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# Wide Area Workflow (WAWF)

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## Concept Of Operations (CONOPS)

**Version 3.0**

July 2005



**Prepared For:**  
Defense Information Systems Agency

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## History Page

<i>Version</i>	<i>Date</i>	<i>Status</i>	<i>Change Description</i>
1.0	08/09/99	Final	The initial WAWF Operational Concept Description (OCD) reflecting the prototypical environment represented in ECP 1.0 through 1.3B.
2.0	10/19/01	Draft, awaiting government comments	The first Concept of Operations (CONOPS) for the production version of WAWF. Multiple iterations reflecting WAWF Release 2.0A, and future targeted releases: versions 2.0B, 2.0C, 2.0D.
2.1	04/12/02	Simultaneous released for peer and government review	First major revision of the 2.0 CONOPS. Incorporate revised operational scenarios arising from ECP 2.1 and technology refreshment activities. Modify electronic signature concepts to reflect interim solution employing USERID/ Password and Hardware Security Module (HSM) co-signing. Added notional support concept for Help Desk escalation and similar support activities. Amended training strategy with loss of Electronic Commerce Resource Center (ECRC) as classroom training resource.
3.0	11/12/04	Draft	Converted document to WAWF Styles formatting.
3.0-1	11/15/04	Draft	Reviewed and updated to reflect changes that have occurred since the last revision and to address the maintenance and sustainment requirements annotated in the latest Statement of Work. This rewrite replaces Revision 2.1, dated April 12, 2002.
3.0-2	01/21/05	Draft	Updated to reflect recommended changes from the review of 3.0-1.
3.0-3	05/15/05	Draft	Updated to reflect WAWF functionality through Version 3.0.8.
3.0-4	07/15/05	Draft	Per SPR# EDH8, read, edited, and applied WAWF Styles formatting to document.
3.0-5	07/20/05	Final	Delivered to Dimensions as Final.

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## 1 Scope

The Department of Defense (DoD) Wide Area Workflow (WAWF) initiative was created in response to the DoD Comptroller's Management Reform Memorandum #2 of May 21, 1997 -- Moving to a Paper-free Contracting Process. The WAWF prototype application became operational in Fiscal Year 1999. Since deployment, there have been fourteen revisions to the application. Each revision provided new user defined requirements and/or improved technology/program logic.

Comment [d1]: 1.1, 1.2, 1.3, 2.0A, 2.0B, 2.0C, 2.0D, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7

### 1.1 Identification

This project is assigned Delivery Order Number DCA100-03-F-4927 on the General Services Administration (GSA) FSS Information Technology Schedule General Purpose Commercial IT Software and Services, FSC Group 70, Part 1, Sections B & C (Contract Number GS-35F-4483G). The period of performance for this Task Order is November 1, 2004 through October 31, 2005 and is focused on the continuation of Service/Agency adoption of the WAWF application, enhancements to accommodate the increase of users, continued documentation in support of deployed enhancements and sustaining the production operational environment.

### 1.2 System Overview

The WAWF application provides a technical approach for integrating and applying electronic commerce solutions with Web interactive forms as a business solution. The overall objective is to allow authorized government Vendors and DoD personnel the capability to systematically generate and monitor Invoices and Receiving Reports.

#### 1.2.2 System Description

WAWF is a secure Web-based system for electronic invoicing, receipt and acceptance. It provides the technology for government contractors and authorized DoD personnel to generate, capture, and process receipt and payment-related documentation, via an interactive Web-based application. Authorized users are notified of pending actions by e-mail and are presented with a collection of documents to support their contractual or financial obligations. It uses Public Key Infrastructure (PKI) to electronically bind a user's digital signature to provide non-repudiation that the user (electronically) signed the document.

WAWF is the system that allows DoD to reach its e-invoicing goals and reducing interest penalties due to lost or misplaced documents. The application helps to mitigate DoD interest penalty payments due to lost or misplaced documents as well as highlighting Vendor offered discounts so that the DoD benefits on both fronts in addition to streamlining the whole process from weeks to days. Additional benefits include global online availability, full spectrum view of document status, minimized re-keying with improved data accuracy, reduction in unmatched disbursements and making all documentation required for payment easily accessible. Reference Figure 1-1: WAWF Process Diagram.

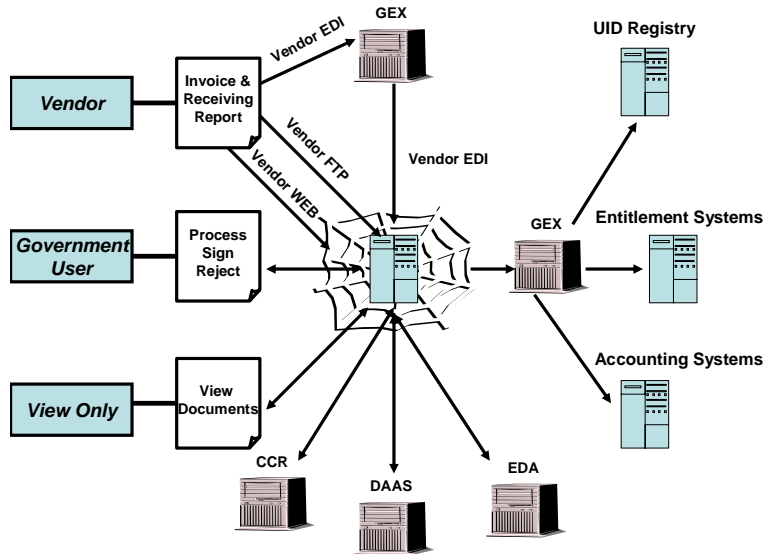
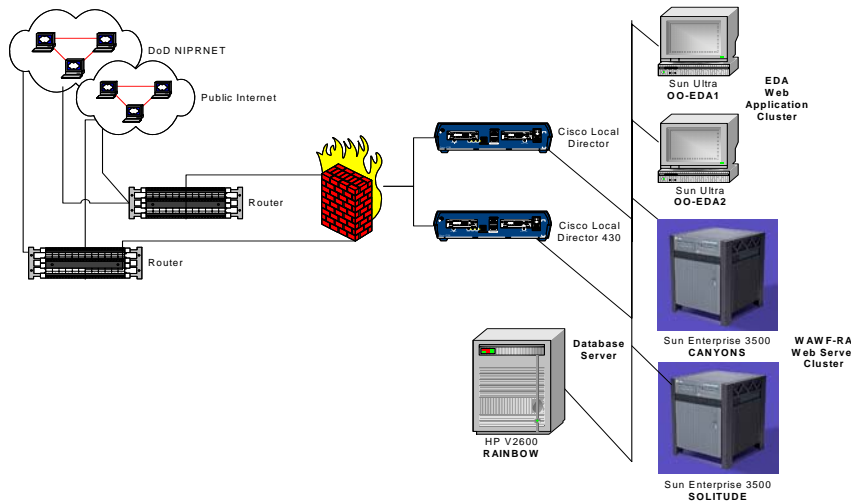


Figure 1-1: WAWF Process Diagram

**1.2.3 WAWF Technical Architecture**

The WAWF technical architecture is comprised of several components that perform specific functions within the application. The WAWF Web and application servers are currently hosted on two (2) Sun Enterprise 3500 series servers. Each Sun Enterprise 3500 server houses the WAWF Web server and application server applications to provide basic scalability using a scale-out philosophy of adding additional servers. The WAWF database is hosted on an HP 9000 series server. The WAWF database is hosted on a HP 9000 model V2600 server. The supporting network hardware environment provides load balancing and fail-over support between the individual servers. To provide network fail-over support, two Ethernet switches and a secondary Local Director is found within the WAWF configuration. Reference Figure 1-2: WAWF Technical Architecture.



