

What need is the MATREX Simulation Initialization addressing?

In the past, most organizations supported dedicated simulation programs. Considerable pre-exercise effort was required to enable the collaboration of multiple simulations.

Twelve to eighteen months of pre-exercise effort was not uncommon for some DoD Joint training events involving multiple, dissimilar simulations.

Accordingly, DoD has identified “rapid scenario generation” as a top Modeling and Simulation (M&S) priority.

The MATREX program reduces the time and cost associated with experimentation by providing a mechanism to allow initialization from a common point in a standardized format.

The value of this approach is that configuration management is simplified and data consistency is ensured through this approach. This prevents time-consuming errors that bog down integration and testing of distributed simulation architectures.

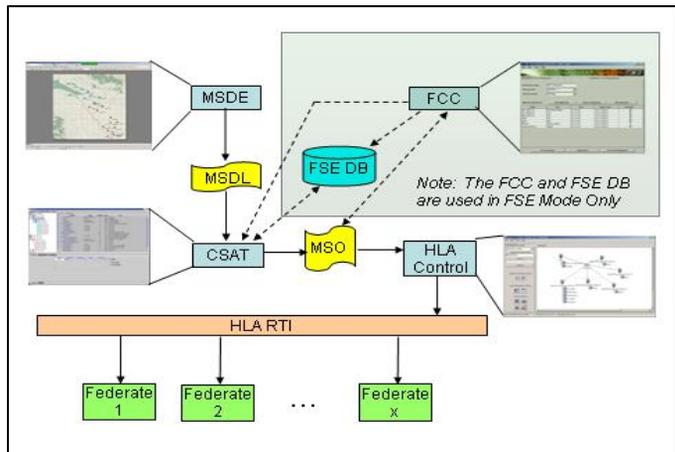
How is the MATREX Simulation Initialization addressing this need?

A goal of MATREX is to initialize a simulation from a common, controlled, standardized format that describes a military scenario. This format is known as the Military Scenario Definition Language (MSDL). Training and Doctrine Command (TRADOC) has adopted MSDL as its standard for scenario inception.

MSDL employs the eXtensible Markup Language (XML) to specify characteristics of a military scenario. It is designed to be independent of the simulation specific data, and is therefore independent of any particular simulation. Elements of the MSDL schema include:

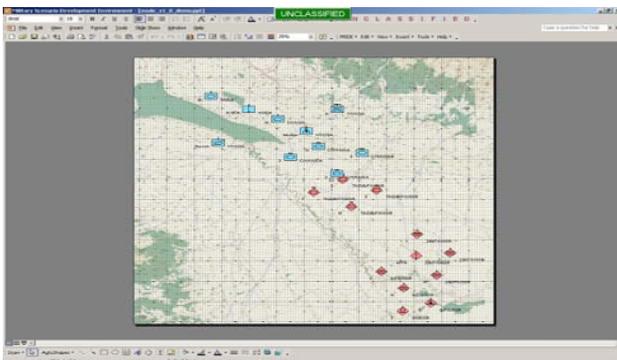
- Equipment definitions
- Unit definitions
- Force structure
- Force laydown

MATREX uses the Military Scenario Development Environment (MSDE) to generate data in an MSDL format. MSDE allows placement of units on a digitized map with the capability to disaggregate units down to platforms and move object locations at different levels of aggregation.



While scenario data is available through MSDL, additional simulation specific data is also needed to initialize a distributed simulation; this includes simulation configuration data, display options, data logging options and other parameters not directly associated with the scenario.

To accommodate the full set of data needed to initialize a distributed simulation, MATREX has developed a tool called the Configuration and Static Analysis Tool (CSAT). CSAT ingests a scenario produced in MSDL format and allows a user to supplement the scenario data with simulation configuration data. The output of CSAT is then used to initialize the models within a simulation.





Who is benefiting from the MATREX Simulation Initialization?

- Research, Development and Engineering Command
 - AMRDEC (JAMUS Federation)
 - CERDEC (C4ISR OTM Federation)
- Future Combat System Lead System Integrator
- TRADOC (BLSCE Federation)

Points of Contact

www.rdecom.army.mil

www.matrex.rdecom.army.mil

Benefits (Why) of using the MATREX Simulation Initialization?

- Quickly and efficiently generates both tactical scenario and HLA Federation instantiation reader files in standardized formats
- Initializes HLA Federates from a common point
- Minimizes both manual input and configuration conflict errors
- Simplifies configuration management and increases data consistency
- All simulation environments that employ the MATREX standard for scenario and federation reader files have access to all other MATREX initialization compliant scenarios

Acronyms List

- AMRDEC** = Aviation & Missile Research, Development and Engineering Center
- ARL** = Army Research Laboratory
- BLCSE** = Battle Lab Collaborative Simulation Environment
- CERDEC** = Communications-Electronics Research, Development and Engineering Center
- CSAT** = Configuration and Static Analysis Tool
- C4ISR** = Command & Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance
- DoD** = Department of Defense
- FCS** = Future Combat System
- JAMUS** = Joint Aviation and Missile Unmanned Systems
- LSI** = Lead System Integrator
- MATREX** = Modeling Architecture for Technology, Research and Experimentation
- MSDE** = Military Scenario Development Environment
- MSDL** = Military Scenario Definition Language
- OTM** = On-the-Move
- TRADOC** = Training and Doctrine Command
- XML** = eXtensible Markup Language

Get the right M&S technology to the right place, at the right time, for the Decision Maker and the Warfighter.