

# FAST LAB

## Federation Analysis Support Technology Lab

U.S. Army Space and Missile Defense Command  
Space and Missile Defense Battle Lab

### Mission and Background

The FAST Lab provides simulation technology support to the modeling and simulation community with the primary goal of assisting with distributed simulation technology using the High Level Architecture (HLA). This includes HLA migration analysis, design, development, testing, and certification for new and legacy simulations.

The HLA is a DoD standard technical architecture designed to promote simulation interoperability and reuse. The HLA is generally applicable across a wide range of simulation types. HLA specifications are available to the broader simulation development and user community through the Defense Modeling and Simulation Office (DMSO).

The U.S. Army Space and Missile Defense Command directed its Battle Lab to establish the Federation Analysis Support Technology (FAST) Lab to facilitate HLA development of its models and simulations. The FASTLab is located in the Advanced Research Center in Huntsville, Ala. It provides a central repository for simulation technology knowledge and expertise including the HLA specification and supporting software.

### High Level Architecture (HLA) Assets

- DMSO and Commercial Simulation Software, Tools, Expertise, and Advice
  - Object Model Development Tool
  - Data Collection Tool
  - Object Model Data Dictionary
  - Run-Time Infrastructure Initialization Data Editor
  - Object Model Library
  - Federation Management Tool
  - Federation Execution Planner's Workbook
  - Federation Verification Tool
- Set of Persistent In-house Federates and Federations for Testing, Training, and Experiments
  - Run Time Infrastructure (RTI) Benchmark Software and Data Analysis Program

### FAST Lab Benefits

- Customers and Programs Leverage Shared Advanced Research Center Resources
  - Jump Start HLA Projects using FASTLab Experience
  - Time to HLA Compliance Shortened: Project Risk and Cost Reduced
  - Higher Modeling and Simulation Quality at Lower Cost
  - Access to RTI Benchmark Data and Analysis
- Repository of Simulation Technologies "Lessons Learned"
  - Leverage Experience of FAST Lab users
  - Conduit to Tennessee Valley HLA users

### Services and Resources

- Requirements Management and Analysis
  - Reduces Risk, Cost, and Schedule Impact
- System Architecture and Integration
  - Distributed Interoperable Simulation Development and Use
- High Level Architecture
  - Standards, Assets, Process, & Certification
  - HLA Migration of Legacy Simulations
- Training
- Computational Sciences Expertise
- High Performance Computing Facilities
- Verification, Validation, & Accreditation/Initial Verification & Validation
  - Set of Shared Resources/Knowledge of Modeling and Simulation Community Assets
- On-The-Job Training and Guidance
- Customer-Centered Service Environment
- FASTLab website: [www.arc.army.mil/hlafastlab.htm](http://www.arc.army.mil/hlafastlab.htm)

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