**Figure 1-2: WAWF Technical Architecture**

**1.3 Document Overview**

This document provides a high-level overview of the applications components, functions, and supporting entities. It also provides an overview of approved and projected enhancements that focus on the visibility, recognition and accommodation of joint requirement opportunities and interoperability issues.

**1.3.1 Document Scope**

The information supports and conveys the Program Management Office (PMO) objectives outlined within the Statement of Work (SOW), dated October 28, 2004 and was formulated using the concept analysis approach, which is a process of analyzing a problem domain and an operational environment for the purpose of specifying the characteristics of a proposed requirement from the PMO or user’s perspective.

**1.3.2 Operational Concept**

The concepts depicted within this document are based on an assumption that there will be a continuation of an incremental approach to WAWF maintenance and sustainment requirements. This approach is an essential element toward the development of an operational concept road map. The road map consist of multiple Engineering Change Proposal (ECP) that are approved by the WAWF Joint Requirements Board (JRB) and formulated to support system modifications to change the functionality, performance and/or adhere to regulatory requirements. Three (3)

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releases with multiple ECPs have been formulated and projected for the period of performance covered by the current Statement of Work (SOW) with each representing the potential to affect the other. The first of the three releases has been deployed in April 2005 (Version 3.0.7). This particular release provided users with the following functionality:

- **ECP0040 Logistics System (DSS) Interface:** Provides the prototype for a logistics system interface with WAWF that enables DLA deployment, adds automated DLA Destination Acceptance capability and includes Vendor shipment information (pack data/RFID).
- **ECP0042 Additional Cost Voucher Approver Roles:** Provides three new user functionalities – Cost Voucher Receiver, Cost Voucher Approver and Cost Voucher Approver View Only.
- **ECP0044 Automatically Updating the DCMA Direct Bill CAGE Code Table:** Function currently does not exist, updates must be done manually.
- **ECP0152 Document Status Updates via the 824 Electronic Data Interchange (EDI) Transaction Set:** Developed to provide a more accurate reflection of a document's status once it has been forwarded to the DFAS entitlement system.
- **ECP0252 Document Creation from Templates:** Vendors will have the capability to use a previously submitted document as a template on Submission of a new document.

In addition to the ECPs, Technology Enhancement requirements are being evaluated for possible implementation of up-to-date technology capabilities.

### 1.3.3 Intended Audience

This document is intended to support consensus building among the acquirer, developer, support entities and user agencies. It provides the specific requirement base for the Acquisition Management decision process in regards to system modification, planning, budgeting, and marketing.

## 2 Referenced Documents

The DoD standards, guidelines, and documentation used to support the WAWF application are described in the following table.

**Table 2-1: References**

<i>Title</i>	<i>Date</i>	<i>Source</i>
Management Reform Memorandum #2, Moving to a Paper-free Contracting Process by January 1, 2000.	May 1997	DoD Comptroller
Department Of Defense, End-To-End Finance And Procurement Joint Concept Of Operations (Joint CONOPS) (Draft)	March 2001	Defense Finance And Accounting Service Headquarters
System Design Description (SDD) Version 3.0.7 (Draft)	March 2005	WAWF Software Development Library
Database Design Description (DBDD) Version 3.0.7 (Draft)	February 2005	WAWF Software Development Library
Statement of Work (SOW) Wide Area Workflow	October 2004	Defense Information Systems Agency, Defense Electronic Business Program Office
Software Requirements Specification (SRS) Version 3.0.7	March 2005	WAWF Software Development Library
Software Development Plan and Technology Refreshment (SDP) Version 3.0.X	November 2004	WAWF Software Development Library
Software User's Manual (SUM) Version 3.0.7	March 2005	WAWF Software Development Library
Software Center Operations Manual (SCOM) Version 3.0.7	March 2005	WAWF Software Development Library
Programmer's Maintenance Manual (PMM) Version 3.0.7	March 2005	WAWF Software Development Library
Interface Control Document (ICD) Version 3.0.7	March 2005	WAWF Software Development Library
Software Installation Plan (SIP) Version 3.0.7	February 2005	WAWF Software Development Library
Delivery Order Management Plan (DOMP) Version 3.0.X	December 2004	WAWF Software Development Library
Joint Requirements Board (JRB) and Configuration Control Board Meeting Minutes	Multiple	CACI, Inc. – Federal and the Defense Information Systems Agency, Defense Electronic Business Program Office

**2.1 Definitions**

The attached appendix provides clarification regarding terminology found in many of the documents listed in Table 2-1.

- Appendix A Glossary of Terms
- Appendix B Acronyms

**2.2 Points Of Contact**

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### **3 Current System Or Situation**

This section describes the background, objectives, and scope of the current situation and the systems in use; operational policies or constraints; modes of operation, user classes, and other involved personnel, and the support environment.

#### **3.1 Background, Objectives, & Scope**

The WAWF application is not a new system. It has evolved from prototype to production in a relatively short time but retains many characteristics commonly associated with operational prototypes. It has been continuously subjected to major system enhancements as well as corrective maintenance following each of its frequent releases.

#### **3.2 Operational Policies & Constraints**

Within the context of this plan, constraints fall into several categories including: fiscal, technical, compatibility, preferences, policy, and procedures.

##### **3.2.1 Fiscal**

Adequate fiscal resources will be provided to complete this task. These resources will support adequate staffing levels, travel, and software engineering tools appropriate to the development and maintenance of the application. Included in the resource assumptions is the availability of Assistive Technology (AT) applications for benchmarking and validating Section 508 compliance.

##### **3.2.2 Technical**

The technical standards profile for DoD Electronic Business / Electronic Commerce (EB/EC) systems is built upon the Joint Technical Architecture (JTA), but extends the JTA to include those standards emerging from industry that are essential to conducting EB/EC operations.

##### **3.2.3 Compatibility**

There are compatibility constraints on the WAWF software development cycle and related processes. Technology up-grades or software replacements (e.g., browser versions) may or may not adhere to the technical specifications for both compatibility and accessibility in the emerging WAWF environment, therefore, constantly driving the technology refreshment activities to provide possible solutions to the never ending technology enhancement capabilities.

### 3.2.4 Preferences, Policy, & Procedures

Preference, policy, and procedure constraints are usually generated from user-defined requirements, governing regulatory policies, or procedural specifics. Since the WAWF environment consist of multiple agencies there could be conflicts relating to agency “must have,” or “nice to have,” capability. These particular program modifications could result in extended time for releases or programming that satisfies agency requirements but does not satisfy the overall aspects of the WAWF application.

### 3.3 Description Of Current System Or Situation

Traditionally, the DoD acquisition process has been paper-based, labor-intensive, and heavily dependent upon manual and repetitive input from multiple functional communities. This environment resulted in restricted access to the source data located in various contractual, financial, and logistic documents resident in numerous government-automated information systems.

