Component* to an *ItemLink*.

performs *DiscreteFunction*, *TimeFunction*. This relationship is used to link a *Component* to a *TimeFunction* that will represent the *Component*'s behavior.

primary is *Organization*. Used to show the *Organization* which has responsibility for the *Component*.

raises *CriticalIssue*. Used to indicate that someone has an issue with an aspect of the *Component*.

resulted from *Decision*. The target *Decision* is used to document a selection of architectural alternatives, and the alternative selected or the choice that resulted in an enabling assumption.

secondary is *Organization*. Used to show the *Organizations* which have an involvement in the *Component*.

traced from *SystemRequirement*. The target *SystemRequirement* is used to allocate non-behavioral requirements to the *Component*.

2.3.4 CriticalIssue

Definition/Usage

CriticalIssues are problems with the system design that must be resolved by a *Decision*. They are used to identify, track and provide traceability of conditions to be resolved. Any element within the schema may have a *CriticalIssue* attached. If the problem cannot be resolved without further analysis, the Description attribute must give a top-level explanation of the analysis that must take place. Each *CriticalIssue* must have an *Organization* element to define the individual responsible to see that it is resolved.

ATTRIBUTES

CriticalIssue elements have the common attributes plus the following:

Actual Date: [date] The date that the issue was finally resolved. The Actual Date attribute is mandatory when the issue is finally resolved.

Description: [string] The problem statement or the identification of a need for additional analysis.

Due Date: [date] The date the *CriticalIssue* was originally scheduled to be resolved.

Impact: [string] A list of items that will be affected by the resolution of the issue that are not already linked to the *CriticalIssue*.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Priority: [enumerated] "A (Very High)," "B (High)," "C (Medium)," "D (Low)." (See reference 1.6 d).

Title: [string] The title of the element instance.

RELATIONSHIPS

CriticalIssue elements have the common relationships plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. Used to group elements.

dependency of *CriticalIssue*. Used to show which *CriticalIssues* cannot be resolved until the current *CriticalIssue* has been resolved.

dependent on *CriticalIssue*. Used to show the *CriticalIssues* which must be resolved before the current *CriticalIssue* may be resolved.

primary is *Organization*. The organization or person responsible to ensure the *CriticalIssue* is resolved.

raises *CriticalIssue*. The target *CriticalIssue* is used if the original *CriticalIssue* has a problem.

raised by *Any element*. Used to indicate the element with which a *CriticalIssue* is associated.

resolved by *Decision*. The target *Decision* is used to capture the information that resolves the *CriticalIssue* or results in an enabling assumption. The target relationship is mandatory when the issue is resolved or if an enabling assumption has been made.

secondary is *Organization*. Used to show the *Organizations* which have an interest in the outcome of the *CriticalIssue*.

2.3.5 Decision

Definition/Usage

Decision elements are used to document the resolution of *CriticalIssues*. The various attributes of the *Decision* element document the problem, a selection of alternatives, and the choice made.

For traceability, each *Decision* must be documented by a *Source* element that provides information concerning the source of the decision.

ATTRIBUTES

Decision elements have the common attributes plus the following:

Alternatives: [string] The alternatives considered for resolving the problem; usually two to four alternatives are listed.

Choice: [string] Contains the alternative that was decided upon. The Choice attribute is mandatory at the time an alternative is selected or a decision is made.

Decision Vehicle: [string] Method or process used to reach the decision (e.g., Optimization Techniques, Simulation/Modeling, etc.).

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Problem: [string] An analysis of the problem resolved by this *Decision*.

Status: [enumeration] "nil" (default), "Open," "Enabling Assumption," "Resolved." Indicates whether the *Decision* is interim, final or needs to be dealt with. The Status attribute of a given *Decision* may change over time.

Title: [string] The title of the element instance.

RELATIONSHIPS

Decision elements have the common relationships plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. Used to group elements.

documented by *Source*. The document that the *Decision* used as a basis for the choice. A *Decision* must be **documented by** a *Source* if the *Decision* Status is set to "Enabling Assumption" or "Resolved".

primary is *Organization*. The organization or person responsible for making the decision. A *Decision* must have a **primary is** relationship to an *Organization* if the *Decision* Status is set to "Open" or "Enabling Assumption."

resolves *CriticalIssue*. Links the *Decision* to the *CriticalIssue* which it was created to address.

results in *All Elements*. Used to document the effect the decision or enabling assumption has on the HSTD e.g., the target *Component* could be used to document a selection of architectural alternatives. The target *SystemRequirement* could be used to document the result of a *Decision* concerning the interpretation of a higher level *SystemRequirement*. The target *SystemRequirement* could also be used to document the result of a

Decision that is enabling assumption.

raises *CriticalIssue*. Used when an issue has been raised with some aspect of the *Decision*.

secondary is *Organization*. Used to show the *Organization(s)* that are affected by the outcome of the *Decision*, but are not the decision maker.

