



2006

SAVAGE Modeling Analysis Language (SMAL), PowerPoint Presentation

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SAVAGE Modeling Analysis Language (SMAL)

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Objective

- Introduce the SMAL design to the PDG to see if there are capabilities that should be considered for inclusion in MSDL standardization

Background

- Developed by LCDR Travis Rauch, USN
- NPS thesis: *Savage Modeling Analysis Language (SMAL): Metadata for Tactical Simulations and X3D Visualizations*, March 2006
- Application to research projects in the Scenario Authoring and Visualization for Advanced Graphical Environments (SAVAGE) Research Group in the MOVES Institute

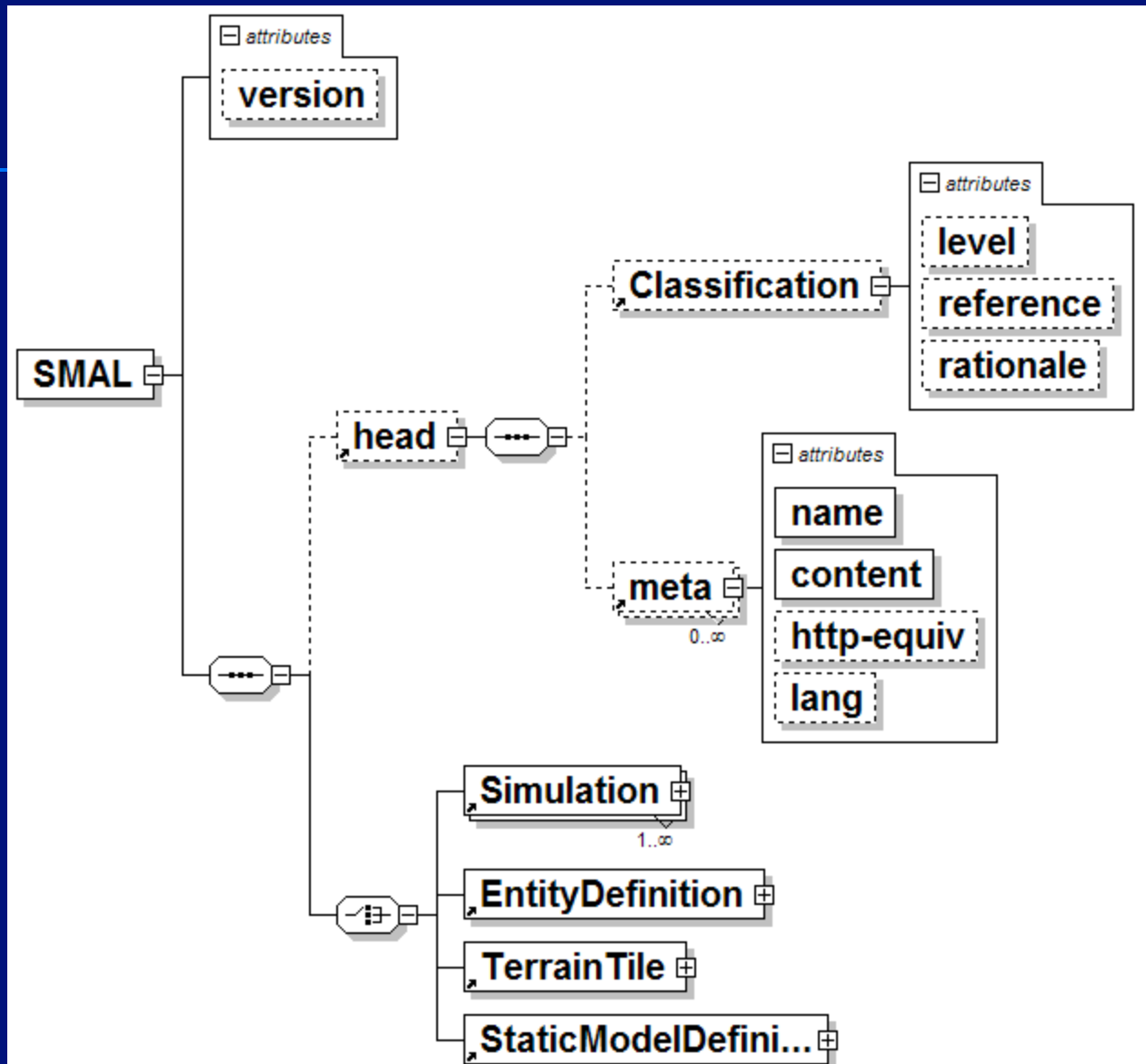
Purpose

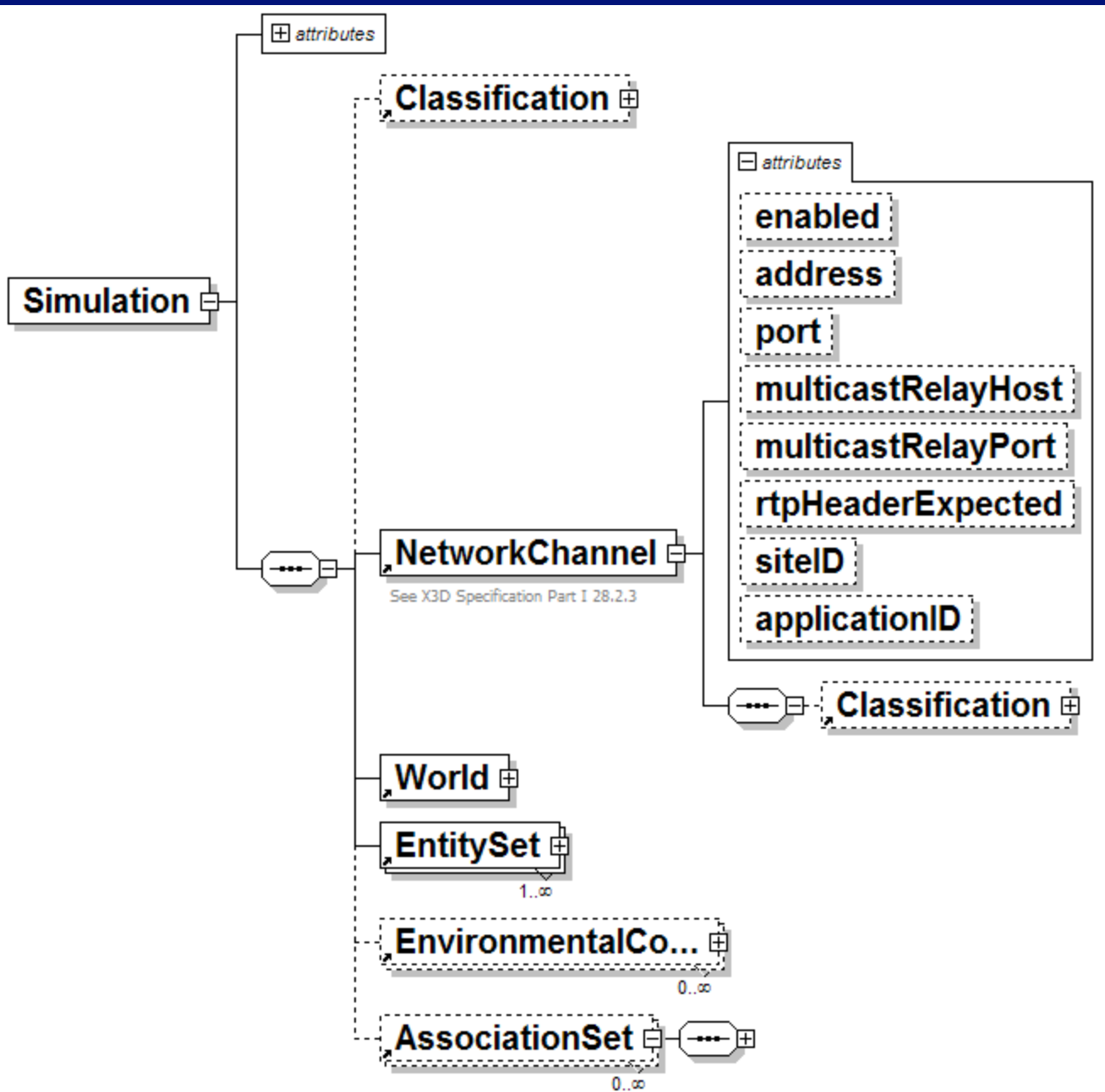
- Strategy for identifying tactical, physical and simulation-oriented metadata for vehicles, terrain and entities in virtual environments
- Collects and organizes information necessary to create and populate a 3D virtual environment
- Equivalent XML and X3D representations for SMAL are defined

