



EXTENDED AIR DEFENSE SIMULATION (EADSIM)



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

Extended Air Defense Simulation is a system-level simulation of air, space and missile warfare developed by the U.S. Army Space and Missile Defense Command Space and Missile Defense Center of Excellence's Capability Development Integration Directorate. EADSIM provides an integrated tool to support joint and combined force operations and analyses. EADSIM is also used to augment exercises at all echelons with realistic air, space, missile, and Battle Management, Command, Control, Communications, and Intelligence (BM/C3I) 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 one of the most widely used simulations in the Department of Defense.

- Nearly 300 user communities 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



EADSIM

Extended Air Defense Simulation, or EADSIM, is a system-level simulation of air, space and missile warfare developed by the U.S. Army Space and Missile Defense Command Space and Missile Defense Center of Excellence's Capability Development Integration Directorate. It is used for scenarios ranging from few-on-few to many-on-many, and it represents a broad range of 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 decision processes and the communications among platforms on a message-by-message basis. Intelligence, surveillance and reconnaissance is 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 that 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: airbases, 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, High Level Architecture capability, and tactical communications. Other interfaces include Playback Interactive Console, an independent, graphics-based program used to review scenario results in an animated battle scene format; Force-on-Force Interactive Retasking Environment for operator-in-the-loop interactions supporting exercises; operational planning tools for defense analysis; and a number of operational database interfaces for increased fidelity.

EADSIM is used extensively for analysis of alternatives, integrated air and missile defense and intelligence, surveillance, and reconnaissance studies.

- Active Defense
 - Surface-to-Air engagements
 - Air-to-Air engagements
 - Multi-tier engagements
 - Theater Ballistic Missile engagements (boost, midcourse, terminal phases)
 - Surface-to-Surface engagements (cruise, ballistic, advanced)
- Passive Defense
 - Infrared signature
 - Radar Signature
- Attack Operations
 - Surface-to-Surface attacks
 - Air-to Surface attacks
 - Surveillance
 - Intelligence collection
- BM/C3I
 - Engagement logic
 - Command and Control structure
 - Communications networks
 - Protocols
- Integrated Air and Missile Defense
 - Preferential selection of sensors to provide Launch on Remote/Engage on Remote
 - Centralized control/distributed engagement coordination/decisions
 - Configurable information exchange between sensors, Command and Control nodes, and shooters
 - Imperfect correlation/miscorrelations/lack of correlation/over-engagement/under-engagement of tracks
- Cyber Electromagnetic Activities
 - Downstream effects on combat systems
 - Cyber attack timing fixed, randomized, or tied to dynamic simulation event
 - Agile jammers to prioritized targets
 - Multiple jammers stacked on threat emitter



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