DoD had several tools available to help improve the receipt, management, processing, storage, retrieval, and “filing” of documents required in the acquisition process. These tools included Electronic Document Management (EDM), Electronic Document Workflow (EDW), and Electronic Document Access (EDA) systems, as well as Electronic Data Interchange (EDI) standards. Utilizing these tools, WAWF provides a unique and innovative technical approach for integrating and applying EDM, EDW, EDA, and EDI solutions with Web interactive forms in a production environment. The WAWF technical approach provides built-in benefits, including:

- Elimination of Paper-Based Support Functions – From a management and cost savings standpoint, the utilization of WAWF eliminates the numerous support functions required for a paper-based process. The electronic capture, storage, and retrieval of required documents eliminate the need for mail, file, and copy rooms, as well as their associated personnel.
- Global Accessibility – Multiple users are able to globally access documents, which streamline processing, reduce the need for re-keying of data, improve accuracy, and provide real-time processing and access to document status. Users of the system are able to research discrepancies, history, or status without having to involve individuals from other organizations.
- Increased Document Accuracy – Problems such as unmatched disbursements, duplicate payments, and payment delays can be significantly reduced.
- Secure and Auditable Transactions – Access to appropriate functions and documents are controlled through the user registration process. Public Key Infrastructure (PKI) certificates are used to verify user identification. Digital signatures provide non-repudiation of processed documents.

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### 3.3.1 Defense Finance & Accounting Service (DFAS) Entitlement Systems

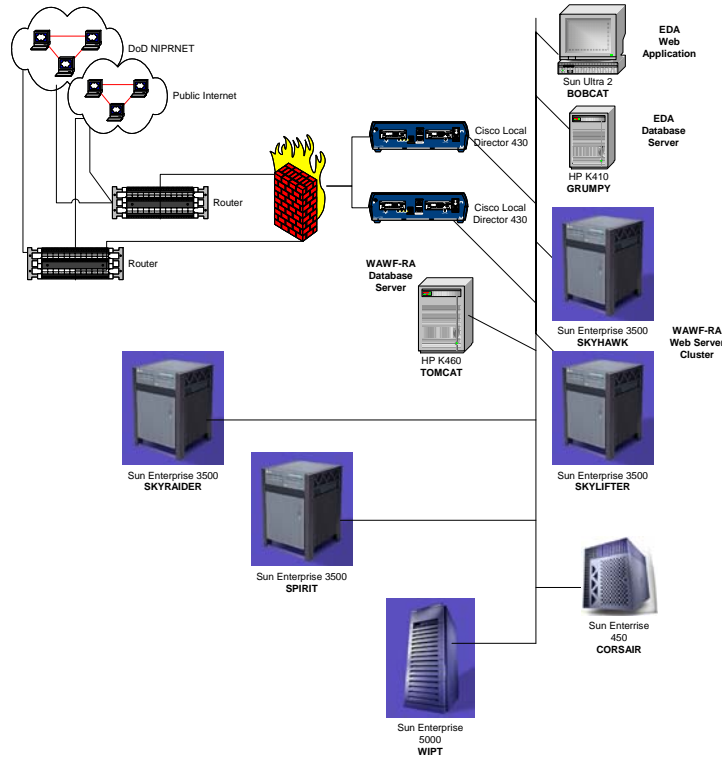
Upon Government acceptance and processing by the appropriate payment office, an Electronic Data Interchange (EDI) transaction is generated to one of the DFAS Entitlement Systems for Vendor payment. The use of EDI transaction provides a standard-based interface between the WAWF application and legacy entitlement systems via the Global Exchange Services (GEX).

Vendor payment information is currently being interfaced into the following entitlement systems:

- MOCAS – (Mechanization of Contract Administration Services) DFAS Accounting system primarily supporting Defense Contract Management Agency (DCMA).
- ONE-PAY – DFAS Accounting system primarily supporting the Navy.
- IAPS – (Integrated Accounts Payable System) DFAS Accounting system primarily supporting Air Force.
- SAMMS – (Standard Automated Materiel Management System) DFAS Accounting system primarily supporting Defense Logistics Agency (DLA).
- CAPS – (Computerized Accounts Payable System) DFAS Accounting system primarily supporting Army, Marine Corps, DFAS.
- BSM – (Business Systems Modernization) DFAS Accounting system primarily supporting DLA.

### 3.3.2 WAWF Production Environment

The hardware hosting the WAWF application is located in a secure facility that permits continuous operation. This condition is applicable to all operational environment modes, including development, training, test, production, and backup. The objective is to ensure the software is available during any operational mode - peacetime or wartime. Except for the development and training modes, the security requirements and related services are tightly enforced. The development and training modes are operated independently of the test, production and backup environments since both require flexibility to administer system functionalities and capabilities. Figure 3-1: WAWF Production Environment provides a graphical depiction of the DISA Continuity of Operations and Test Facility (DCTF) environment supporting the WAWF application.



**Figure 3-1: WAWF Production Environment**

### 3.3.3 WAWF Databases

The WAWF database stores the data used for invoice, inspection, and acceptance evidence from a wide variety of input sources. The databases ensure data integrity and also support the business requirements and rules of the DoD processing community. Database constraints have been added to enforce these business rules.

The databases are dependent on the EDA Interface and CCR/DAASC Interface for contract data and DoDAAC/CAGE data, respectively. In addition, the WAWF database interacts with the WAWF Web Application, Contractor Data File Upload capability, Secure Web Upload capability, and EDI Interface for providing and storing data records.

The archive solution includes a separate archive database that contains all the Processed or Voided documents. The application has been designed and modified to provide the users access to both the active database and the archive database.

Additional information concerning the WAWF database is described within the *WAWF Database Design Description (DBDD)* document.

### **3.3.4 WAWF Web Application Component Overview**

The WAWF Interactive Web Form provides contractors with the capability to submit invoices and receiving reports and allows Government officials the means to accept, reject, hold and view the contractors' submitted documents via the Web. The WAWF Web Application component is dependent on the User's logon criteria, WAWF database, EDA Interface, and e-mail notification. Additional information concerning the WAWF Web Application and its components are described in the most recent *System Design Description (SDD)*.

### **3.3.5 Contractor Data File Upload Component Overview**

The FTP capability of the Contractor Data File Upload component is dependent on the Contractor Data File Upload input files, FTP access to a resident home directory, WAWF database, EDA Interface, e-mail notification, and WAWF Web Application, for receiving, processing, validating, and storing the data contained within the formatted files. It is also responsible for transferring e-mail notifications, and displaying processed data within the Web application. This capability performs batch processing of formatted contractor files (invoice and receiving report data files) transferred via FTP into the WAWF database. The Contractor Data File Upload process will individually process each file, validate the data and upload all form data that pass the validations. Additional information pertaining to the Contractor Data File Upload capability is described within the *WAWF Interface Control Document (ICD)*.

### **3.3.6 EDI Interface Component Overview**

The EDI Interface component of the WAWF system contains extraction and acknowledgement processes. The objective of the WAWF EDI output interface is to provide to the appropriate payment system the electronic data that has been captured within the WAWF application. With this interface, the data necessary for payment processing is electronically transferred to compatible payment systems. The data from WAWF will be transmitted to the appropriate EDI receiver location using standard American National Standards Institute (ANSI) X12 transaction sets. Additional information pertaining to the EDI Interface is described within the *WAWF Interface Control Document (ICD)*.