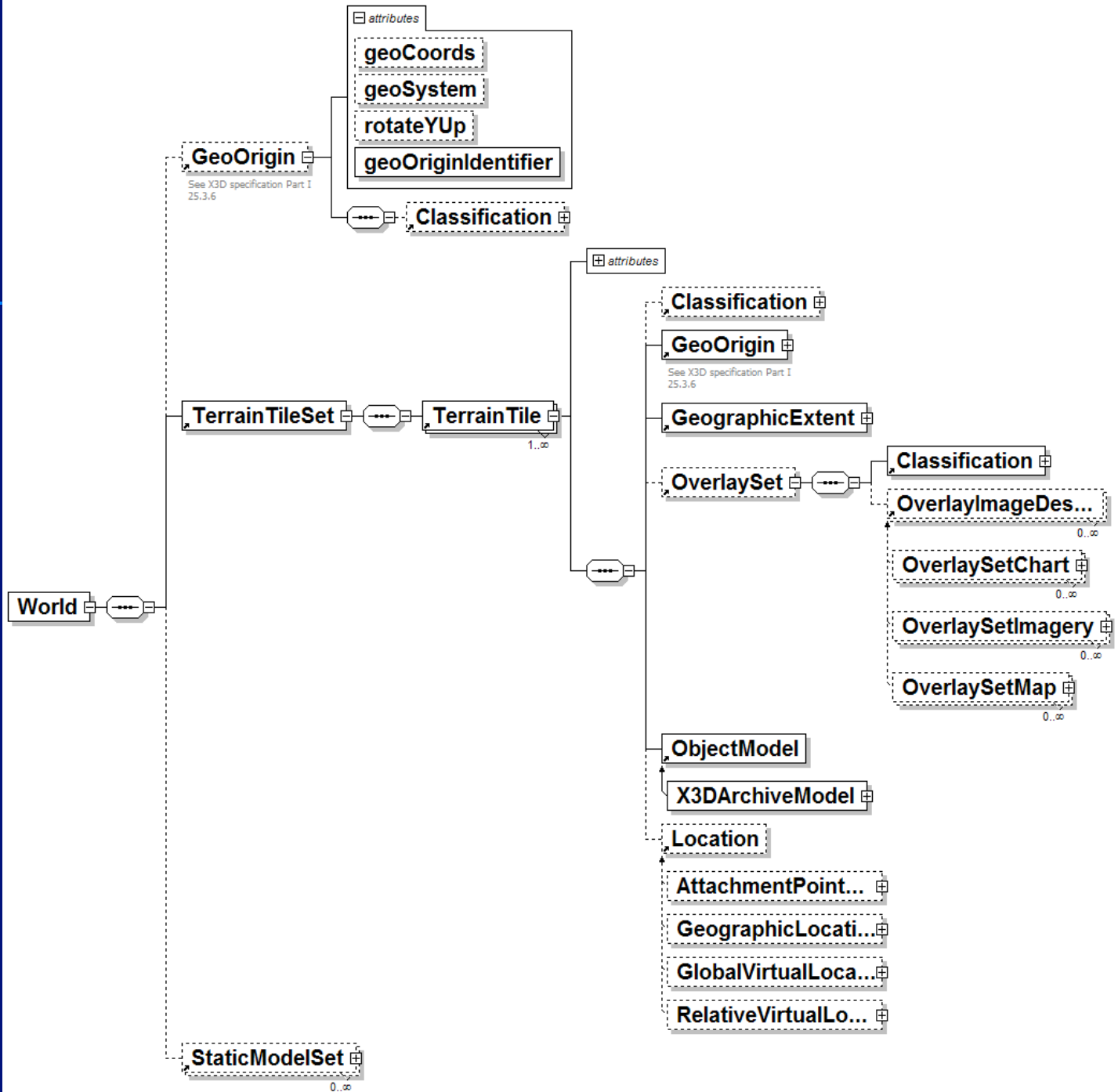
SMAL Usage

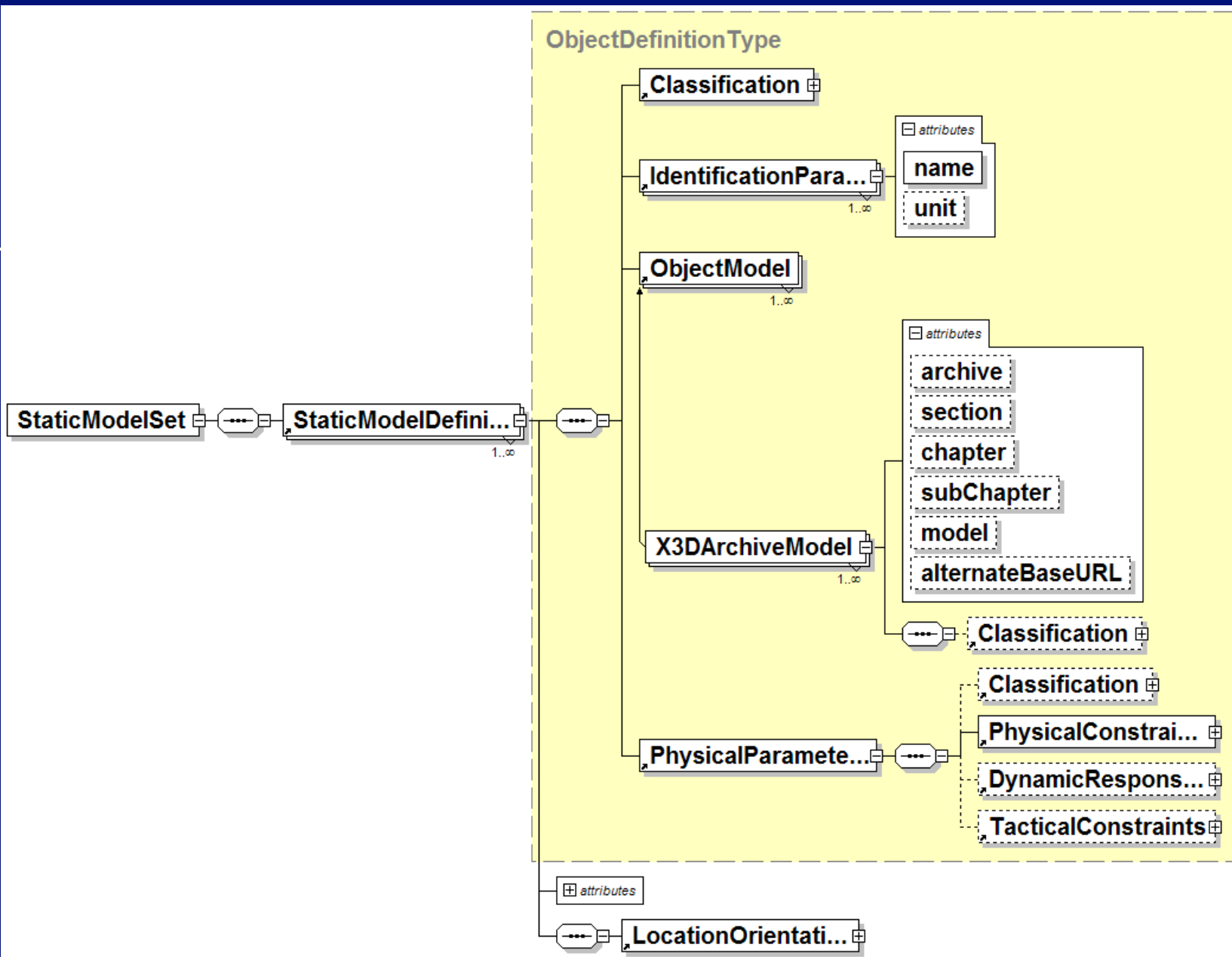
- Viskit event graph modeling tool for designing and running Discrete Event Simulations
- SavageStudio scenario-authoring tool
- Savage and SavageDefense X3D model archives

