

DoD National Airspace System (NAS)

Executive Summary

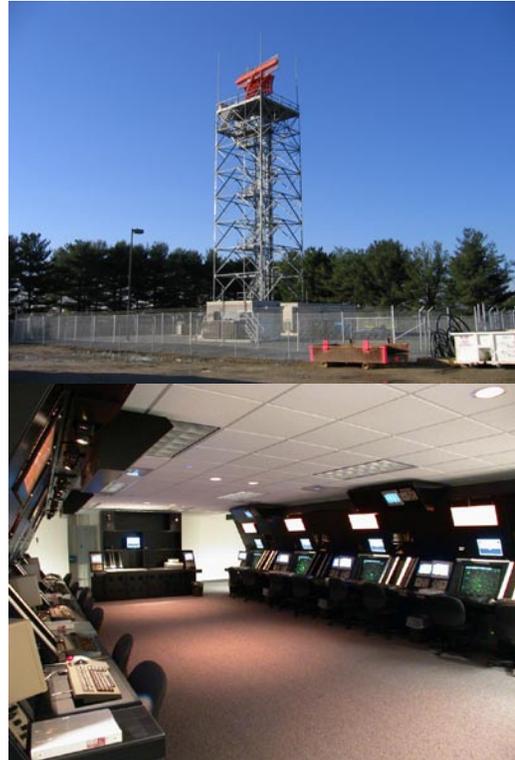
- The Air Force conducted FOT&E to evaluate correction of previously identified DoD National Airspace System (NAS) deficiencies and system performance compared to revised requirements. Based on FOT&E results, the DoD NAS is operationally effective and suitable for current mission requirements.
- The DoD NAS is meeting expected reliability and availability rates, although the level of effort required to maintain the DoD NAS radar component does not meet Operational Requirement Document (ORD) requirements in some areas. Test results indicate that assigned maintenance personnel and resources are sufficient to support current operational requirements.
- The DoD NAS has not fully implemented all recommended DoD information assurance controls.
- Follow-on operational testing is required to assess planned system enhancements intended to address deferred or emerging operational capability requirements.

System

- The DoD NAS is a joint program with the Federal Aviation Administration (FAA) to upgrade Air Traffic Control (ATC) automation equipment and supporting radar and communications systems at designated continental United States and outside continental United States FAA and military installations.
- The DoD NAS is comprised of the DoD Advanced Automation System, Digital Airport Surveillance Radar, and Voice Communication Switching System. These systems provide modernized capabilities and improve interoperability between DoD and FAA ATC facilities.

Mission

- Military air traffic controllers use the DoD NAS to direct ATC operations in DoD-controlled airspace. Specific mission tasks



- include radar identification and tracking, air-to-ground voice communication, aircraft separation, and air traffic sequencing.
- DoD and FAA ATC facilities use the DoD NAS to accomplish a seamless transition of aircraft between military and FAA controlled airspace.

Prime Contractors

- Raytheon Network Centric Systems, Marlboro, Massachusetts
- Litton-Denro Inc., Gaithersburg, Maryland

Activity

- The Air Force Operational Test and Evaluation Center led a multi-Service DoD NAS FOT&E in accordance with the DOT&E-approved test plan. The FOT&E re-evaluated effectiveness and suitability shortfalls identified during the 2004 Multi-Service Operation Test and Evaluation (MOT&E) III. The FOT&E also evaluated new and revised operational requirements established in the DoD NAS ORD III, published in 2005.
- Contractor and government testing is in progress to assess additional system improvements intended to address deferred

or emerging operational requirements. These system improvements include the Advanced Signal Data Processer (ASDP), the Automated Protocol Exchange (APEX) foreign nation interface system, and Mode S radar transponder capabilities.

Assessment

- The DoD NAS is operationally effective. FOT&E results verified correction of previously identified deficiencies related to traffic conflict alerts, minimum safe altitude warnings,

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radar clutter, information assurance controls, and weather displays. Demonstrated operational site characterization and optimization procedures are effective.

- The DoD NAS is operationally suitable. Improved system reliability and availability rates met stated operational requirements. Technical data, training, manpower, and logistics also improved and met mission requirements. The DoD NAS is meeting expected reliability and availability rates. Although the level of effort required to maintain the DoD NAS radar component does not meet ORD requirements in some areas, test results indicate that assigned maintenance personnel and resources are sufficient to support current operational requirements.
- Suitability conclusions reflect analysis of data from multiple Air Force operational sites. Data provided for Navy operating locations was not sufficient for a complete suitability evaluation. The Army did not provide NAS suitability data. The Air Force system configurations are representative of DoD-wide systems, but any Navy and Army-specific maintenance process differences are not fully reflected in FOT&E data.
- The DoD NAS has improved information assurance controls and procedures since the 2004 MOT&E III. However,

FOT&E results indicate that the DoD NAS has not fully implemented 25 of 68 recommended DoD information protection and intrusion detection controls prescribed since the last DoD NAS information assurance certification. Failure to implement information assurance controls increases operational security risks.

Recommendations

- Status of Previous Recommendations. The Air Force addressed two of the three FY05 recommendations and partially addressed a third recommendation regarding additional operational testing.
- FY09 Recommendations.
 1. The Air Force should conduct follow-on operational testing to assess the ASDP, APEX, and Mode S system enhancements intended to address deferred or emerging operational capability requirements.
 2. The Services should coordinate with the FAA to review current information assurance controls and implement any required changes. The program should conduct follow-on testing to verify the effectiveness of information protection and intrusion detection improvements.