2.3.6 DiscreteFunction

Definition/Usage

A *DiscreteFunction* is a function at the lowest level of interest. Unlike a *TimeFunction*, a *DiscreteFunction* can not be decomposed into *TimeFunctions* or *DiscreteFunctions*.

ATTRIBUTES

DiscreteFunction elements have the common attributes plus the following:

Description: [string] The element description.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

RELATIONSHIPS

DiscreteFunction elements have the common relationships plus the following:

allocated to *Component*. Defines the *Component* that performs the *DiscreteFunction*.

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. Used to group elements.

inputs *DiscreteItem*. Allows the user to show the flows which the *DiscreteFunction* is receiving.

outputs *DiscreteItem*. Allows the user to show the flows for which the *DiscreteFunction* is a source.

performed by *Component*. This relationship is used when the System Specifications are being formulated. It links the *DiscreteFunction* to the *Component* that will perform the function.

primary is *Organization*. Use to designate the *Organization* that is primarily responsible for the element.

raises *CriticalIssue*. Used to show that someone has an issue with the *DiscreteFunction*.

referred by *FNet*. Identifies the *FNet* that the Function is on. Maintained by RDD-100® and cannot be modified by the user.

resulted from *Decision*. Used to show the *Decision* which caused the *DiscreteFunction* to be created.

secondary is *Organization*. Use to designate the *Organization* that has secondary responsibility for the element.

traced from *SystemRequirement*. The target *SystemRequirement* is used to link a functional requirement with its corresponding function.

2.3.7 DiscreteItem

Definition/Usage

DiscreteItems are used to represent the inputs and outputs of functional elements such as *Scenarios*, *DiscreteFunctions* and *TimeFunctions*. They are the lowest level of decomposition of a product and represent products such as information, waste streams, canisters, etc. Unlike *TimeItems*, *DiscreteItems* cannot be further decomposed.

ATTRIBUTES

DiscreteItem elements have the common attributes, plus the following:

Data Type: [enumerated] "nil" (default), "Boolean," "Float," "Integer," "String," "Text," "Iarray," "Farray," "Sarray," "Blob (undefined Abs)," "File (ASCII, bin, etc.)," "Record," or "Database."

Description: [string] The element description.

IDEFO Type: [enumerated] "Input," "Control," "Mechanism." Specifies the type of IDEFO element the *DiscreteItem* is intended to be.

Item Type: [enumerated] "nil" (default), "physical," "data," "digital," "event."

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

RELATIONSHIPS

DiscreteItem elements have the common relationships, plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

carried by *ItemLink*. Used to show which *ItemLinks* the current *TimeItem* flows through.

categorized by *Category*. Used to group elements.

forecasted by *MaterialForecast*, *WasteForecast*, *InfrastructureForecast*, *EventForecast*. Used to show the forecast for the product represented by the *DiscreteItem*.

illustrated by *DVFChartDescription*. Used to associate a graphical depiction contained in a *DVFChartDescription*, such as a waste profile, with its associated *TimeItem*.

input to *Scenario*, *TimeFunction*, *DiscreteFunction*. Used to show the functions to which the current *TimeItem* flows are an input.

output from *Scenario*, *TimeFunction*, *DiscreteFunction*. Used to show the functions from which the current *TimeItem* is an output.

primary is *Organization*. Use to designate the *Organization* that is primarily responsible for the element.

raises *CriticalIssue*. Used to show that someone has an issue with the *DiscreteItem*.

resulted from *Decision*. Used when the current *DiscreteItem* was created as a result of the resolution of a *Decision*.

secondary is *Organization*. Use to designate the *Organization* that has secondary responsibility for the element.

traced from *SystemRequirement*. Used to associate Non-Behavioral requirements.

2.3.8 DVFChartDescription

Definition/Usage

DVFChartDescription is a data element that is utilized to capture the data points necessary to depict information in chart form.

ATTRIBUTES

DVFChartDescription elements have the common attributes plus the following:

Description: [string] The element description.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Raw Data Points: [ordered collection] Used to store the data points for generating a graph.

Title: [string] The title of the element instance.

X Label: [string] Used to define the label for the X axis of a graph.

Y Label: [string] Used to define the label for the Y axis of a graph.

RELATIONSHIPS

DVFCartDescription elements have the common relationships plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. Used to group elements.

illustrates *TimeItem* or *DiscreteItem* Used to associate the *DVFCartDescription* with the target behavioral item.

2.3.9 DVFTimeLineDescription

Definition/Usage

DVFTimeLineDescription is a data element that is utilized to capture the time line information concerning the outputs of a *Scenario*.