### **3.3.7 Central Contractor Registry (CCR) & Defense Automatic Addressing System Center (DAASC) & the Military Assistance Program Address Database (MAPAD)**

The WAWF interface for CCR and DAASC/MAPAD consist of database scripts designed to extract information from these three data repositories. The software is run on a daily basis so that the data used by the users is current. Contractor information used to populate Receiving Report and Commercial Invoice documents is provided by CCR. DAASC/MAPAD provides data necessary for the routing of output from the application to payment DoDAACs throughout DoD. Additional information pertaining to the CCR and DAAS is described within the *WAWF Interface Control Document (ICD)*.

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### 3.3.8 Electronic Document Access (EDA)

The EDA interface provides authorized users with Web-based access to DoD procurement / acquisition documents including Contracts and Modifications, personal property and freight Government Bill of Lading (GBL), and Materials Acceptance and Accounts Payable Report (MAAPR) data. WAWF provides the capability to display contract Portable Document Format (PDF) documents when Vendors and government officials verify and review the completed Invoices and Receiving Reports. Additional information pertaining to the EDA is described within the *WAWF Interface Control Document (ICD)*.

### 3.3.9 Global Exchange (GEX)

The objective of the WAWF and the GEX interface is to translate between standard ANSI X12 transaction set files and the UDF file used by the WAWF Web-based system. GEX converts incoming X12 transaction sets into a UDF flat file format and submits the data to the WAWF Web-based system. Extracted UDF flat files from the WAWF Web-based system are translated back into X12 format by GEX and transported to the appropriate payment system. These transaction sets are transmitted to the appropriate EDI receiver location based on the form type and Payment DoDAAC. Additional information pertaining to the GEX/GEX is described within the *WAWF Interface Control Document (ICD)*.

### 3.3.10 Digital Signature

The Valicert Application Interface allows government users of the WAWF Web application to use digital signature technology. Digital signatures are used to officially “sign” and access paperless documents processed through the Web. The information that is collected and maintained to create a digital signature is called a “certificate.” The Valicert interface is responsible for retrieving and validating these certificates. These certificates then provide a secure means of logging on to WAWF through the Web as well as allowing authorized government users a means of officially signing a document in a paperless environment. Additional information pertaining to the Digital Signature is described within the *WAWF Interface Control Document (ICD)*.

### 3.3.11 Unique Identification (UID)

WAWF supports the collection of Unique Identifier (UID) information used to identify each tangible item in Material Inspection and Receiving Report documents. Vendors have to receive government approval, prior to submitting documents with UID data. Approved Vendors are then able to include UIDs and associated mandatory and optional data Fields related to the UID on all Receiving Report and COMBO documents.

After acceptance by the government, UID information for the Receiving Report is extracted and routed through the Global Exchange (GEX) to the government UID Registry. The UID Registry maintains a database of UID information for the purpose of tracking government property. For further information regarding UID please see the government Website for UID, <http://www.acq.osd.mil/uid/>. Additional information pertaining to the UID is described within the *WAWF Interface Control Document (ICD)* and *System Design Description (SDD)*.

### 3.4 Users/Affected Personnel

Due to the contents of projected releases and Technology Refreshments all users and supporting entities within the WAWF environment will be affected.

### 3.5 Users or Involved Personnel

The user community accessing the central WAWF application is made up of authorized Vendors, Government Inspectors and Acceptors, Local Processing Officials, Payment Processing personnel, as well as other DoD personnel that are provided a “view only” capability. Reference Figure 3-2: WAWF Functional Overview.

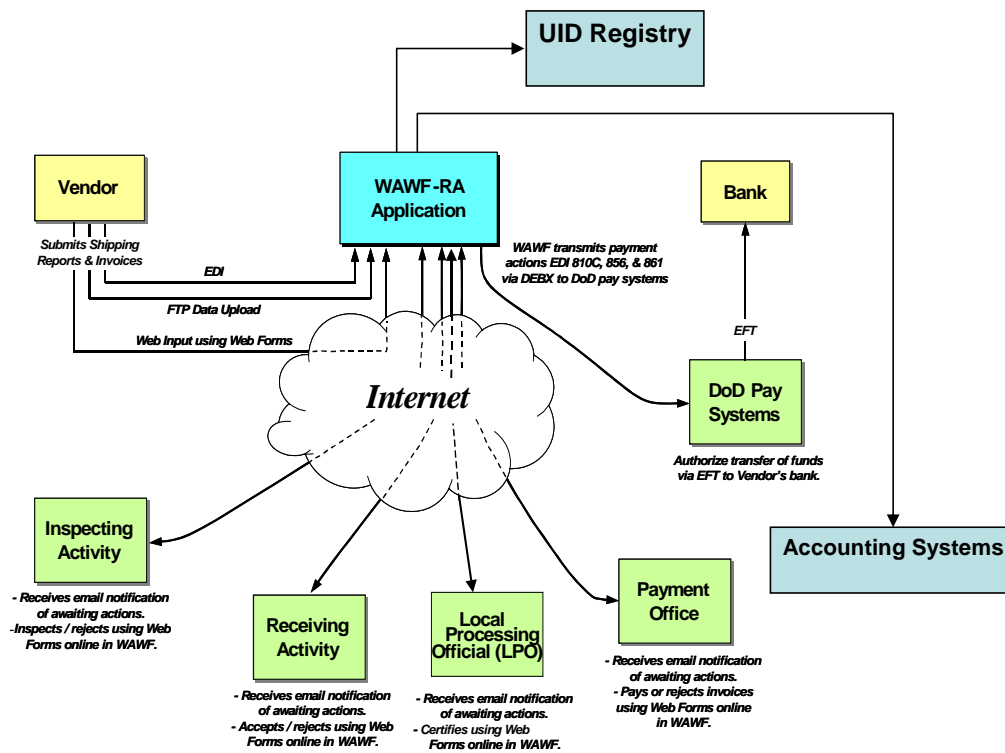


Figure 3-2: WAWF Functional Overview

**3.5.1 Respective Roles**

The use of the system by these individuals is in accordance with a wide range of roles and responsibilities. Table 3-1 User Respective Roles provides an overview of this community.

**Table 3-1: User Respective Roles**

<i><b>User Group</b></i>	<i><b>Responsibility</b></i>
<u>Document Initiators/Vendors</u> (Industry personnel for Invoices and industry or selected government personnel for acceptance documents)	Industry employees responsible for billing the government for goods or services ordered by the government. Industry or selected government personnel responsible for preparing shipping/Receiving Reports.
<u>Inspection Personnel</u>	Employees responsible for inspecting goods/services.
<u>Cost Voucher Reviewer</u>	Responsible for: <ul style="list-style-type: none"> <li>● Open and work a document of a “Submitted” status from the ‘In Process’ folder.</li> <li>● Enter data into adjustment fields and check appropriate checkboxes.</li> </ul>
<u>Cost Voucher Approver</u>	Responsible for: <ul style="list-style-type: none"> <li>● Open ‘In Process’ vouchers and may complete the entire review, approval, rejection and cost adjustment process.</li> <li>● Modify the entries made by the Cost Voucher reviewer.</li> <li>● Sign or reject a document.</li> </ul>
<u>Acceptance Personnel</u>	Employees responsible for accepting goods/services.
<u>Local Processing Office (LPO) Reviewer</u>	The “LPO Reviewer” responsibilities entail all aspects of updating the document except for approving/certifying the document.
<u>Local Processing Office (LPO) Approver</u>	The “LPO Approver” responsibilities entail all responsibilities assigned to the LPO Viewer and approving/certifying or rejecting the document.

