



OSF Objective Simulation Framework



The **Objective Simulation Framework (OSF)** is being developed to provide a single simulation framework capability to support multiple Missile Defense Agency (MDA) application domains to include:

- Distributed Hardware-in-the-Loop (HWIL) Ground Test
- Performance Assessment (Digital)
- Element M&S Asset Integration
- Training
- Exercises
- War Games
- Concept Analysis

OSF is being developed to be capable of integrating Live, Virtual and Constructive simulations. It will provide consistent and traceable truth stimulus in all the above domains. It is being developed to provide the following:

- Single Framework to support both Digital and HWIL venues
- Single Integrated Execution and Control
- Highly composable to allow creation of multiple instance configurations from various components to include Core Truth Models and BMDs Element representations, Digital and HWIL
- Consistent Truth (Threat and Interceptors) Capability
- Real Time and non-Real Time support

OSF is intended to be the BMDs Truth Framework and Element Truth Framework for MDA Modeling and Simulation Applications.

- Supports Capability Delivery (CD) and Phase Adaptive Approach (PAA)
- Supports Integrated Master Test Plan (IMTP) and Master Integration Plan (MIP) events and objectives:
 - Ground Test Campaigns
 - Warfighter Exercises/Training (GDEX, GST)
 - System Pre Mission Tests (SPMTs)
 - System Post Flight Reconstruction (SPFRs)
 - Continuous Digital Assessment

The OSF will be installed at numerous Hardware-In-The-Loop (HWIL) laboratories and fielded sites throughout the United States and globally, as well as on mobile platforms.

OSF provides threat scenarios, simulates all environments within which the BMDs operates, and enables overall control and coordination of the HWIL and Digital architectures. OSF provides consistent truth to drive element HWIL or Digital representations within distributed or centralized architectures.



OSF uses role-based access to provide for efficient use of the product in all phases of an event to include pre-execution, execution and post-execution. OSF uses a distributed Common Object Library (COL) with associated services to support all aspects of OSF operations in BMDs assessment events as well as in stand-alone configurations. OSF components are loosely coupled to allow flexibility and efficiency in supporting all stakeholder Applications