ATTRIBUTES

DVFTimeLineDescription elements have the common attributes plus the following:

Description: [string] The element description.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

RELATIONSHIPS

DVFTimeLineDescription elements have the common relationships plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. Used to group elements.

illustrates *Scenario* Used to associate the *DVFTimeLineDescription* with the target *Scenario*.

2.3.10 EventForecast

Definition/Usage

EventForecast is a data element that is utilized to capture the estimated events for a specific behavior item. It contains event forecast information for a specific fiscal year.

ATTRIBUTES

EventForecast elements have the common attributes plus the following:

Description: [string] The element description.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Schedule Date: [date] Schedule date for the event.

Title: [string] The title of the element instance.

RELATIONSHIPS

EventForecast elements have the common relationships plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. Used to group elements.

documented by *Source* Allows the user to document the source of the information contained in the *EventForecast*.

forecasts *DiscreteItem*, *TimeItem* Allows the user to show the *DiscreteItem* or *TimeItem* for which the event is being forecasted.

primary is *Organization*. Shows the *Organization* which is responsible for the information contained in the *EventForecast*.

raises *CriticalIssue*. Used to show that someone has an issue with the *EventForecast*.

resulted from *Decision*. Used to show the *Decision* which caused the *EventForecast* to be created.

secondary is *Organization*. Shows the *Organization* which has a secondary interest in the information contained in the *EventForecast*.

2.3.11 InfrastructureForecast

Definition/Usage

InfrastructureForecast is a data element that is utilized to capture the estimated infrastructure requirements for a specific behavior item. It contains infrastructure forecast information for a specific fiscal year.

ATTRIBUTES

InfrastructureForecast elements have the common attributes plus the following:

Description: [string] The element description.

Fiscal Year: [Integer-4 digit] Fiscal year for which the *InfrastructureForecast* is being made, i.e., 1997.

Infrastructure Type: [enumerated list] Type of infrastructure being forecasted; i.e., "Allocated Land," "Analytical Laboratory Services," "Bioassay and Dosimetry Services," "Biological Laboratory Services," "Building Maintenance," "Clean Laundry," "Custodial Services," "Data (HLAN) Transmission," "Development Laboratory Services," "Electricity," "Energy Management Services," "Environmental Molecular Science Lab Services," "Fabrication Shop Services," "Guaranteed Ride Home," "Hanford Road System Heavy Traffic," "Heavy Equipment," "Heavy Trucks," "In-Field Laboratory Services," "Industrial Hygiene Services," "Lifting (Cranes)," "Non-radiation Standards (Calibrations)," "Office Space (Leased)," "Office Space (Infrastructure Owned)," "Office Space (Program Owned)," "Pager Service," "Potable Water," "Radioactive Standards (Calibrations)," "Rail Transportation," "Raw Water," "Sedans/Light Trucks," "Steam," "Storage Space (Infrastructure Owned)," "Storage Space (Leased)," "Storage Space (Program Owned)," "Taxi Service," "Video Communications," and "Voice (Telephone) Communication."

Maximum Value: [Floating Point] Maximum value of infrastructure forecasted for the fiscal year.

Mean Value: [Floating Point] Mean value of infrastructure forecasted for the fiscal year.

Minimum Value: [Floating Point] Minimum value of infrastructure forecasted for the fiscal year.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

Units: [text] Unit of measure for the forecasted infrastructure.

RELATIONSHIPS

InfrastructureForecast elements have the common relationships plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. Used to group elements.

documented by *Source* Allows the user to document the source of the information contained in the *InfrastructureForecast*.

forecasts *DiscreteItem*, *TimeItem* Allows the user to show the *DiscreteItem* or *TimeItem* for which the infrastructure is being forecasted.

primary is *Organization*. Shows the *Organization* which is responsible for the information contained in the *InfrastructureForecast*.

raises *CriticalIssue*. Used to show that someone has an issue with the *InfrastructureForecast*.

resulted from *Decision*. Used to show the *Decision* which caused the *InfrastructureForecast* to be created.

secondary is *Organization*. Shows the *Organization* which has a secondary interest in the information contained in the *InfrastructureForecast*.

2.3.12 Interface

Definition/Usage

An interface is where two or more *Components* meet and act on, or interact with, each other. *Interfaces* are used to define the physical connection between two or more *Components*. *Interfaces* can be structured in a hierarchy in the same way as *Components*. An *Interface* at a given level of the *Component* hierarchy may be bundled into a higher level *Interface* at a higher level of the *Component* hierarchy.

ATTRIBUTES

Interface elements have the common attributes plus the following.