<i><b>User Group</b></i>	<i><b>Responsibility</b></i>
<u>Payment Personnel</u> (DFAS personnel)	Payment personnel, who process Invoices, review acceptance documents, determine entitlement, and enter payment information into DFAS legacy contract and Vendor pay systems.
<u>View Only Personnel</u>	Users have a “VIEW” only to documents on which their location code is in the appropriate workflow field <ul style="list-style-type: none"> <li>● Inspector View Only</li> <li>● Cost Voucher View Only</li> <li>● Acceptor View Only</li> <li>● LPO View Only</li> <li>● Pay View Only</li> <li>● Issue By</li> <li>● Admin By</li> </ul>
<u>Audit Personnel</u>	Audit personnel from Service/agency authorized audit organizations, as well as criminal investigation personnel they designate.
<u>Program Office User (PMO)</u>	Responsible for: <ul style="list-style-type: none"> <li>● Approval of document deletion</li> <li>● Creation of new help messages</li> </ul>
<u>Super User</u>	View documents across all location codes for problem resolution
<u>Group Administrators (GAM)</u>	Individuals officially designated within a Service/Agency/or Industry Vendor Organization to activate, modify, or deactivate users within their span of control.

<i><b>User Group</b></i>	<i><b>Responsibility</b></i>
<u>System Administrators (SAM)</u>	Employees who provide operational support to the WAWF system. Responsibilities include: <ul style="list-style-type: none"> <li>● Activation/Inactivation of users within a group (Vendors)</li> <li>● Resetting user passwords and sessions</li> <li>● Requesting document deletion authority/deleting documents</li> <li>● Generation of Help messages on system loads/database changes</li> <li>● Able to view documents and INV_RR data for troubleshooting</li> </ul>
<u>Help Desk Administrator (HAM)</u>	Responsible for: <ul style="list-style-type: none"> <li>● Activation/Inactivation of users within a group (Vendors)</li> <li>● Resetting user passwords and sessions</li> <li>● Able to view documents and INV_RR data for troubleshooting</li> </ul>

**3.5.1.1 User Restrictions**

User roles will be restricted as follows:

- Commercial entities will only be permitted to register for Vendor, Vendor View Only and/or Group Administrator.
- Government representatives will only be permitted to register for Issue By, Admin By, Inspector, Cost Voucher Reviewer or Approver, Acceptor, LPO, Pay Official, Group Administrator, and associated View Only roles.
- The Pay Official user can only be assigned to a DFAS representative.
- Users assigned as a Help Administrator (HAM), System Administrator (SAM), Auditor, Project Management Office (PMO), or as a Super-User may only have ONE role within the application and may not be combined with other user’s roles.

### **3.5.1.2 Registration**

All users must be registered in WAWF. Upon completion of the self-registration process, the user receives a User ID and password. This User ID and password are used to access WAWF via the Web. The initial password is for one-time use only and the user is prompted to change immediately upon first logon to WAWF. After that, the password expires every 90 days and must be updated prior to usage of WAWF. Failure to update a password prevents the usage of application.

The registration process supports and enforces the WAWF security requirements. Application security is based on the concept that individuals should only have access to data (documents) for which they have a responsibility. Contractor personnel are able to view only those previously submitted documents for their company—based on Contractor and Government Entity (CAGE) Code and any extensions used. Government Inspection and Acceptance Officials are only able to access Receiving Reports that their Activity—based on DoDAAC—is responsible to inspect and/or accept. The Payment Official access is limited to Invoices and Receiving Reports submitted on contracts for which they have been identified as the Paying DoDAAC.

### **3.5.2 Human Factors**

Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d) requires Federal agencies acquiring Electronic and Information Technology (EIT) to ensure that Federal employees with disabilities have access to and use of information and data that is comparable to the access and use by Federal employees who are not individuals with disabilities.

### **3.5.3 Who Are WAWF Customers**

Specific DoD components and other government offices using, or expected to use, WAWF include:

- Air Force (USAF)
- Army (USA)
- Defense Finance and Accounting Service (DFAS)
- Defense Information Systems Agency (DISA)
- Defense Contract Audit Agency (DCAA)
- Defense Contract Management Agency (DCMA)
- Defense Logistics Agency (DLA)
- Marine Corps (USMC)
- Navy (USN)
- DoD Vendors

- Other Defense Agencies (ODAs)

#### 3.5.4 Support Agencies

The WAWF environment is supported by various government agencies and supporting contractors. The contractors include CACI, SAIC, JITC, Concurrent Technologies Corporation (CTC), and others providing direct support in the form of staff augmentation and similar roles at supporting infrastructure locations.

- **CACI:** Is responsible for activities that include system engineering services, software development, system architecture engineer support, system and database maintenance, system and database documentation, and enhancement encapsulation.
- **SAIC:** Is the designated integrator of WAWF and is responsible for the configuration and maintenance of all WAWF servers at all government test locations. SAIC also assists with installation of production builds.
- **Joint Interoperability Test Command (JITC):** Load and stress testing is performed remotely by the Joint Interoperability Test Command (JITC) from Phoenix, Arizona.
- **CTC** maintains and operates the WAWF Web-based training course over the Internet at <http://www.wawfraining.com>. There is no application software at this facility.
- **Defense Enterprise Computing Center (DECC), Ogden:** DECC Ogden is one of the largest state-of-the-art computers centers within the Defense Information Systems Agency and Department of Defense. Its mission is to provide DoD and other customers with superior information products and services, at competitive prices, through innovative technology and organizational excellence. This DECC serves as the line of business manager, customer service center, and network entry point for processing, distributing, and troubleshooting Electronic Commerce/Electronic Data Interchange transactions for the entire federal government. DECC has been tasked to install and maintain new production releases.
- **Defense Enterprise Computing Center (DECC), Columbus:** DECC-Columbus is also a large state-of-the-art computer center within the Defense Information Systems Agency support infrastructure. The mission of DECC Columbus is similar to most DECCs plus it provides a mirrored Continuity of Operations Plan (COOP) capability for Electronic Commerce/Electronic Data Interchange transactions for the entire federal government, to include the WAWF and EDA systems.
- **DISA Continuity of Operations and Testing Facility (DCTF) Slidell:** The DCTF provides continuity of operations support to DISA processing centers for mission essential applications, supports development of a state-of-the-art Global Combat Support System (GCSS) prototype model for the processing centers of the future and performs production tests and evaluations on new and revised GCSS applications, prior to their being fielded at operational sites.

- 
- **Defense Information Systems Agency (DISA) eBusiness Standards Branch:** This organization maintains the Federal EDI Implementation Convention Repository, the DISA repository for DoD legacy and DoD system unique implementation conventions, and the online presence of the Secretariat for Federal eBusiness.
  - **Joint Information and Engineering Organization (JIEO):** JIEO's mission is to ensure interoperability of the Defense Information Infrastructure (DII) and to provide engineering support to DISA program and single system managers among others.

