

# Operational Test and Evaluation Force Knowledge Management System Requirements Document

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## **1. BACKGROUND**

Operational Test and Evaluation Force (OPTEVFOR) serves as the United States Navy's sole operational test agency. OPTEVFOR advises the Chief of Naval Operations on the effectiveness and suitability of systems under test and how those systems impact the joint warfighting effects required by Sailors, Marines, Airmen, and Soldiers. The Commander must provide a clear and unambiguous assessment of systems under test through the use of Mission Based Test Design (MBTD), integrated test techniques and data collection, robust analytical methods, and timely dissemination of information.

The current Knowledge Management System (KMS) used by OPTEVFOR consists primarily of disjointed interfaces that do not provide users or decision makers with the necessary tools to efficiently produce test and evaluation products or make enterprise level decisions based on real-time, accurate data. Existing stovepipe programs that do share data further exacerbate the system inefficiency. Additionally, the current system lacks the dashboard functionality or intuitive graphical interfaces necessary for the user to quickly garner information.

The new KMS used by OPTEVFOR must support the design and execution of robust operational evaluations for systems under test while strengthening the evaluative process and leading to the timely dissemination of reports.

## **2. OPERATIONAL CONCEPT**

### **2.1. Operations**

Every facet of OPTEVFOR's mission relies on the KMS. System functionality will include data storage, analysis tools, report generation and routing, staffing, and archiving. Additionally, the system will contain historical and real-time databases capable of supporting detailed queries. An integrated KMS will form the foundation for OPTEVFOR to effectively and efficiently accomplish its mission. The enterprise system must be capable of satisfying the needs of not only the operational tester, but those of the decision makers as well. The system will be required to produce products for external stakeholders while interfacing with external data systems. The new KMS must incorporate the legacy data currently stored in the resident Test and Evaluation Program System (TEPS). The KMS will be required to operate on unclassified and classified networks.

## **2.2. Quantities and Location**

The KMS will be maintained per all Department of Defense (DoD)/Department of the Navy (DoN) and command level instructions. Downtime for routine maintenance will be communicated in advance and will be performed in a manner to minimize operational impact.

Data backup and offsite storage will be integrated into existing enterprise solutions. The specific technology base for system backups will be determined after evaluation of the storage and performance requirements, and projected growth pattern for the KMS. The final solution will be cost effective and capable of matching the performance, availability, and redundancy needs of the KMS.

## **3. Operational and Functional Requirements**

### **3.1. Data Management Functions**

The system shall include a project-level database for every program under test. The test program system shall be expandable as new programs are added. The system will display individual programs as a single interface page. Information on the program page must be capable of being tailored by system administrators. Menu and link functionality will be incorporated to tie program documentation to the program page. The program database shall be searchable and provide responses to data queries. The results of these queries shall be exportable in commonly used formats. Additionally, the program page will display or link to the following:

- Program description
- Individual phases of test/program schedule
- Test results
- Critical Operational Issue resolution
- History of all program deficiencies discovered during testing
- Detailed program information

The test program system shall minimize repetitive data entry. Data fields containing the same information will be populated with a single entry. The system will improve workflow and accuracy of data entry by prompting the user to input required data when preset conditions are met.

### **3.2. Document and Test Product Development**

The system shall minimize data entry and maximize efficiency during the creation of command documents and test products. The system will make efficient use of preformatted templates during the creation of commonly produced reports and products. Additionally, the system will aid the drafter during the report generation process by comparing the draft document to a set of tailored standards and business rules. These rules shall be capable of being modified by system administrators.

Test Report deficiencies will be documented using a standard format known as the six-part paragraph. The system will aid the document drafter by structuring the deficiencies in the correct paragraph format and subsequently inputting the correctly formatted deficiency into the report template thereby eliminating cut and paste operations or the need for retyping. The six-part paragraph function shall populate appropriate deficiency sections in all types of evaluation reports.

Report and test product creation will leverage common and repeatable information unique to the project for which the document is being created. Standard sections of the reports, such as system description, test methodology, limitations, etc, shall be automatically transferred to the documents so as to minimize repetitive recreation of information already resident in the system.

The capability for near real-time collaboration is necessary for efficient document and product creation. The KMS will support online collaboration, which will facilitate product creation, review, and editing when project team members are not collocated at the command headquarters.

### **3.3. Document Routing and Staffing**

The system shall be capable of electronic routing and staffing of all documents generated within the command while displaying business processes and workflows to include document lifecycles. A workflow/business process information capture and display will provide a means for tracking the status and location of a document at any point in its lifecycle. This information shall contribute to an enterprise-level dashboard display for all command generated products and documents. The dashboard shall be capable of displaying the status of documents by product type or originating code. The routing and review sequence will be established by document type. The routing sequence shall also be modifiable should abbreviated routing be necessary.

A document's properties shall be capable of being modified by the owner/originator, and the document lifecycle display shall allow the document to be opened in a read-only format during the drafting process.

A document tracker/lifecycle display shall provide for the capability for an editor/reviewer to check out the document, which shall lock the document for editing by another reviewer. Reviewer comments shall be captured in a separate display from the document. All editorial comments shall be visible to subsequent reviewers.

The system shall provide alerts when the status of a document changes. Conditions and recipients of alerts shall be capable of being tailored. Additionally, the system should provide document drafters proactive alerts at predetermined intervals, which indicate the requirement or due date for a particular product is approaching.

Versioning and version control of a document shall be provided through all phases of the document lifecycle. The system shall provide controls and tools that prevent document redundancy. Multiple copies of the same document shall be prevented from being uploaded in different locations in the system.