Description: [string] The description of the element instance.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

RELATIONSHIPS

Interface elements have the common relationships, plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

built from *Interface*. Used to build a hierarchy of subordinate *Interfaces*.

built in *Interface*. Used to link to the parent *Interface*.

categorized by *Category*. Used to group elements.

connects to *Component*. Used to show which *Components* the current *Interface* is linked to.

contains *ItemLink*. Used to show the *ItemLinks* which are bundled into the current *Interface*.

primary is *Organization*. The organization or person responsible for the *Interface*.

raises *CriticalIssue*. Used to show that someone has an issue with the *Interface*.

secondary is *Organization*. Used to show the *Organization(s)* other than the primary that are affected by the *Interface*.

traced from *SystemRequirement*. The target *SystemRequirement* is used to allocate non-behavioral requirements to the *Interface*.

2.3.13 ItemLink

Definition/Usage

The *ItemLink* element is used to represent a one-directional pathway for one or more *TimeItems* or *DiscreteItems* (inputs and outputs) to be carried from one *Component* to another. They represent the physical object that carries the items. For example, "Ten Tons of Soil" would be an instance of a *DiscreteItem*, "Full Dump Truck" would be an instance of an *ItemLink*.

ATTRIBUTES

ItemLink elements have the common attributes, plus the following:

Capacity: [integer] Indicates how many units of the item can be carried from one process to the other per unit of time.

Description: [string] The description of the element instance.

Is Constrained: [enumerated] "false" (default), "true." If set to true, the simulator will simulate the time for item flow based upon the item size and the capacity of the *ItemLink*.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

RELATIONSHIPS:

ItemLink elements have the common relationships, plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

carries *TimeItem, DiscreteItem*. Used to show which behavioral items through the current *ItemLink*.

categorized by *Category*. Used to group elements.

input to *Component*. Used to show the *Component* that the *ItemLink* flows in to.

is contained by *Interface*. Shows the *Interface* which the *ItemLink* is aggregated into.

output to *Component*. Used to show the *Component* that the *ItemLink* flows out of.

primary is *Organization*. The organization or person responsible for the *ItemLink*.

secondary is *Organization*. Used to show the *Organization(s)* other than the primary that are affected by the *ItemLink*.

raises *CriticalIssue*. Shows that an issue has been raised on the current *ItemLink*.

resulted from *Decision*. The target *Decision* is used to document the *Decision* that resulted in the *ItemLink*.

traced from *SystemRequirement*. The target *SystemRequirement* is used to allocate behavioral requirements to the *ItemLink*.

2.3.14 MaterialForecast

Definition/Usage

MaterialForecast is a data element that is utilized to capture the estimated material (i.e., non-waste) flow for a specific behavior item. It contains material forecast information for a specific fiscal year.

ATTRIBUTES

MaterialForecast elements have the common attributes plus the following:

Description: [string] The element description.

Fiscal Year: [Integer-4 digit] Fiscal year for which the material forecast is being made; i.e., 1997.

Forecast Type: [enumerated list] Type of material forecast; i.e., "Begin Inventory," "Received," "Generated," "Reduced," "Transferred," "Disposed," and "End Inventory."

Material Type: [enumerated list] Type of material being forecasted; i.e., "Cesium (Cs)," "Depleted Uranium (DU)," "Highly Enriched Uranium (HEU)," "Low Enriched Uranium (LEU)," "Miscellaneous Special Nuclear Material," "Miscellaneous Nuclear Material," "Miscellaneous Nuclear Fuels," "Natural Uranium (NU)," "Plutonium (Pu)," "Sodium (Na)," "Spent Nuclear Fuel (SNF)," and "Strontium (Sr)."

Maximum Value: [Floating Point] Maximum value of material forecasted for the fiscal year.

Mean Value: [Floating Point] Mean value of material forecasted for the fiscal year.

Minimum Value: [Floating Point] Minimum value of material forecasted for the fiscal year.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

Units: [text] Unit of measure for the forecasted material.

RELATIONSHIPS

MaterialForecast elements have the common relationships plus the following:

annotated by Comment. Used to associate any non-requirement, non-issue text with an element.

categorized by Category. Used to group elements.

documented by Source Allows the user to document the source of the information contained in the *MaterialForecast*.

forecasts DiscreteItem, TimeItem Allows the user to show the *DiscreteItem* or *TimeItem* for which the material is being forecasted.

primary is Organization. Shows the *Organization* which is responsible for the information contained in the *MaterialForecast*.

raises *CriticalIssue*. Used to show that someone has an issue with the *MaterialForecast*.

resulted from *Decision*. Used to show the *Decision* which caused the *MaterialForecast* to be created.

secondary is *Organization*. Shows the *Organization* which has a secondary interest in the information contained in the *MaterialForecast*.