### 3.6 Support Environment

The CACI project team is located at Jacksonville, FL and Chantilly, VA. Government project leaders are located in northern Virginia. WAWF users are located anywhere in the world. The primary production site for server-side application software is at Ogden, Utah. A back-up site to Ogden, Utah is located in Columbus, Ohio. Load and stress testing is performed remotely by the Joint Interoperability Test Command (JITC) from FT Huachuca, Arizona. Representatives from the user community perform the Operational Acceptance Testing (OAT) at either a remote or centralized location. Testing is performed against WAWF test servers at the Defense Information Systems Agency (DISA) Continuity Test Facility (DCTF) in Slidell, LA.

#### 3.6.1 Development Support

The WAWF application was developed and implemented with the support of CACI and SAIC contractors. CACI is currently responsible for all software development and implementation to include the methodologies utilized to transmit data - Web, SFTP, and EDI. SAIC on the other hand is responsible for the configuration of the software at the test facility, for validating and improving the software installation plan and operations manuals, and responsible for coordinating all releases with the DECCs. Figure 3-3: WAWF Development Environment portrays the development environments located and maintained at the CACI facilities in Jacksonville, Florida and Chantilly, Virginia.

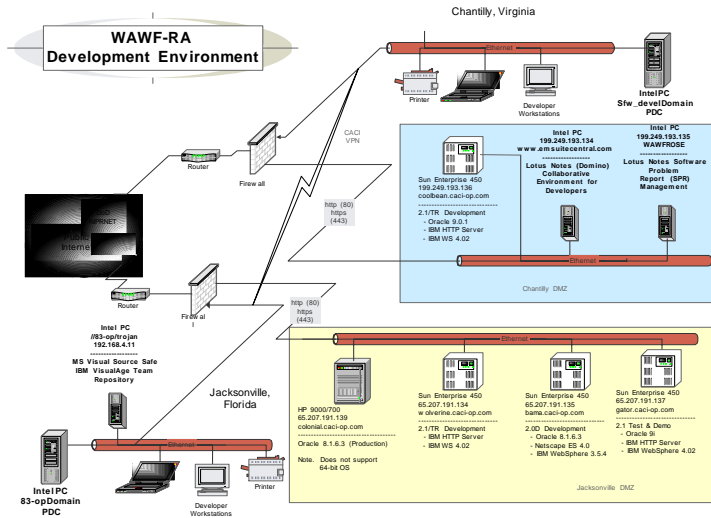


Figure 3-3: WAWF Development Environment

### 3.6.2 Test, Continuity Of Operations, & Training

All System Integration and Government Testing, Operational Acceptance Testing and Training are hosted at the DISA Continuity of Operations and Test Facility (DCTF) in Slidell, LA.

#### 3.6.2.1 Testing

Both maintenance and development processes involve testing activities. The maintenance processes culminate with regression testing before release to verify that modifications to the code do not materially affect other system components or the related system documentation as a result of the improvement or adaptation. The objective is to modify the existing WAWF application while preserving its integrity. The development processes involve interrelated activities and tasks for requirements analysis, design, coding, integration, testing, and installation and acceptance related to future releases of the WAWF application. After a patch or software release, the Joint Interoperability Test Command (JITC) performs testing remotely. Representatives from the user community perform the Operational Acceptance Test (OAT). Testing is performed against WAWF test servers located at the Defense Information Systems Agency (DISA) Continuity Test Facility (DCTF) in Slidell, LA.

#### 3.6.2.2 Contingencies & Alternate States & Modes Of Operation

Information pertaining to the contingencies for each component of the WAWF system is described within the *Software Center Operations Manual (SCOM)*. This manual explains the differences in software operation at times of emergency and in various states and modes of

operation pertaining to the WAWF system. These WAWF system components include the following: WAWF database, EDA Interface, CCR/DAASC Interface, WAWF Web Application, Contractor Data File Upload, EDI Interface, and Fax/Scan Interface.

### **3.6.2.3 Web-Accessible Training**

A Web-accessible training environment is maintained at the Defense Enterprise Computing Center (DECC), Columbus, OH. The WAWF training instance is self-contained on a Sun E3501 server. This server supports all three tiers- Web, application, and the database.  
(<https://wawf.eb.mil>)

### **3.6.2.4 WAWF Web-Based Training Course**

CTC maintains and operates the WAWF Web-based training course at <http://www.wawftraining.com>.

### **3.6.3 Modification Requests**

There are several methods for causing a change in the current architecture. The first approach is to bring a problem to the JRB through service/agency representatives. The second method is an aggregate level of Trouble Tickets addressed through the Ogden Help Desk. All recommended modifications are brought to the Configuration Control Board (CCB) for research and resolution. Any changes to the system are reviewed to insure they match the current DoD Business Rules as well as prevent security breaches. The problems are analyzed-to insure that the change is cohesive with the original design of the WAWF application.

## 4 Justification For & Nature Of Changes

The following subsections describe the enhanced system in terms of justification for changes, the nature of the desired changes, priorities among changes, changes considered but not included, and assumptions and constraints associated with the WAWF application.

### 4.1 Justification For Change

The WAWF application is constantly being modified to satisfy user requirements and incorporate up-to-date technology to ensure application readability and performance capabilities.

### 4.2 Description Of Desired Changes

The activities in this plan are based on an assumption that the focus during this fiscal year will be to maintain the existing system with fixes and minor enhancements. Software sustainment activities will focus on those requirements that will fix the existing problems or processes and support the increase of number of users to the application. The following are identified as additional user functionalities that will be provided in Fiscal Year 2005.

#### 4.2.1 Version 3.0.8

The principal focus of this release is to provide the following functionalities:

- **ECP0009 Pre-Population:** WAWF does not permit vendors and government users to create Invoices and Receiving Reports by leveraging Contract Line Item Number (CLIN) level data already available on the award. Current manual process requires the receiver and vendor to re-type all CLIN level data resulting in significant inefficiencies and data entry errors. The intent of this capability is to enable one time entry of data, by the functional user responsible for providing the information. Pre- population of CLIN data reduces user time and effort in completing either invoices or receipts. Moreover, this ensures all data on Invoices and Receipts will match the initial contract award and will help eliminate data entry errors.

At the point within the system where the initial query is made to the Electronic Document Access (EDA) system for index information associated with the contract, if data is available for the CLIN, WAWF will:

- Provide a list from EDA of the available CLINs on the contract to the document initiator using an EDA database view of CLIN numbers.
- WAWF will then populate the Line Item Tab in DATACAPTURE with the data from the EDA database view.

