

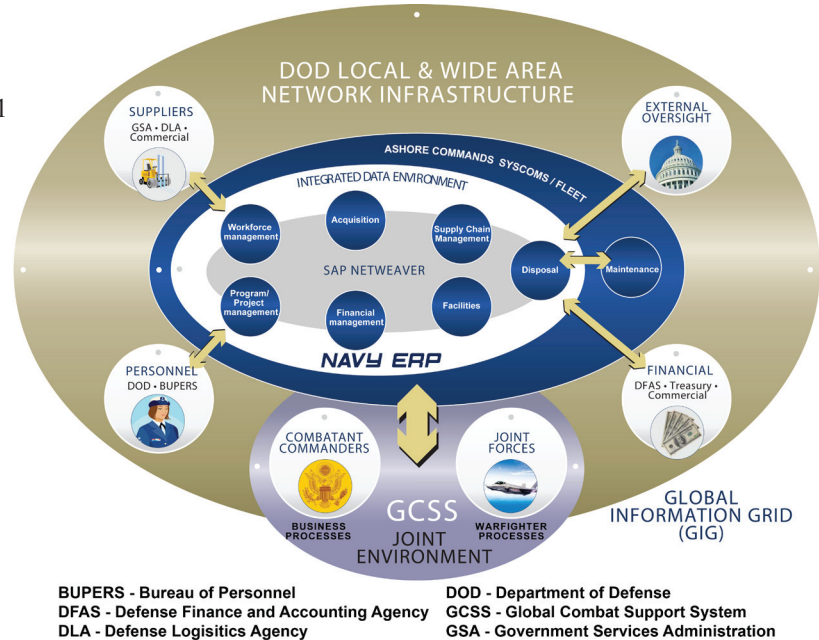
## Navy Enterprise Resource Planning (ERP)

### Executive Summary

- The Commander, Operational Test and Evaluation Force (COTF) conducted an FOT&E of the Navy Enterprise Resource Planning (ERP) Single Supply Solution Release 1.1 from April 1 through May 31, 2013. DOT&E gathered data from COTF and observed Navy users performing logistics operations at Naval Supply Systems Command (NAVSUP) Weapon Systems Support, Mechanicsburg, Pennsylvania; Fleet Logistics Center (FLC) Pearl Harbor, Hawaii; and FLC Norfolk, Virginia.
- During FOT&E, COTF evaluated whether corrective actions had resolved IOT&E deficiencies in the following areas:
  - Initial Source Processing Time (ISPT) (a Key Performance Parameter (KPP))
  - Intermediate Document (IDOC) processing
  - Organic repair contract modifications
  - System defect management
- The FOT&E also evaluated the Warehousing and the Environmental Health and Safety (EH&S) capabilities, which were not available during IOT&E.
- Navy ERP is operationally effective. The Navy ERP contribution to ISPT is minor and is acceptable to both users and evaluators. IDOC processing has made substantial progress since the IOT&E, meets threshold requirements, and continues to improve. The automated organic repair contract award and modification capability exceeds threshold requirements. Navy ERP effectively manages warehousing operations with some limitations that have acceptable workarounds. The Navy ERP EH&S capability adequately facilitates procurement, tracking, transportation, and handling of hazardous material (HAZMAT).
- Navy ERP is operationally suitable. The system achieved all reliability, availability, and maintainability thresholds. The program's configuration and defect management processes have improved since the IOT&E. The total number of outstanding defects has remained constant at around 500, but none are Severity 1 or Severity 2 deficiencies and the workarounds are acceptable. Most of the outstanding defects are longstanding, low-severity, low-priority deficiencies with viable workarounds. New deficiencies, particularly high-severity ones, are being corrected expeditiously. The regression testing process was efficient, with 87 percent of critical business test scripts automated.

### System

- Navy ERP is an integrated financial, acquisition, and logistics information technology system that provides financial and budgetary management for all Navy system commands. It is fully deployed to approximately 72,000 users worldwide in support of NAVSUP and its FLCs, Naval Air Systems



Command, Naval Sea Systems Command, Space and Naval Warfare Systems Command, naval air stations, HAZMAT centers, Strategic Systems Program locations, and the Office of Naval Research.

- The Navy ERP application architecture is based on the commercial off-the-shelf System Applications and Products (SAP) Business Suite and NetWeaver products. Navy ERP uses SAP ERP Central Component, SAP Supply Chain Management from the Business Suite and Enterprise Portal, Business Intelligence, Process Integration, and Knowledge Management modules.
- The Navy ERP program is a major component of the Navy's Global Combat Service Support family-of-systems and is compliant with the Global Information Grid. The system interfaces with 50 external automated systems to exchange acquisition, financial, manpower and personnel, and logistics data.