2.3.15 Organization

Definition/Usage

The *Organization* element identifies the project or individual that has primary responsibility for a given element. It is commonly used with Life Cycle Phase Scenarios to define the project having responsibility for executing a particular life cycle phase of a major facility (*Component*) or with *CriticalIssues* and *Decisions* to assign responsibility for providing alternatives and solutions. The *Organization* elements that describe the Project Hanford Breakdown Structure (PHBS) are available within the HSTD for use in defining responsibility for accomplishment of other elements within the HSTD.

Any element instance can have only one *Organization* as primary responsibility, but can have many *Organization* instances as secondary. Similar to *Components*, *Organizations* form a hierarchy.

ATTRIBUTES

Organization elements have the common attributes plus the following:

Description: [string] The description of the element instance. The is attribute should be the mission statement when the *Organization* element is used for a project and the individuals responsibility when the *Organization* element is used for a person.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Project Unique ID: [string] The project identifier used to uniquely identify each project within Project Hanford.

Title: [string] The title of the element instance.

RELATIONSHIPS

Organization elements have the common relationships, plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

built in *Organization*. This relationship allows the user to place *Organization(s)* in a hierarchy; i.e., lower level *Organization(s)* are **built in** to higher level *Organization(s)*.

built from *Organization*. This relationship also allows the user to place *Organization(s)* in a hierarchy; i.e., higher level *Organization(s)* are **built from** lower level *Organization(s)*.

Note: Either **built in** or **built from** are mandatory depending on hierarchy.

categorized by *Category*. Used to group elements.

primary for *All elements*. Used to assign responsibility for an element. With this relationship any given element instance can be linked to only one *Organization* (i.e., only one *Organization* and Responsible Individual has primary responsibility for a element instance).

secondary for *All elements*. Used to define the people and organizations with secondary interest in the element. The *Organization* that is **primary for** a given element instance should coordinate changes with the *Organization(s)* that are **secondary for** the same element instance.

Note: Either **primary for** or **secondary for** are mandatory.

2.3.16 Scenario

Definition/Usage

A *Scenario* is a function that can be decomposed into a sequence of other functions (i.e., *TimeFunction*, *DiscreteFunction*, or *Scenarios*). *Scenarios* are used to define a sequence of functions representing a single thread of operational behavior. *Scenarios* can be used to establish performance requirements.

Within the HSTD, the *Scenario* is used to develop the "Life Cycle Asset Management (LCAM)" scenario where each major facility is depicted as having a life cycle. The life cycle of each major facility is comprised of life cycle phases of the facility components. These life cycle phases are also *Scenarios* and are comprised of the functions that must perform during that particular life cycle phase.

ATTRIBUTES

Scenario elements have the common attributes, plus the following:

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Description: [string] Provides the description for this instance of the element type.

Title: [string] The title of the element instance.

RELATIONSHIPS

Scenario elements have the common relationships, plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. Used to group elements.

current decomposition of *FNet*. Identifies the *FNet* that currently decomposes the *Scenario*. [This is a one to one relationship.]

decomposed by *FNet*. Identifies all of the *FNets* that decompose the *Scenario*. [This is a one to many relationship.]

inputs *DiscreteItem*, *TimeItem*. Show the items which are flowing into the current *Scenario*.

illustrated by *DVFTimeLineDescription* Used to associated a graphical depiction contained in a *DVFTimeLineDescription*, with its associated *Scenario*.

outputs *DiscreteItem*, *TimeItem*. Show the items which are flowing from the current *Scenario*.

primary is *Organization*. Used to assign responsibility for the *Scenario*, specifically the "LCAM Phases" scenarios.

raises *CriticalIssue*. Used to show that someone has an issue with the *Scenario*.

referred by *FNet*. Identifies the *FNet* that the *Scenario* is on. Maintained by RDD-100® and cannot be modified by the user.

secondary is *Organization*. Used to define the people and organizations that need to remain cognizant of the *Scenario*.

2.3.17 Source

Definition/Usage

The *Source* element is used to provide traceability of information contained in a given element back to the source documentation. Its most common uses are as a starting point for a *SystemRequirements* hierarchy or as the basis of a *Decision*.

ATTRIBUTES

Source elements have the common attributes plus the following:

Description: [string] This attribute stores descriptive text about the source of a requirement, decision, etc.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Source Type: [enumerated] "nil," "Originating Requirements," "Meeting Minutes," "Trade-off Study Report," "Change Request," "Project Memo," "Standard," "Other." "Originating Requirements" and "Standard" are used as the starting point for an originating requirements hierarchy; "Trade-off Study Report" is used as the starting point for a derived or performance requirements hierarchy; "Meeting Minutes" and "Project Memo" are used as the starting point for *Decisions*.

Title: [string] The title of the document contained in the element instance.