- 
- **ECP0043 DSS Phase II, DCAA Form 1:** The requirements will update Wide Area Workflow (WAWF) Cost Voucher program logic with the inclusion of the DCAA Form 1 process for disallowing/suspending costs. The modifications will allow the Approver or Reviewer (for Interim CVs) and the Service Approver (for Final CVs) the capability to perform the regulatory authority for disallowing or suspending costs.
  - **ECP0081 Add Drop-Down For Event Code On PBP:** The document initiator will be able to select either “S” or “C” from a drop-down list when creating the Event Type Code for the Performance Based Payment (PBP). The current web edit to restrict the data entered to either an “S” or “C” will be removed from the application.
  - **ECP0082 Pop-Up Message Reminding User To Submit:** A pop-up will provide a means to remind a user to submit the document if they forget to submit after they have signed. The pop-up will become active as soon as the signature is applied to the document reminding the user to submit.
  - **ECP0084 Pre-Populate Amount Approved On Financing Requests:** For the Performance Based Payment, Commercial Item Financing, and Progress Payment documents, the government-approved amount on the header tab will be pre-populated with the requested amount the first time the Contracting Officer opens the document.
  - **ECP0105 Add COMBO To Type Document Drop-Down Menu In The Search Criteria Window(s):** When a user accesses the drop-down box on the Search window to enter a specific type of document to search for – one of the options will be “COMBO.” Selection of this option will return either an (Invoice and/or Receiving Report) of the “COMBO document” based upon the documents’ availability within the user’s folder.
  - **ECP0197 National Stock Number Field Modification:** The users have requested the WAWF edit to ensure the NSN field entry is thirteen (13) or fifteen (15) positions is removed and to expand the field position size from seventeen (17) to twenty-five (25).
  - **ECP0207 USMC Miscellaneous Payments:** Provide the capability to process a Miscellaneous Payment (Invoice, Acceptance, and Financial Information) to systemically update the Computerized Accounts Payable System – Windows (CAPS-W) and Standard Accounting Budget and Reporting System (SABRS) with the required financial and miscellaneous payment information. Reference Figure 4-3 USMC Miscellaneous Payment Flow Diagram.

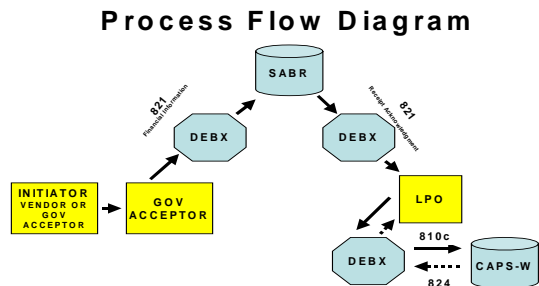


Figure 4-3: USMC Miscellaneous Payment Flow Diagram

- **ECP0257 Limiting Access To EDA For CAGE Extension:** Provide the ability to determine whether a particular extension under a parent CAGE will have access to any EDA documents.
- **ECP 281 User Work – LPO Administrative Role:** The Defense Information Systems Administration (DISA) Project Office has requested the Wide Area Workflow (WAWF) Local Processing Office (LPO) functionality be subdivided into two distinct functionalities: LPO Reviewer and LPO Approver. Currently, DISA and Navy commands are unable to properly utilize the WAWF certification process since this particular requirement within the command is separated into administrative type and Certifying Officer duties. Personnel responsible for the administrative type duties cannot access nor administer the LPO process within WAWF because this particular function requires a Certifying Officer to administer, therefore, levying the workload on the Certifying Officer.

4.2.2 Version 3.0.9

The principal focus of this release is to provide the following functionalities:

- **ECP0132 Missing GAM Functionality:**
  - User and a GAM will have the ability to attach documents (one or more) to a user’s profile as needed. There will not be a delete function for these documents.
  - GAMs will have a “view only” ability to view accounts that are more than two levels below their groups in the hierarchy.
  - Change the title “Job Description” field under the user profile to “Organization” under the User Information Page – this will allow for several organizations that share a DoDAAC to be able to track the individual if needed.
  - Moving groups – There are cases where a whole group of active users may need to migrate within the GAM/or to other GAM structure(s). Add the functionality to

move the whole group within the DoDAAC and/or associated to a location code. The activation status of the user will not change.

- The GAM will be able to move any inactive accounts to an “archive folder.”
  - On the “Role Information for Select Users” window – the GAM will be able to review the comments and see the time/date for activation/deactivation of any given user within his/her structure.
  - E-mail addresses: GAMs will have the ability to update a user’s entire profile on the User Information window.
  - Registration with a Pay Office DoDAAC should be limited to Pay Office Roles (Pay Official and Pay Office View Only) for example: a user should not be able to register as a “Vendor,” “Inspector,” “LPO,” or “Admin” role under a Pay Office DoDAAC.
- **ECP0171 myInvoice Acknowledgement:** Currently in the Wide Area Workflow (WAWF) system logic, once document transactions are processed through the Global Exchange Services (GEX), the status of the associated document is reflected as “Processed,” regardless of its true status as it relates to Vendor payments. Incorporating these requirements will provide the functionality to update the status of the associated document(s) based on the status of the document(s) within the myInvoice system, therefore, providing the Vendors and Government Officials with a more realistic and reliable status indicator throughout the payment cycle.
  - **ECP0257 EDA Access to Line Item Pricing Information for Other than Prime Contractor:** Currently within the WAWF application a Vendor may establish an extension to their CAGE. This sub-grouping of users will have all the privileges of the parent organization, including visibility of any contracts within the EDA system where that CAGE is the identified vendor. However, this leads to potential conflicts when Vendors are using these extensions to register a third party (such as a packager or documentation processor) within these groups. It might not be a sound business practice to permit these non-company personnel access to the contract views.

Accordingly the government has requested the ability to select whether a particular extension under a parent CAGE will have access to any EDA documents. In this manner the parent organization may maintain its business integrity and still operate within the workflow model provided by WAWF.

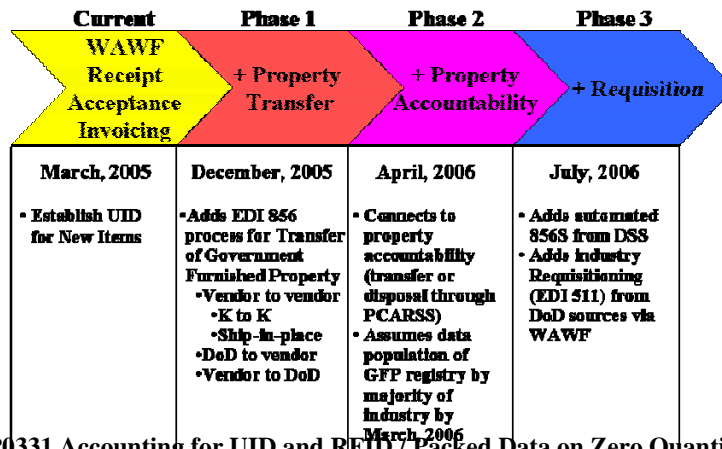
- **ECP0276 Block Signing:** The Defense Contract Management Agency (DCMA) has requested the capability to sign Source Inspected / Source Accepted (S/S) Receiving Reports (RRs), and Source Inspected / Destination Accepted (S/D) RRs, and Source Inspected / Other Accepted (S/O) RRs in a manner that would expedite the process and eliminate or reduce the current key stroke requirements that a user must enter to process the document. This recommended enhancement would provide the QAR the capability to process a large quantity of documents within a reasonable amount of time. The appearance of the documents should be such that there would be no distinction between a document that was signed via this expeditious process and one signed using the current WAWF functionality.

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- **ECP0305 UID (Lot / Batch):** The Office of the Secretary of Defense (OSD) policy has been changed to allow contractors to create Unique Item Identifiers (UIIs) by serializing within Lot / Batch using the Construct 2 option. Lot or batch number is an identifying number assigned by an enterprise to a designated group of items, usually referred to as either a lot or a batch, all of which were manufactured under identical conditions.

DCMA has requested WAWF be modified to add the data capture capability for this added UII Construct 2 option. Additionally, since Lot / Batch is now a UII registry data element for all UIDs, WAWF should be updated to include the capability to capture such data as an optional field for all UIIs or equivalents where Lot / Batch is not mandatory.

