



Extended Air Defense Simulation



Summary

- Nearly 400 users worldwide
- Supports commanders, combat developers, trainers, testers, and analysts in a single package
- Significant contributor to Homeland Defense/Homeland Security in point defense studies
- Supports more than 30,000 individual players in faster than real-time
- Supported with ongoing maintenance, documentation, user group meetings, and telephone hotline

Provides air, space, and missile warfare simulation for the warfighter, combat developer, and tester in a single integrated package.

The Extended Air Defense Simulation (EADSIM) is a system-level simulation of air, space, and missile warfare. EADSIM provides an integrated tool to support joint and combined force operations and analysis. EADSIM is also used to augment exercises at all echelons with realistic air, space, missile, and Battle Management Command, Control, Communications, and Intelligence (BMC3I) warfare. EADSIM is used by operational commanders, trainers, combat developers, and analysts to model the performance and predict the effectiveness of ballistic missiles, surface-to-air missiles, aircraft, and cruise missiles in a variety of user-developed scenarios. EADSIM is, perhaps, the most widely used and highly scrutinized simulation in the Department of Defense.

Extended Air Defense Simulation (EADSIM) is a system-level simulation of air, space, and missile warfare. EADSIM is an integrated tool supporting joint and combined force operations and analysis. Also EADSIM augments exercises at all echelons with realistic air, space, missile, and Battle Management Command, Control, Communications, and Intelligence (BMC3I) warfare.

EADSIM is used by operational commanders, trainers, combat developers, and analysts to model the performance and predict the effectiveness of ballistic missiles, surface-to-air missiles, aircraft, and cruise missiles in a variety of user-developed scenarios. EADSIM supports the four pillars of theater missile defense in a full tactical context by modeling:

- Active Defense
 - Surface-to-Air engagements
 - Air-to-Air engagements
 - Multi-tier engagements
 - Tactical ballistic missile engagements (boost, midcourse, terminal phases)
- Passive Defense
 - Infrared signature
 - Radar Signature
- Attack Operations
 - Surface-to-Surface attacks
 - Air-to Surface attacks
 - Surveillance
 - Intelligence collection
- BMC3I
 - Engagement logic
 - Command and Control structure
 - Communications networks
 - Protocols

EADSIM is used for scenarios ranging from few-on-few to many-on-many. It represents all the missions on both sides. Each platform (such as a ground-based missile defense interceptor) is individually modeled, as is the interaction among platforms, their sensors, their launchers, and battle managers. EADSIM models the Command and Control (C2) decision processes and the communications among platforms on a message-by-message basis. Intelligence, surveillance, and reconnaissance are explicitly modeled to support offensive and defensive applications.

EADSIM models fixed- and rotary-wing aircraft, tactical ballistic missiles, cruise missiles, infrared and radar sensors, satellites, command and control structures, sensor and communications jammers, communications networks and devices, and fire support in a dynamic environment which includes the effects of terrain and attrition on the outcome of the battle.

Object behavior is controlled via flexible rulesets. This is the primary means for modeling battle management in EADSIM. Users select rulesets, behaviors, set parameters in the rulesets, and program trigger event/response combinations to control the dynamic reactions of platforms to events in a scenario. Multiple rulesets are available for each of the following categories: air bases, aircraft, defensive commanders, offensive commanders, sensor platforms, and surface platforms. Hierarchical, distributed, and cooperative relationships are modeled. Many facets of attack operations including intelligence, surveillance, and reconnaissance, target engagement, and battle damage assessment are modeled in EADSIM.

EADSIM provides a number of distributed simulation, operational planning, exercise, training, and wargaming interfaces. These include Distributed Interactive Simulation (DIS), the Aggregate Level Simulation Protocol (ALSP) capabilities, and the High Level Architecture (HLA) capability. Other interfaces include Force on Force Interactive Retasking Environment (FIRE), operational planning tool, and a number of operational database interfaces.

EADSIM is being used by DoD, Office of the Secretary of Defense, U.S. agencies, and internationally at nearly 400 sites around the world. It is used by 16 foreign users through Memoranda of Agreement and Foreign Military Sales. EADSIM is used extensively for studies to include: the Theater Missile Defense Cost and Operational Effectiveness Analysis, NATO Feasibility Study, Analysis of Alternatives, Theater Missile Defense, Cruise Missile Defense, and Intelligence, Surveillance, and Reconnaissance studies.

Of particular note, EADSIM was used successfully by the U.S. Air Force Studies and Analyses Agency to analyze attrition, Suppression of Enemy Air Defense missions, and refueling operations during OPERATIONS DESERT SHIELD and DESERT STORM. DESERT STORM's chief air campaign planner, Brig. Gen. Glosson, stated that EADSIM "saved lives and equipment." In addition, the 32nd Army Air Defense Command used EADSIM during both operations to analyze proper positioning of PATRIOT in Israel and Turkey. EADSIM is being used today in operation planning for OPERATIONS ENDURING FREEDOM and IRAQI FREEDOM.



For more information, please contact:
U.S. Army Space and Missile Defense Command
Public Affairs Office
P.O. Box 1500
Huntsville, AL 35807-3801
Phone: 256-955-3887
Fax: 256-955-1214
Email: webmaster@smdc.army.mil
Distribution A 0105/0532