RELATIONSHIPS

Source elements have the common relationships plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. Used to group elements.

documents *All element types*. The most common targets for this relationship are *Decisions*, *SystemRequirements*, *WasteForecast*, *MaterialForecast*, *InfrastructureForecast*, and *EventForecast*.

invoked by *SystemRequirement*. This relation is used when a *Source* of requirements is identified in the body of another requirement (e.g., "...retrieval shall be in accordance with 10 CFR ...," then the requirement has invoked another *Source*).

raises *CriticalIssue*. Used to show that someone has an issue with the *Source*.

2.3.18 SystemRequirement

The *SystemRequirement* element is used to capture the statements that identify the essential needs of the system under consideration: what the system is to do, how it is to be done, and the standards which must be met.

SystemRequirements can come directly from source documents (e.g., DOE 5820.2A), or may be derived from analysis/trade studies.

All originating requirements must be documented by a *Source*.

SystemRequirements form a hierarchy using the **incorporates** relationship. All *SystemRequirements* must either be **documented by** a *Source* or **incorporated by** a parent *SystemRequirement*. All leaf level Requirements must be linked to the appropriate element via the **traces to** relationship.

ATTRIBUTES

SystemRequirement elements have the common attributes plus the following:

Description: [string] The description of the element instance.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

RELATIONSHIPS

SystemRequirement elements have the common relationships plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. This relationship is used to place *SystemRequirements* into groups for ease of analysis.

documented by *Source*. This relationship allows the user to identify the original, verbatim *Source* of the text found in the *SystemRequirement*.

incorporated by *SystemRequirement*. This relationship allow the user to place *SystemRequirements* in a hierarchy (i.e., a lower level *SystemRequirement* is **incorporated by** higher level *SystemRequirement*). **incorporates** *SystemRequirement*. This relationship allow the user to place *SystemRequirements* in a hierarchy (i.e. a higher level *SystemRequirement* **incorporates** lower level *SystemRequirements*).

invokes *Source*. This relation is used when a *SystemRequirement* identifies a source document as part of its requirement (e.g., "...retrieval shall be in accordance with 10 CFR ...").

raises *CriticalIssue*. This relation is used to show that someone has an issue with an aspect of the *SystemRequirement*.

resulted from *Decision*. This relation is used to show that a *SystemRequirement* has been derived through the requirements management process. An **incorporated by** *SystemRequirement* relationship must accompany this relation.

traces to *Component*, *DiscreteFunction*, *DiscreteItem*, *Interface*, *ItemLink*, *TimeFunction*, *TimeItem*, (All other element types). *TimeFunction*, *DiscreteFunction*, and *ItemLink* are the targets for

Behavioral requirements and *Component* and *Interface* are the targets for non-behavioral requirements. *TimeItems* and *DiscreteItems* are the targets for product specification requirements. A *SystemRequirement* must either **incorporates** another *SystemRequirement* or must have a **traces** to relationship to a valid target type.

2.3.19 TimeFunction

Definition/Usage

TimeFunctions are utilized to define what the system must do to meet its requirements and accomplish its mission. Within the HSTD, there are two types of functions, *TimeFunctions* and *DiscreteFunctions*. *TimeFunctions* may be further decomposed into lower level *TimeFunctions* or *DiscreteFunctions*. *DiscreteFunctions* are leaf nodes and therefore may not be further decomposed. All subfunctions, whether *TimeFunctions* or *DiscreteFunctions*, *must* contribute to performance of the higher level function. A *TimeFunction* is the action performed by a *Component*.

ATTRIBUTES

TimeFunctions have the common attributes plus the following:

Description: [string] The description of the element instance.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

RELATIONSHIPS:

TimeFunctions have the common relationships plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. Used to group elements.

current decomposition *FNet*. Identifies the *FNet* that currently decomposes the Function. [This is a one to one relationship.] This relationship is automatically created by RDD-100® when editing a Behavior Diagram.

decomposed by *FNet*. Identifies all of the *FNets* that decompose the Function, (i.e. the current decomposition and any alternate decompositions). [This is a one to many relationship.] This relationship is automatically created by RDD-100® when editing a Behavior Diagram.

inputs *DiscreteItem*, *TimeItem*. Show the items which are flowing into the current *TimeFunction*.

raises *CriticalIssue*. Used when a user has an issue with some aspect of the current *TimeFunction*.

referred by *FNet*. Identifies the *FNet* that the *TimeFunction* is on, the parent function's *FNet*.

resulted from *Decision*. Used when the current *TimeFunction* is created as a result of resolving a *Decision*.

outputs *DiscreteItem*, *TimeItem*. Show the items which are flowing from the current *TimeFunction*.

performed by *Component*. Links a function with the *Component* that will perform the function. All leaf-level *TimeFunctions* must be **performed by** a *Component*.

primary is *Organization*. Use to designate the *Organization* that is primarily responsible for the element.

secondary is *Organization*. Use to designate the *Organization* that has secondary responsibility for the element.

traced from *SystemRequirement*. The target *SystemRequirement* is used to allocate behavioral requirements to the function.