#### **3.4. Archiving and Retrieval**

Program and project documents must be efficiently stored and systematically arranged so as to provide an accessible and searchable library of historical references. The library should be cross-referenced to enable searches involving multiple criteria.

The archival system will use a standardized document naming convention. The criteria for the naming standards will be modifiable and selectable by system administrators.

Archived documents should be stored as PDF files. The system should support searches and queries of individual and multiple PDF files. Searches and queries will involve not only documents created within the new KMS, but those legacy documents incorporated into the system as well.

#### **3.5. Test Management Functions**

The system will provide the user with a step by step methodology for program test execution. The dashboard-type display will leverage a preset test anatomy timeline and provide a clear task breakdown in support of future events. The system will track task progress with respect to the anatomy timeline

and provide alerts to indicate when tasks should be started and completed.

The system shall capture enterprise-level metrics regarding the quantity and lifecycle times of the various documents created within the command. The system shall allow for tailoring of metric collection parameters.

The system will incorporate the capability to project manpower and level-of-effort resources needed based on future workload. The system will use modifiable level-of-effort standards for test products. These standards will be compared to the test anatomy timelines for each program to determine future manpower resources. Future resources will be displayed in a dashboard format, clearly identifying gaps or excesses where they exist.

The KMS will incorporate a tool for MBTD. This system will interface with the archived library and test program system. The MBTD tool will enable the user to decompose complex test events. This decomposition will be cross-referenced to create the most effective test strategy.

#### **4. PHYSICAL INTEGRATION**

The sharing of information and expertise is critical to the successful execution of the OPTEVFOR mission. To facilitate collaboration and productivity, the KMS shall be accessible to authorized entities working from their desks or at an external worksite. Methodologies and tools will be implemented to ensure seamless access to KMS-based resources for remote users.

#### **5. SOFTWARE INTEGRATION**

To the greatest extent possible, the KMS application will facilitate data layering against the existing TEPS.

#### **6. SECURITY**

##### **6.1. Physical Security**

The governing command security instruction will provide the basic policy for command personnel. New personnel checking into the command will receive physical and information security training as part of their indoctrination process. Periodic refresher training will be provided for everyone to ensure personnel remain current with applicable security policies.

To ensure the integrity, safety, and security of data resident within the KMS application, the system will be monitored for unauthorized data access attempts. To further

ensure the security of the KMS hardware, software, and firmware, unescorted physical access to the data center where KMS servers and backup devices are housed will be restricted to those personnel with validated administrative privileges.

## **6.2. Information Security**

The overarching command Information Assurance security policies and procedures will apply to the KMS. The policies will be implemented to ensure that security protections commensurate with the risk and magnitude of harm resulting from unauthorized access to, use, disclosure, disruption, modification, or destruction of data resident within KMS will be implemented. Measures will be implemented to ensure the availability, integrity, authenticity, confidentiality, and nonrepudiation of the data and information resident in the system.

## **6.3. Access Control**

The system will allow for access permissions to be established for each user. The capability will exist to provide external organizations read-only access to designated sections of the KMS. The permissions will determine the system access level for each user as well as the areas of the system which may be viewed.

## **7. IN-SERVICE SUPPORT**

### **7.1. Staffing**

The data and information that will be processed within the KMS represent valuable command resources. As such, an appropriately skilled staff must be onboard to ensure that OPTEVFOR's basic business needs are properly defined, developed, integrated, and maintained as an enterprise solution. System changes such as hardware/software upgrades, system patches, and new application development are essential to ensure continuous alignment and deliverance of business value. It is essential for effective system development, upgradability, and long-term supportability that experienced information management professionals are on staff.

The skill of the individuals participating in the KMS project is the single-most significant factor for a successful project. The following technical roles will need to be onboard to support the accomplishment of these functions:

- System Developers (2): Develop user interface and design automated tools to ingest, manipulate, display, and report system data.
- Database Administrator (1): Support the system developers in defining database structures, relationships, and underlying infrastructure that will support the KMS. An evaluation to determine if the need can be met with existing staff or if additional personnel are required will be conducted following the KMS selection.

## **7.2. Training and Training Support**

User training will be a critical element in ensuring entrenchment of the new application and its feature set into the daily work flow of OPTEVFOR. Initial hands-on training modules will be developed that provide internal and external users with an in-depth understanding of the systems operation and functionalities. Training modules will be implemented into the test director and other new-hire courses to ensure new personnel are properly trained.

## **8. IMPLEMENTATION AND TRANSITION**

The KMS application will be implemented using sound Information Technology Infrastructure Library and Program Management techniques. The combination of these approved industry techniques with the appropriate initial planning and evaluation of all the project elements will make the task of implementation run smoothly.

## **9. CONFIGURATION MANAGEMENT**

The emphasis of the KMS Configuration Management (CM) will be to ensure effective data management, system enhancements, and maintenance is conducted per federal guidelines. The Configuration Control Board will consist of the command Knowledge Management lead, Command Information officer, Information Assurance Manager, system developer, and divisional representatives.

A CM plan will be implemented that emphasizes decision processes that influence system cost and efficiencies. These decisions will be based on full consideration of business functional requirements, as well as economic and technical feasibility to produce an effective system. The objectives of the CM plan are to:

- Deliver a quality system which meets or exceeds customer expectations.

- Deliver systems that work effectively and efficiently within the current and planned information technology infrastructure.
- Deliver systems that are cost-effective to enhance and maintain.
- Develop a quality system using identifiable, measurable, and repeatable processes.
- Establish an organizational and project management structure with appropriate levels of authority to ensure that the KMS is effectively managed throughout its life cycle.