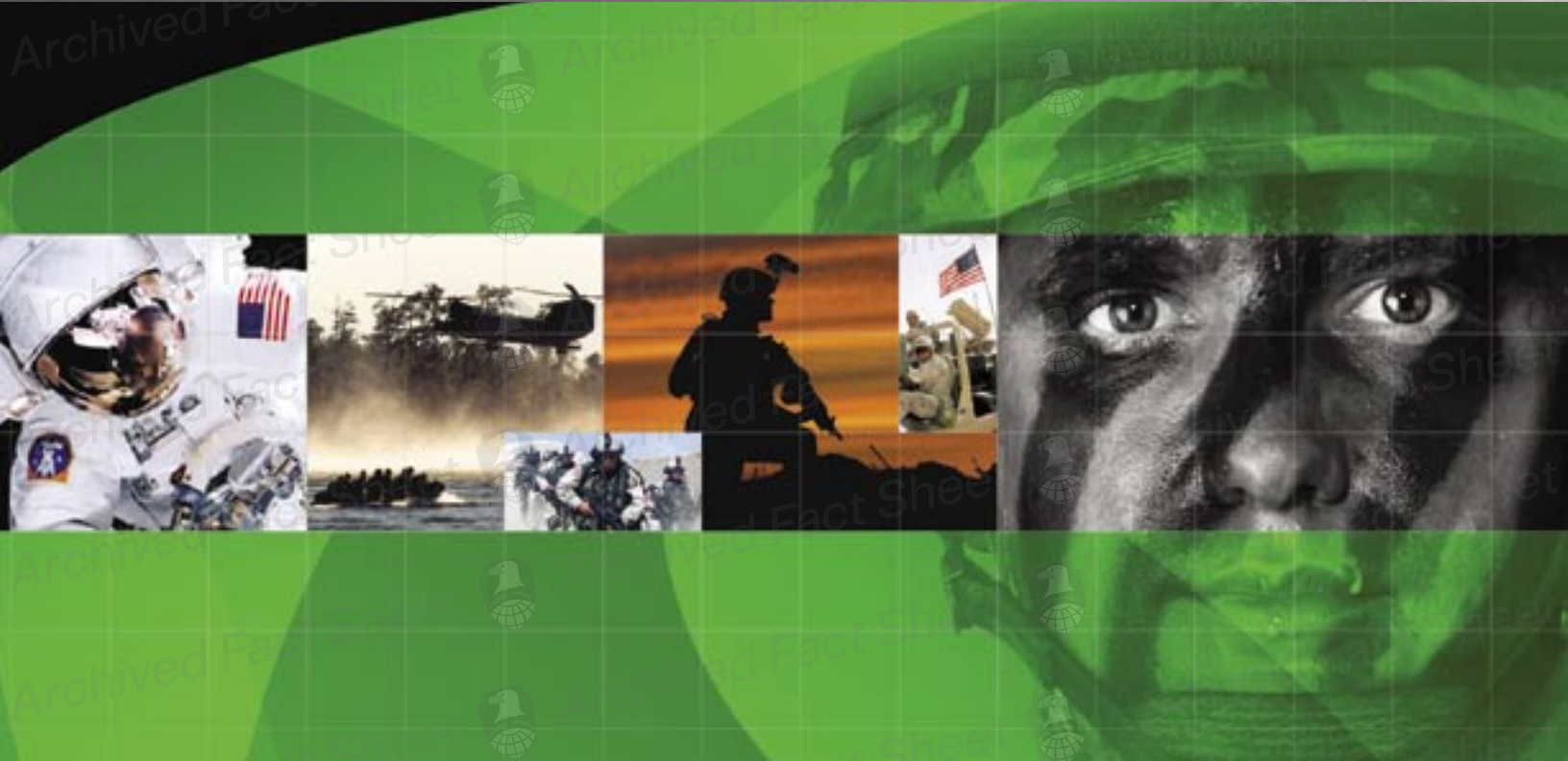**UNITED STATES ARMY SPACE AND MISSILE DEFENSE COMMAND**

FWC
Future Warfare Center

FAST Lab

Federation Analysis Support Technology Lab

Summary

- Development and Support of Innovative Distributed Simulation Research

- Simulation support of Space, Missile Defense, Information Operations, C4ISR Programs

- Evaluation and Optimization of HLA and DIS Components and Simulations

- Ready access to High Performance Computational Facilities

- Award Winning Simulation Benchmark Research Center

Innovative distributed modeling and simulation research and technology support for the warfighter.

The FAST Lab provides distributed simulation technology research and support to the modeling and simulation community using the DIS (Distributed Interactive Simulation) and the High Level Architecture (HLA) interoperability standards. This includes DIS/HLA migration analysis, design, development, testing, benchmarking, and certification for new and legacy simulations. DIS and HLA are IEEE and DoD standard technical architectures designed to promote simulation interoperability and reuse.

The U.S. Army Space and Missile Defense Command's Battle Lab established the Federation Analysis Support Technology (FAST) Lab to facilitate HLA development, encourage the optimization of its models and simulations, and to provide a central repository for DIS and HLA simulation technology expertise. The FAST Lab is located in the Advanced Research Center in Huntsville, Ala.

Secure the High Ground

Mission and Background

The FAST Lab provides distributed simulation technology support to the warfighter's modeling and simulation community with the primary goal of assisting implementation of the High Level Architecture (HLA) and the Distributed Interactive Simulation (DIS) standards. This support includes DIS/HLA migration analysis, design, development, testing, and certification for new and legacy simulations. DIS and HLA are IEEE and DoD standard technical architectures designed to promote simulation interoperability and reuse.

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

High Level Architecture (HLA) Assets

- Set of Persistent In-house Federates and Federations for Testing, Training, and Experiments
- Award Winning Run Time Infrastructure (RTI) Benchmark Software and Data Analysis Research Programs
- Simulation Software, Tools, Expertise, and Advice
  – Object Model and Data Collection Tools
  – Object Model Data Dictionary
  – Run-Time Infrastructure Software
  – Object Model Library
  – Federation Management & Verification Tools
  – Federation Execution Planner's Workbook

FAST Lab Benefits

- Leverage Shared ARC (Advanced Research Center) Resources
  – Jump Start HLA and DIS Projects using FAST Lab Distributed Simulation Experience
  – Time to HLA/DIS Integration and Compliance Shortened: Project Risk and Cost Reduced

  – Enhanced Modeling and Simulation Quality and Lowered Cost Through Leveraged Expertise
  – Access to RTI Benchmark Data, Research, and Analysis
- Repository of Simulation Technologies "Lessons Learned"
  – Leverage Experience of FAST Lab Users
  – Leverage Experience of Regional ARC Users

Services and Resources

- Management of Simulation Requirements and Analysis
  – Reduces Risk, Cost, and Schedule Impact
- System Architecture and Integration Studies
  – Distributed Interoperable Simulation Development and Use
- Distributed Interactive Simulation and High Level Architecture Tools
  – Standards, Assets, Process/Procedures, & Certifications
  – DIS/HLA Migration of Legacy Simulations
- Computational Sciences Expertise
- Ready Access to ARC High Performance Computing (HPC) Facilities
- Verification, Validation & Accreditation/Initial Verification & Validation
- Shared Resources/Knowledge of Modeling and Simulation Community Assets
- On-The-Job Training and Guidance
- Customer-Centered Service Environment
- FAST Lab web site: www.arc.army.mil/hlafastlab.htm