2.3.20 TimeItem

Definition/Usage

TimeItems are the inputs and outputs of functional elements such as *Scenarios* and *TimeFunctions*. All items necessary for the function to perform are **input** to the function. Items transformed or produced by the function are **output** from the function. *TimeItems* can be decomposed into a hierarchy of lower level *TimeItems* or *DiscreteItems*.

TimeItems of IDEF0 Type "input" are the items or materials that enter a function and are transformed into products that are output from the function. *TimeItems* of IDEF0 Type "control" are management direction type of inputs that constrain the function. *TimeItems* of IDEF0 Type "mechanism" are the items that are necessary for the function to transform the input material into an output product.

ATTRIBUTES

TimeItem elements have the common attributes plus the following:

Description: [string] The description of the element instance.

IDEFO Type: [enumerated] Used to identify the type of *TimeItem* for use in developing the IDEF0 diagrams. Available values are "input"(default), "control," "mechanism."

Item Type: [enumerated] "nil" (default), "analog," "digital," "physical," "mixed."

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

RELATIONSHIPS

TimeItem elements have the common relationships plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

carried by *ItemLink*. Used to show which *ItemLinks* the current *TimeItem* flows through.

categorized by *Category*. Used to group elements.

forecasted by *MaterialForecast*, *WasteForecast*, *InfrastructureForecast*, or *EventForecast*. Used to show the forecast for the product represented by the *TimeItem*.

illustrated by *DVFChartDescription*. Used to associate a graphical depiction contained in a *DVFChartDescription*, such as a waste profile, with its associated *DiscreteItem*.

input to *Scenario*, *TimeFunction*, *DiscreteFunction*. Used to show the functions the current *TimeItem* flows into.

raises *CriticalIssue*. Used when someone has an issue with the current *TimeItem*.

resulted from *Decision*. Used when the current *TimeItem* was created as a result of the resolution of a *Decision*.

output from *Scenario*, *TimeFunction*. Used to show the functions the current *TimeItem* flows out of.

primary is *Organization*. Use to designate the *Organization* that is primarily responsible for the element.

secondary is *Organization*. Use to designate the *Organization* that has secondary responsibility for the element.

traced from *SystemRequirement*. Used to associate non-behavioral requirements.

2.3.21 WasteForecast

Definition/Usage

WasteForecast is a data element that is utilized to capture the estimated waste flow for a specific behavior item. It contains volumetric waste forecast information for a specific fiscal year.

ATTRIBUTES

WasteForecast elements have the common attributes plus the following:

Description: [string] The element description.

Fiscal Year: [Integer-4 digit] Fiscal year for which the waste forecast is being made; i.e., 1997.

Forecast Type: [enumerated list] Type of waste forecast; i.e., "Begin Inventory," "Received," "Generated," "Reduced," "Transferred," "Disposed," and "End Inventory."

Maximum Value: [Floating Point] Maximum value of waste forecasted for the fiscal year.

Mean Value: [Floating Point] Mean value of waste forecasted for the fiscal year.

Minimum Value: [Floating Point] Minimum value of waste forecasted for the fiscal year.

Number: [hierarchical number] Used for sorting. Numbers are assigned in a hierarchical order, so that the first subelement to an element numbered x.y.z would be numbered x.y.z.1, the second x.y.z.2 and so on.

Title: [string] The title of the element instance.

Units: [text] Unit of measure for the forecasted waste.

Waste Type: [enumerated list] Type of waste being forecasted; i.e., "Asbestos," "CH LLMW I," "CH LLMW III," "CH LLW I," "CH LLW III," "CH TRU," "CH TRUM," "HAZ," "HLW," "Industrial Waste Water," "LLW (Liquid)," "LLMW (Liquid)," "RH LLMW GTCIII," "RH LLMW I," "RH LLMW III," "RH LLW GTCIII," "RH LLW I," "RH LLW III," "RH TRU," "RH TRUM," "Sanitary Liquid Waste," "Sanitary Solid Waste," "Special Case Waste," and "Treated Liquid Effluent."

RELATIONSHIPS

WasteForecast elements have the common relationships plus the following:

annotated by *Comment*. Used to associate any non-requirement, non-issue text with an element.

categorized by *Category*. Used to group elements.

documented by *Source*. Allows the user to document the source of the information contained in the *WasteForecast*.

forecasts *DiscreteItem*, *TimeItem*. Allows the user to show the *DiscreteItem* or *TimeItem* for which the waste is being forecasted.

primary is Organization. Shows the *Organization* which is responsible for the information contained in the *WasteForecast*.