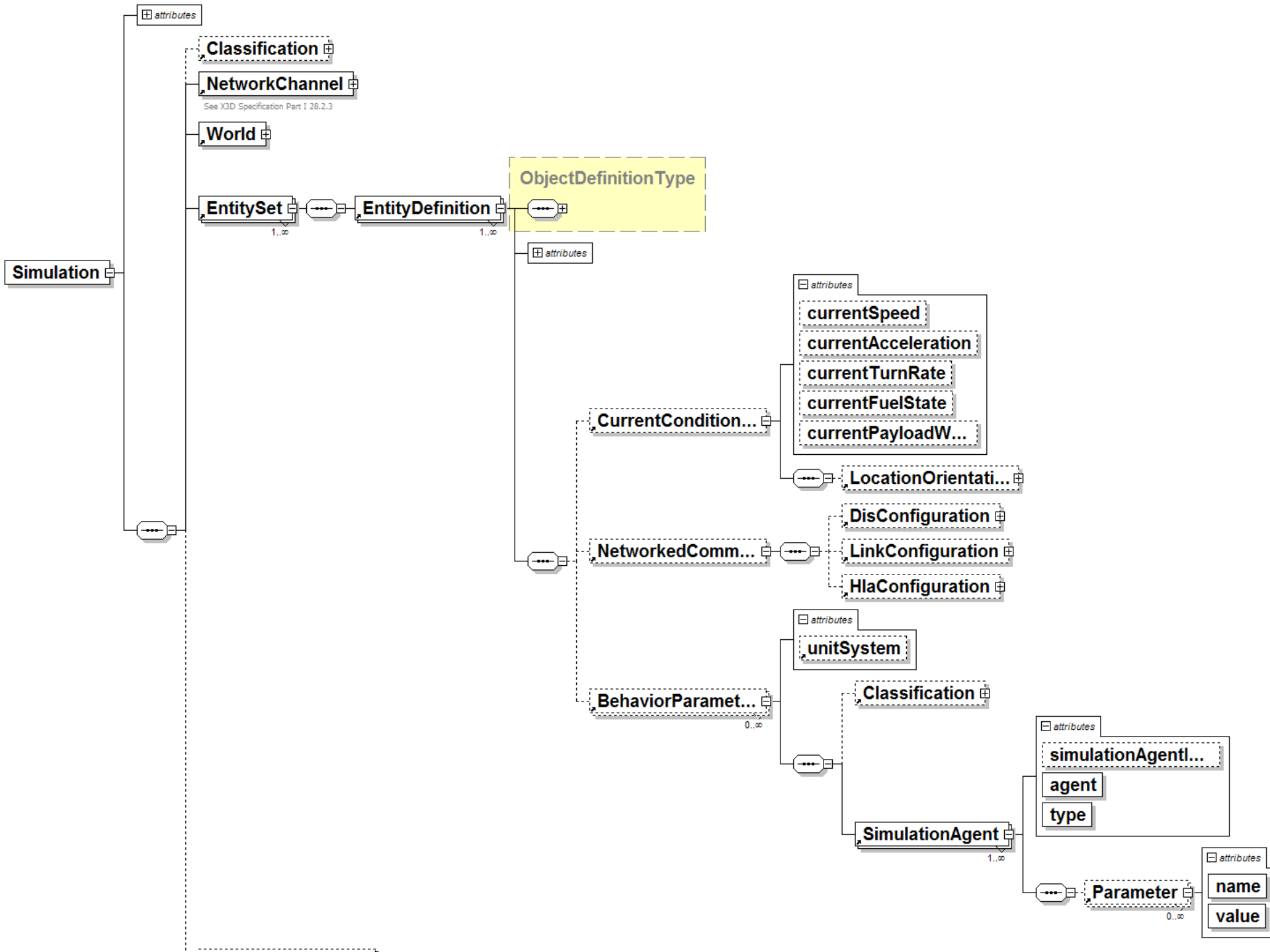
SMAL XML Schema Overview

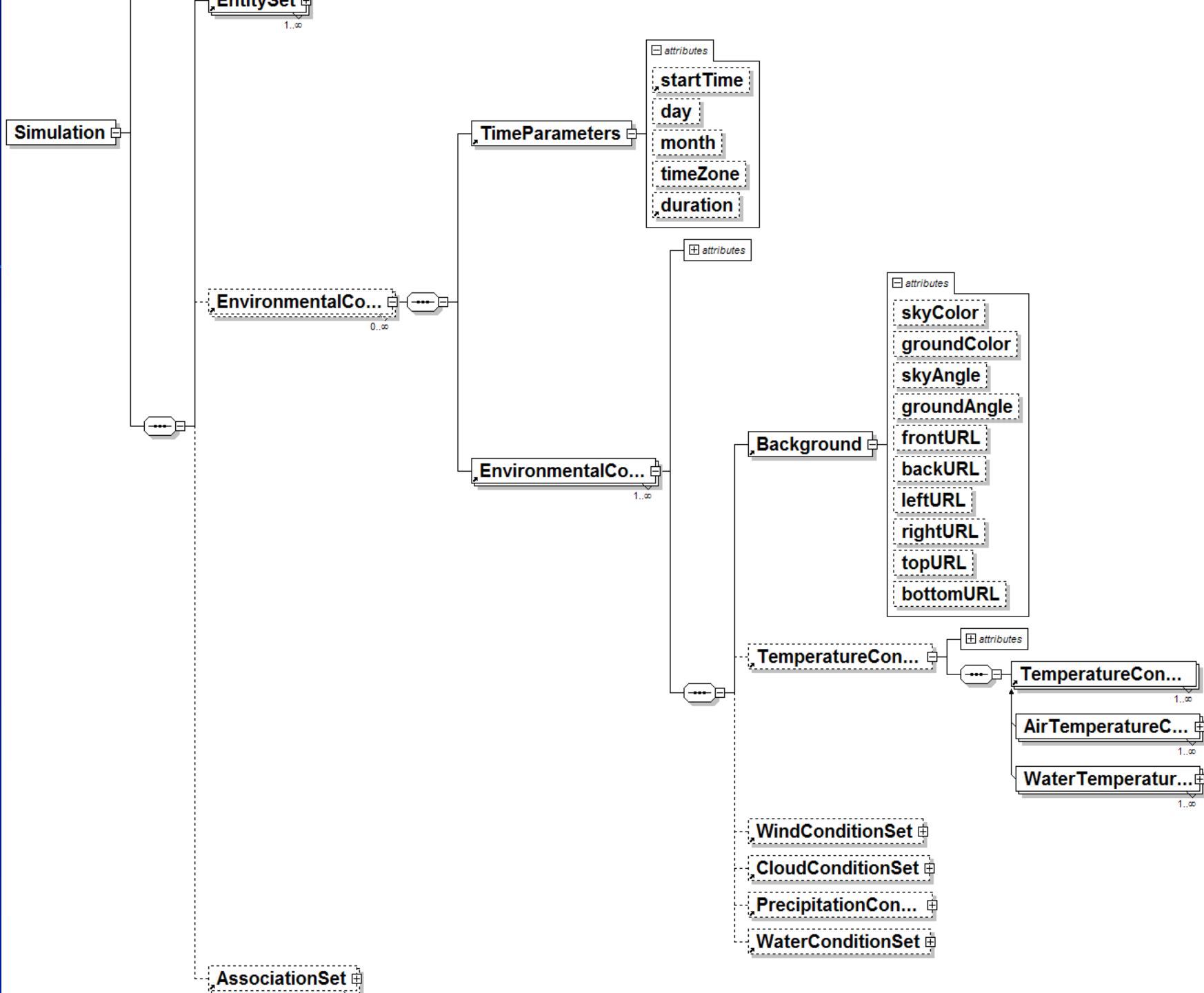


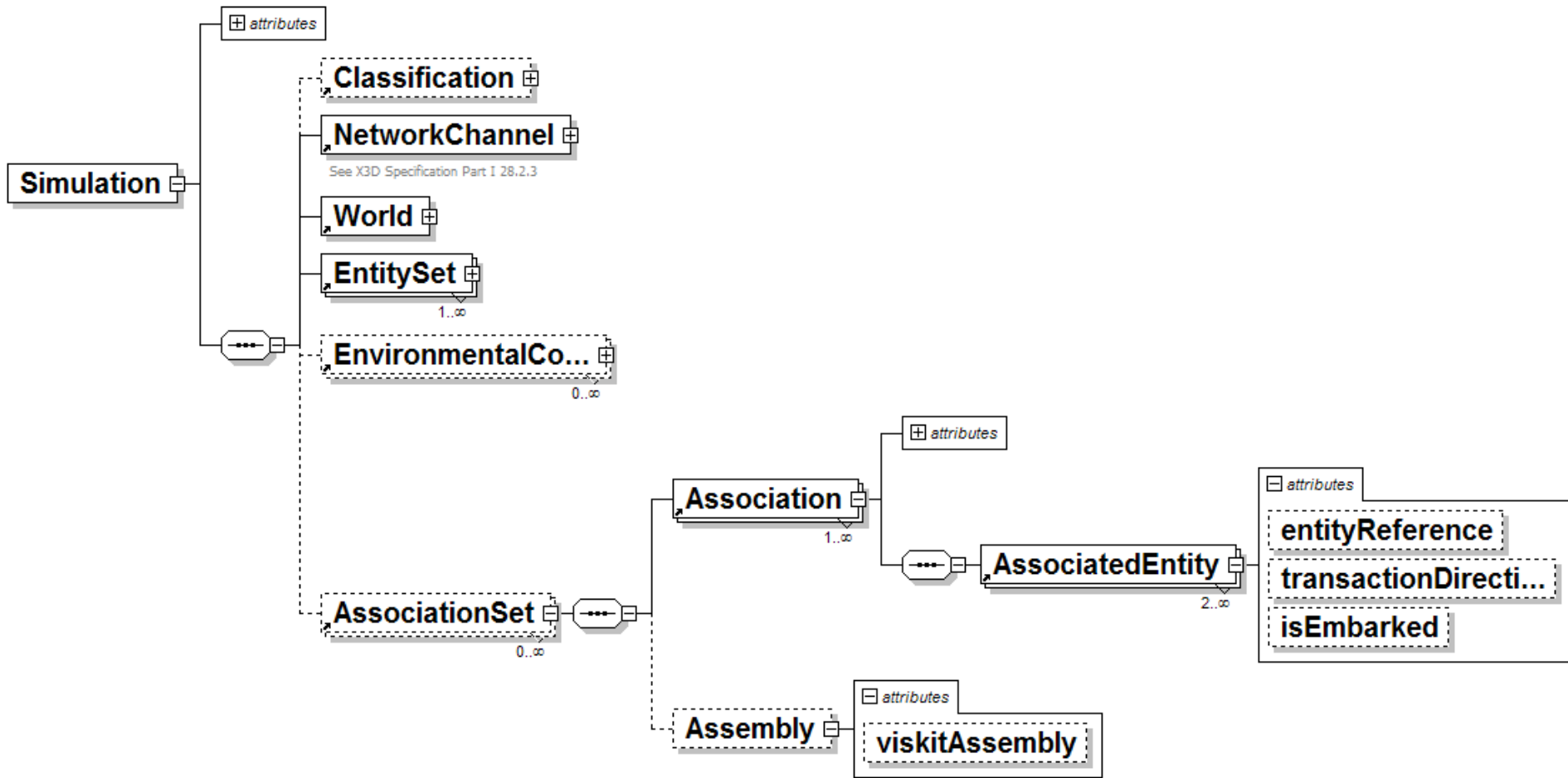












perhaps lends itself to BOM or SRML association
(or other model descriptions)

MSDL Considerations

- Is there a need for initialization at the entity-level directly from MSDL?
 - Parametric data
 - Entity locations
 - Entity behaviors
- Is there a need to associate models (logical or graphical) for initialization?

Resources Available

- <https://savage.nps.edu/Savage/Tools/SMAL/SMAL.html>
- [SMAL schema documentation](#)
- [SavageModelingAnalysisLanguage1.0.dtd](#)
- [SavageModelingAnalysisLanguage1.0.xsd](#)
