# Expeditionary Combat Support System (ECSS)

Executive Summary
- The Air Force Operational Test and Evaluation Center (AFOTEC) conducted an Early Operational Assessment (EOA) during a contractor-led developmental test event of Release 1, Pilot A of the Expeditionary Combat Support System (ECSS) in Beavercreek, Ohio, from February 1 to April 9, 2010. The primary objective of the EOA was to assess system progress toward achieving Release 1 objectives.
- Due to the limited scope of Pilot A (with less than one-tenth of the planned Release 1 capability), AFOTEC was not able to collect sufficient quantitative data for DOT&E to determine if the program was on track to deliver desired performance at the conclusion of Release 1. However, interviews with functional subject matter experts (SMEs) and analysis of the limited data enabled testers to identify several areas requiring attention, including data quality, data conversion, handheld scanner needs, interoperability, usability, information assurance, and requirements testability.
- After the completion of the EOA, the program office took actions to address identified shortfalls and conducted further developmental tests to mitigate the concerns identified during the EOA. In addition, the program office planned additional time and significantly increased the resources to support the remainder of Release 1 development. On July 31, 2010, ECSS Release 1, Pilot A went live for users at Hanscom AFB, Massachusetts, after achieving an Authority to Operate in the DoD network. Based on the additional tests completed by the 46th Test Squadron, DOT&E assesses the program as having significantly increased the likelihood of now achieving its Release 1 goals.

System
- ECSS is a Major Automated Information System supporting Air Force worldwide logistics operations.
- ECSS is designed to transform existing Air Force logistics operations and business processes using commercial best practices and the commercial off-the-shelf Oracle Enterprise Resource Planning product suite to achieve increased equipment availability and decreased logistics cost.
- ECSS will operate on the Global Combat Support System – Air Force (GCSS-AF) Integration Framework to promote compatibility with other Air Force and DoD information technology systems.
- The acquisition strategy employs four releases (increments). Each release is treated as a separate acquisition with its own set of acquisition phases and milestones.

Expeditionary Combat Support Vision...
Warfighter Focused
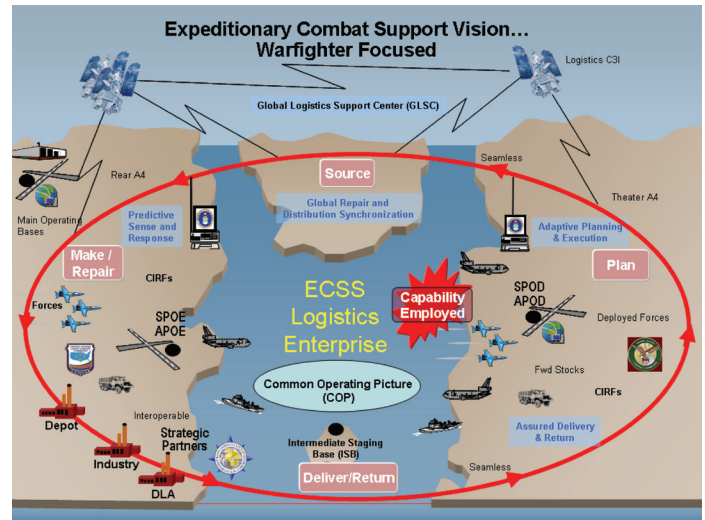
APOD - Aerial Port of Debarkation
APOE - Aerial Port of Embarkation
C3I - Command, Control, Communications and Intelligence
CIRF - Centralized Intermediate Repair Facilities
SPOD - Sea Port of Debarkation
SPOE - Sea Port of Embarkation

- Release 1 contains three pilots to be implemented primarily at Hanscom AFB, Massachusetts:
  - Pilot A – Foundational Configuration and Tools and Vehicles Management
  - Pilot B – Equipment Management
  - Pilot C – Base Supply Chain
- Release 2 will provide additional capabilities to support enterprise planning of materiel, management of depot-level supply, and product lifecycle management activities.
- Release 3 will support depot maintenance, repair, and overhaul.
- Release 4 will support flight line maintenance and ammunitions management.

Mission
- Air Force combat support personnel will use ECSS to provide an enterprise view of repair and overhaul capacity by managing the flow of repairable assets, to include physical return, disposition, maintenance, condemnation, and procurement of replacement assets.
- The Air Force and DoD leadership will use ECSS to access critical, standardized, real-time, logistics-related information to make sound strategic business decisions.

Major Contractors
- Computer Sciences Corporation (CSC) – Dayton, Ohio
- Oracle Corporation – Reston, Virginia

Activity

- AFOTEC conducted an EOA during a contractor-led developmental test event of Release 1, Pilot A in Beavercreek, Ohio, from February 1 to April 9, 2010. AFOTEC conducted the EOA in accordance with the DOT&E-approved Test and Evaluation Master Plan and EOA Plan. The primary objective of the EOA was to assess system progress toward achieving Release 1 operational effectiveness, suitability, and survivability criteria.
- The 46th Test Squadron completed a vulnerability assessment and a penetration test at Gunter Annex, Maxwell AFB, Alabama, where ECSS is hosted on a GCSS-AF-representative test infrastructure.

Assessment

- Due to the limited scope of Pilot A (with less than one-tenth of the planned Release 1 capability), AFOTEC was not able to collect sufficient quantitative data for DOT&E to determine if the program was on track to deliver desired performance at the conclusion of Release 1. However, interviews with functional SMEs and analysis of the limited data enabled testers to identify several areas requiring attention, including data quality, data conversion, handheld scanner needs, interoperability, usability, information assurance, and requirements testability.
- The EOA testers witnessed the completion of more than 50 test scenarios. SMEs indicated that vehicle management information was stored and displayed correctly. However, they questioned the system's ability to effectively manage the information for tools, primarily due to the lack of a suitable handheld scanner.
- The handheld scanner demonstrated during the EOA for Tools Management was slow, and required far more keystrokes than current legacy systems. An insignificant quantity of legacy data was used for the EOA, so data conversion was only marginally assessed. ECSS will rely heavily on legacy data for its success, and data conversion is a major concern for future pilot releases.
- ECSS Release 1 will have approximately 120 interfaces. However, Pilot A had only implemented two, so there

were insufficient data to assess interface development. Interoperability also remains a major concern.
- SMEs indicated that too many steps are required to complete a work order and some steps seemed unnecessary. Since the mission scenarios were scripted, a comprehensive usability assessment could not be made.
- The 46th Test Squadron identified more than 100 vulnerability findings during their security test. About one-half of them were attributable to the test infrastructure, but the rest were attributable to ECSS, and most of those were considered to have high potential for allowing unauthorized access.
- Many requirements provided in the Capability Document were written at too high a level to support the objectives of the Expeditionary Logistics for the 21st Century initiative and were not written specifically to address the performance of ECSS.
- After the completion of the EOA, the program office took actions to address identified shortfalls and conducted further developmental tests to mitigate the concerns identified during the EOA. In addition, the program office planned additional time and significantly increased the resources to support the remainder of Release 1 development. On July 31, 2010, ECSS Release 1 Pilot A went live for users at Hanscom AFB, Massachusetts, after achieving an Authority to Operate in the DoD network. Based on the additional tests completed by the 46th Test Squadron, DOT&E assesses the program as having significantly increased the likelihood of now achieving its Release 1 goals.

Recommendations

- Status of Previous Recommendations. This is the first annual report for this program.
- FY10 Recommendation.
  1. The ECSS functional sponsor should revise the Capability Document prior to Milestone C to assure that requirements to support the IOT&E of Release 1 are testable and operationally relevant to the ECSS.