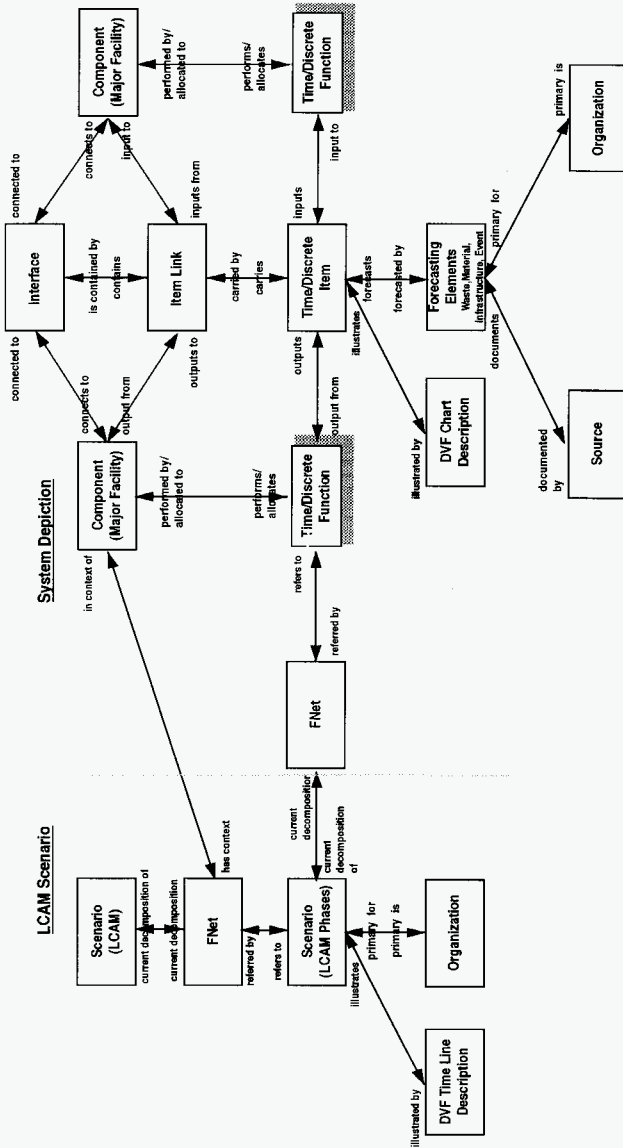
raises *CriticalIssue*. Used to show that someone has an issue with the *WasteForecast*.

resulted from *Decision*. Used to show the *Decision* which caused the *WasteForecast* to be created.

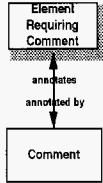
secondary is *Organization*. Shows the *Organization* which has a secondary interest in the information contained in the *WasteForecast*.

APPENDIX A

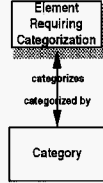
Hanford Site Technical Baseline Database Structure



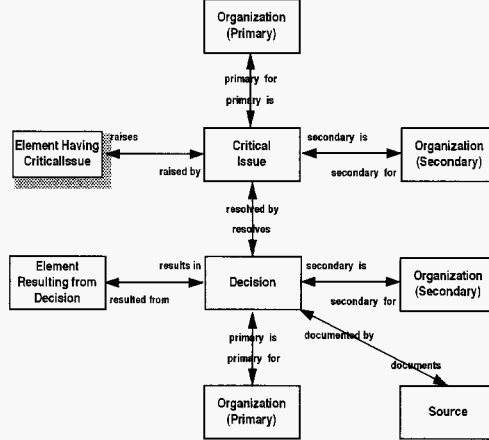
Comments



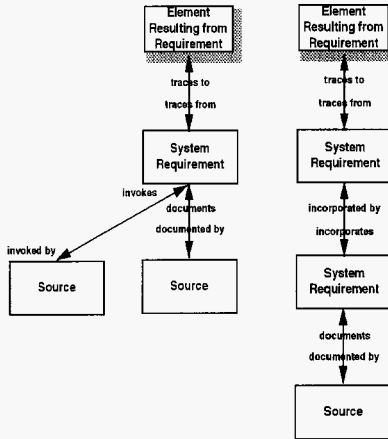
Categories



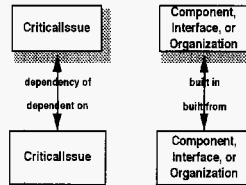
Issue Tracking and Resolution



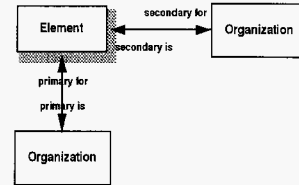
Requirements



Hierarchical Relationships



Organizational Relationships



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DISTRIBUTION	Sitewide/SE & I	Date 4/29/97
Project Title/Work Order		EDT No. 614851
HSTD/ Software Requirements Y2TEC HNF-SD-WM-CSUD-013		ECN No. N/A

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