- [SavageModelingAnalysisLanguageDataTypes1.0.xsd](#)
- [SavageModelingAnalysisLanguageEnumerations1.0.xsd](#)

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Backup Slides

Viskit Application

The screenshot displays the Viskit application interface, which is used for creating and managing event graphs for simulation. The interface is divided into several sections:

- Event Graphs:** A tree view on the left showing the project structure. It includes folders for 'diskit', 'util', 'dev', and 'SMAL'. Under 'SMAL', there are several components: SMALMover3D, AvoidanceMoverManager, BasicTerrorist, Contact, DISEntity, and DISMover3D.
- Property Change Listeners:** A section below the Event Graphs showing loaded libraries: 'lib/ext/diskit.jar' and 'lib/simkit.jar'.
- Mode and Zoom:** A toolbar at the top of the main workspace containing icons for selection, pan, zoom in, and zoom out, along with a text label 'Mode:' and a 'Zoom:' label with a magnifying glass icon.
- Initialize assembly runner:** A play button icon on the right side of the toolbar.
- Main Event Graph:** A large central workspace with a grid background. It contains a complex network of nodes and directed edges. The nodes are:
 - DIS Pinger** (top center)
 - Nautical Chart** (top right)
 - Mooring Buoy** nodes: Mooring BuoyA13, Mooring BuoyA12, Mooring BuoyA11, Mooring BuoyL4, Mooring BuoyL3, Mooring BuoyL2, Mooring BuoyL1, Mooring F, Mooring E, Mooring G.
 - Pier** nodes: Pier Charlie, Pier Delta, Pier Bravo.
 - Scenario Manager** (center)
 - Terrorist** nodes: Terrorist1, Terrorist Cell Planner, Terrorist2, Terrorist3.
 - SeaScan** nodes: SeaScan, SeaScanPortedCont, SeaScanEmissionCont.
 - RHIB** nodes: RHIB, RHIB Intercepts, RHIB Intercept Time.
 - Fishing Trawler** (top right)
 - CVN70**, **FFG60**, **CG59**, **DDG59**, **DDG77** (various right-side nodes).
 - Trawler Radio responseTime** (top right, dashed border)

Savage Studio Simulation Analyst Workflow

Tuesday, August 15, 2006

