Digital Integrated Air Defense System (DIADS)

Benefield Anechoic Facility

The 772 Test Squadron has developed and maintains the Digital Integrated Air Defense System (DIADS). It accurately simulates command and control (C^2) system impacts on the battle space and generates the enemy's perception of the air picture. DIADS incorporates real world trackers used by modern enemy air defense systems currently deployed throughout the world. A mission-level Integrated Air Defense System can be accurately represented. This is done through software representations of sensor models into those trackers used by modern enemy air defense systems. It can simulate a country's or region's assets that are currently deployed or projected to be operational in the 21st Century. The simulation can be operated stand-alone, faster than real-time for constructive use, or in various Operator-in-the-Loop/Hardware-in-the-Loop real-time modes. DIADS simulates several generations of surface-to-air missile systems, radars, tracking algorithms and command and control nodes, many of which represent real systems that are deployed or are expected to be deployed. This allows DIADS to provide critical insight into the survivability of DoD weapons systems operating in hostile airspace.

The modeling allows testing against individual threats in a 1v1 or 1vMany scenario up to full up mission level testing to stress operational plans and support both Developmental and Operational testing along with full scale Red Flag training exercises. It provides insight into the total RF environment expected in combat by faithfully representing the signals that pilots and systems will encounter when facing the enemy.

DIADS has extensive interfacing capabilities and can be used in support of large scale, distributed testing or training exercises using standard interfaces such as DIS, TENA, and ASTERIX to interface with the customers systems as required.

The ability to gain insight into the total electromagnetic environment (EME) expected in combat with extensive interfacing capabilities and integrated with multi-spectral environment generators,external simulations, models, and T&E assets is available at the DIADS facility.

U.S. AIR FORCE

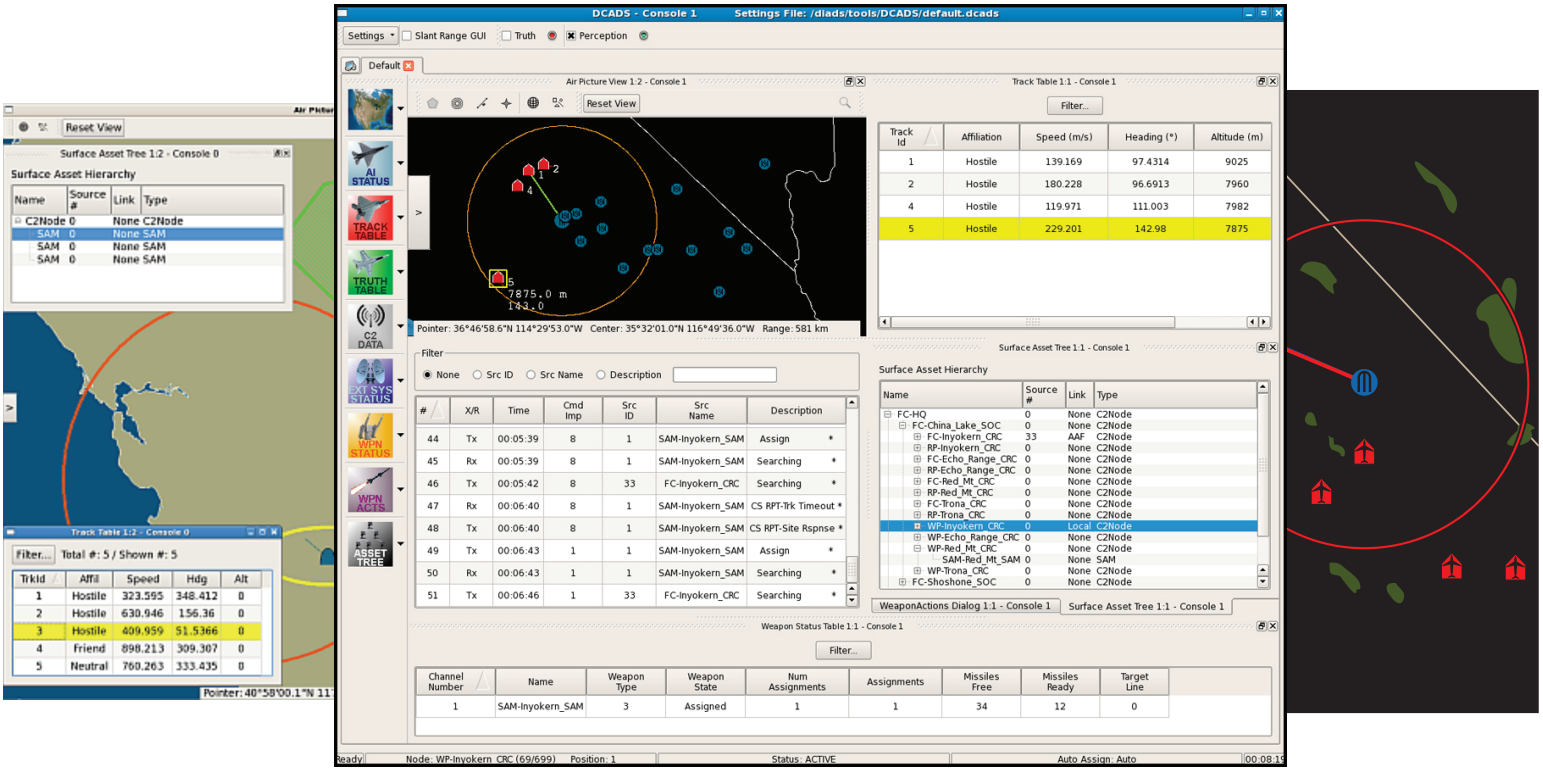
Benefield Anechoic Facility (BAF)

Digital Integrated Air Defense System (DIADS)

- **Key Features**
  - Validated C^2 models
  - Flexible Mission Development
    - Live, Virtual, Constructive
    - Scalable to handle large simulations thru distributed processing
    - Can be customized to meet unique customer requirements
  - Multiple scenario databases
    - Countries of Interest
    - Intel-Representative
  - Extensive libraries
    - Aircraft Blue/Red
    - Radars
    - Multi-Generational Command and Control
    - SAMs
  - Runs on Linux OS
    - Red Hat
    - SuSE
  - Standard interfaces
    - DIS
    - TENA
    - ASTERIX
- **Simulates**
  - Air surveillance radars
  - Aircraft detections
  - Track initiation and updating
  - Identification Friend or Foe
  - Filtering tracks of interest
  - Present air picture
- **Weapons Control**
  - Commitments
  - Assignments
  - Engagements
- **DIADS Functions**
  - In constructive digital simulations
  - Operates in real-time with man-in-the-loop (MITL) and synthetic operators
  - Integrates with hardware-in-the-loop (HITL)

Sample Customers

- F-22A: Air Combat Simulation (ACS) Increment 3.1 OT
- F-35 (JSF): Verification Simulation (VSim) DT and OT&E
- Red Flag: Nellis Test and Training Range & Joint Pacific Alaska Range Complex
- MALD/J: Miniature Air Launched Decoy/Jammer OT&E
- 90th Information Operations Squadron: Air Force Cyber Simulation Center



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