### Mission

The Navy uses the system to:

- Implement an ERP business management system for the Navy to modernize and standardize financial, workforce, and supply chain management across the naval enterprise
- Manage more than one-half of its Total Obligation Authority
- Produce auditable financial statements in the future, enabling compliance with federal financial and security standards, the Chief Financial Officers Act of 1990, and the DoD Information Assurance Certification and Accreditation Process

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## Major Contractors

- International Business Machines (IBM) – Bethesda, Maryland
- Deloitte – New York, New York
- Electronic Consulting Services (ECS) iLuMinA Solutions, Inc. – Fairfax, Virginia

## Activity

- The Navy completed fielding of Navy ERP to the FLCs, partner sites, the Strategic Systems Program, and the Office of Naval Research in 1QFY13.
- COTF conducted an FOT&E of Navy ERP Single Supply Solution Release 1.1 from April 1 through May 31, 2013. DOT&E observed Navy users performing logistics operations at Weapon Systems Support, Mechanicsburg, Pennsylvania; FLC Pearl Harbor, Hawaii; and FLC Norfolk, Virginia.
- COTF conducted all testing in accordance with the DOT&E-approved Test and Evaluation Master Plan and FOT&E plan.

## Assessment

- The FOT&E evaluated whether corrective actions had resolved IOT&E deficiencies in the following areas:
  - ISPT (KPP)
  - IDOC processing
  - Organic repair contract modifications
  - System defect management
- The FOT&E also evaluated the Warehousing and the EH&S capabilities, which were not available during IOT&E.
- ISPT is the average time (in days) required to process material from a customer's request to shipment from the warehouse. The measure is applicable to four classes of material: Aviation Repairables, Aviation Consumables, Maritime Repairables, and Maritime Consumables. During IOT&E, measurements of ISPT exceeded thresholds in all material classes except Aviation Consumables. Subsequent analysis showed that Navy ERP was not the primary factor affecting these times; the foremost cause of lengthy ISPT was backordered material.
- ISPT is a poorly chosen KPP; it may measure the supply chain, but it is an invalid measure of Navy ERP effectiveness unless qualified further. Consequently, DOT&E, in coordination with NAVSUP and COTF, developed a new methodology to determine the Navy ERP contribution to ISPT. The Navy ERP contribution to ISPT is defined to include Navy ERP system and business process time, while excluding backorder time, an ISPT logistics factor that is independent of the ERP and its associated business processes.
- During FOT&E, the Navy supply chain did not meet ISPT threshold values with 24.4 days for Aviation Repairables (22-day threshold), 45.9 days for Maritime Repairables (23-day threshold), and 18.2 days for Maritime Consumables (10-day threshold). The Navy ERP contribution to ISPT for each of these categories was 2.8 days for Aviation Repairables, 5.8 days for Maritime Repairables, and 4.2 days

- for Maritime Consumables. This is well below supply chain ISPT threshold values, is minor compared to non-ERP factors, and is acceptable to both users and evaluators.
- Navy ERP communicates certain transactions with external systems via IDOCs. If an IDOC is defective when it is received, Navy ERP is programmed not to process it. The failed document must then be processed manually. This safety mechanism prevents populating the system with bad information, but too many failures can adversely affect operations, require more time and manpower to process orders, and pay vendors. Following IOT&E, NAVSUP established a goal of less than 10 percent failures overall and accomplished this threshold with an IDOC failure rate of less than 7 percent over the past year.
  - During IOT&E, the organic repair capability did not provide for automated processing of contract awards and modifications, resulting in users performing most of the process off-line. The Program Office developed an automated organic repair contract award and modification capability. Tests at all FOT&E sites resulted in a success rate of over 96 percent (between 93.4 and 99.0 percent at an 80 percent confidence level.)
  - The program's configuration and defect management processes have improved since the IOT&E. A Configuration Control Board effectively manages software changes, prioritizing them by criticality, user need, and cost. The total number of outstanding defects has remained constant at around 500, but none are Severity 1 or Severity 2 deficiencies and the workarounds are acceptable. Most of the outstanding defects are longstanding, low-severity, low-priority deficiencies with viable workarounds. New deficiencies, particularly high-severity ones, are being corrected expeditiously. The regression testing process was efficient, with 87 percent of critical business test scripts automated.
  - Navy ERP effectively manages warehousing operations with some limitations that have acceptable workarounds. Logistics personnel use a time consuming workaround to address discrepancies when reconciling depot inventories with the Naval Aviation Logistics Command Management Information System. Non-deployable air wing unit and stock replenishment requisitions were sometimes referred against deployable unit allowances, causing a manual review of each such action by warehouse managers. NAVSUP implemented a new, single national inventory management strategy to prioritize and streamline inventory management, making warehouse managers' manual review process ineffectual.

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- The Navy ERP EH&S capability adequately facilitates procurement, tracking, transportation, and handling of HAZMAT.
- Financial fraud testing could not be included in the FOT&E because a Federal Information System Controls Audit Manual (FISCAM) Phase II assessment was ongoing and the Program Office had not yet corrected financial vulnerabilities identified in the FISCAM Phase I report and during an Independent Verification and Validation.

## **Recommendations**

- Status of Previous Recommendations. The Navy addressed all previous recommendations.
- FY13 Recommendations.
  1. The Program Office and NAVSUP should continue to execute their current processes for reducing defect and IDOC failure backlogs.
  2. The Program Office should develop a Naval Aviation Logistics Command Management Information System interface solution to increase the accuracy of warehouse inventories and reduce time-consuming workarounds.
  3. NAVSUP should make fleet personnel aware of the new single national inventory management strategy.
  4. The Program Office and COTF should address financial vulnerabilities and plan for financial fraud penetration testing in 2014.

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