- **ECP0320 PIIN / SPIIN Edits:** DCMA has requested:
  - The edits governing the format of the Contract Number and Delivery Order Number (PIIN / SPIN) be modified to supplement the existing edits.
  - To expand the search criteria to locate documents by the Contract Number or Delivery Order Number.
  - To apply the current MOCAS Payment System Specific edit for the Shipment Number to all documents with a DCMA Admin DoDAAC regardless of the Payment Office.
  - To modify the Contract Line Item Number (CLIN) field to capitalize alpha characters.
- **ECP0328 Government Furnished Property:** This Engineering Change Proposal is to provide the capability to electronically capture and submit information in support of the shipment and the receipt of Government Furnished Property (GFP) by the Department of Defense (DoD) and DoD vendor activities. The new functionality would provide all requiring activities, property managers, financial managers and contractors the capability to access up-to-date information, on a need-to-know basis.

Development of the GFP capability will be consistent with an evolutionary approach, with increasing functionality and integration incorporated at each phase. Phase 1 will concentrate on the initial on-line GFP capability and work toward the following accomplishments:



- ECP0331 Accounting for UID and RFID / Packed Data on Zero Quantity Shipments:** DCMA has requested the capability for WAWF to accept a zero (0) quantity for MOCAS shipments in the case where there is a Lot (LO) unit of measure used. In the instance where a vendor enters a zero (0) in the Qty Shipped field as well as selects a unit of measure of 'lot' (LO), a button or field with an associated quantity will be presented for the vendor to select. This requirement is only for Receiving Reports and COMBOs to MOCAS only, since the zero lot invoice process only applies to MOCAS pay DoDAACs
- ECP0334 Allow Vendor to Create Commercial Invoice from an Archived Receiving Report:** It has been requested to allow Vendors to create commercial Invoices from an archived Receiving Report that is not related to another Invoice in the WAWF system.

#### 4.2.3 Technology Enhancement

The principal focus of this initiative is to provide the following capabilities:

- Support growth to accommodate the nearly 300,000 CCR/BPN registered trading partners.
- Determine capacity requirement for the database server, application server and Web server.
- Determine CPU and Memory requirements.
- Reevaluate sizing regarding on-line usage, geographic distribution, transactions, Web-Browser transactions, transaction frequency, and batch usage.

### 4.3 Priorities Among The Changes

Even though there are approved ECPs to be incorporated, the task of identifying system dependencies which may have the potential to create a rippling effect if changed has been determined to be the highest priority. The task will focus on two dependent development activities. The first will focus on improving navigation to support both usability and accessibility while the second is principally behind the scenes changes to extend the application capabilities while preserving some modicum of backward compatibility.

### 4.4 Changes Considered But Not Included

There were several recommendations made by the JRB and the user community, however, because of the large scale of changes within the next three releases, these recommendations were not acted upon, i.e., Department of the Navy Interfaces. Many of these recommendations will be reviewed and discussed with the user community to determine appropriate actions for future releases.

In addition, there are infrastructure policy requirements that need to be considered and evaluated for future implementation:

- Department of Defense Discovery Metadata Description (DDMS) concept. The policy associated with this effort requires that NLT a Fiscal Year (FY) 2006 program review, the program manager for DoD applications will develop, modify, or acquire a requirement or capability description to create DDMS-compliant discovery metadata for their data assets, and identify a date or release for implementations.
- Requirements around the implementation of Unique Identifier (UID), Electronic Product Codes (EPCs) and Radio Frequency Identification (RFID). WAWF has already modified to capture the UID and RFID data elements.
- Demilitarized Zone (DMZ) means placing a buffer area between two enemies. In networking it is a part of the network that is neither part of the internal network nor directly part of the Internet. Basically a network sitting between two networks. A part of a network that is protected by a firewall, but may be accessed by external Internet clients.

### 4.5 Assumptions & Constraints

Assumptions may also act as a constraint on the selection of appropriate software or certain processing techniques to include the following:

- Upgrades within the target host environment will consist principally of periodic upgrades within the product families currently employed. This includes operating systems (OS), database management systems (DBMS), and web server environments and security environments.
- The user community accessing the central WAWF system is made up of authorized Vendors, Government Inspectors and Acceptors, Local Processing Officials, payment

processing personnel, as well as other DoD personnel provided a “view only” capability. This user community will employ commercially available web browsers.

- The requirements for Section 508 compliance apply only to application enhancements and not to a blanket retrofit of the production application.

Assumptions with potential schedule impacts include:

- Application software patches will occur as needed for critical fixes.
- Data exchanged via operational interfaces will not be altered without notification.
- Requirements gathering and design reviews which represent predecessor dependencies to other tasks will occur within a specified time period.

## **5 Concepts for the Enhanced System**

The following subsections describe the concepts of the enhanced system with respect to its background, objectives, and scope; describe applicable operational policies and constraints; describe the enhanced system; describe user classes and other involved personnel; and describe the support environment.

### **5.1 Background, Objectives, & Scope**

The WAWF application software consists of several components: WAWF database, WAWF Web Application, Contractor Data File Upload, and EDI Interface. The WAWF database includes the EDA and CCR/DAASC Interface. The Contractor Data File Upload consists of the File Transfer Protocol (FTP) capability.

#### **5.1.1 System Design**

The WAWF application will continue to be designed using open source architecture. The application will be designed under a CMM Level 3 environment. The developers will be using programming specifications, and EDI specifications and other design documents. There are User Defined File (UDF), EDI, and FTP guides that will continue to be defined by architects and ANSI implementation convention experts.

#### **5.1.2 Repository**

There are two main repositories used to manage the WAWF project and system. The first is Microsoft Visual Source Safe. All CACI internal developer documents, working documents for future release and system modules are accessed from the Jacksonville, Florida system.

The second system CACI uses is the Defense Electronic Business Program Office's standard configuration management tool Merant Dimensions repository to maintain configuration-related data associated with WAWF life cycle processes. The JRB controls release of software items from this library into operational (field) deployment to the primary and secondary DECC.

### **5.2 Operational Policies & Constraints**

The most significant constraint regarding the current system deals with the growth in processing demands. In an effort to ensure continuous processing capability the WAWF application and processing attributes are being reevaluated to identify possible bottlenecks and weaknesses that may affect the addition of future enhancements or users.

#### **5.2.1 Document Input Processing**

Over a twelve-month period (December 2003 through November 2004), the number of documents processed has increased significantly (39%) and due to the implementation of other agencies and functionality enhancements is expected to continue throughout this reporting period.

### **5.2.2 New Registered Users**

Growing at a similar rate is the number of registered users. As the Department of the Army and others are added, we expect to add a minimum of 24,000 new users over the next calendar year and possibly as many as 50,000. Most of this new growth potential is anticipated in the Vendor community given the increased emphasis on the DFARS rule-change driving electronic invoicing.

### **5.3 Description Of The Enhanced System**

The WAWF enhanced application will provide functionality essentials to user specifics. The requirements annotated within the requested changes revolve around processing functions unique to agency's operational environment responsibilities, interface methodology to update and receive information to record and maintain accurate and reliable documentation, and modifications to adhere to processing malfunctions and/or functionality clarification.

### **5.4 Support Concept**

The CACI team will provide transition help during the implementation of new releases. This will be provided by hands-on support at the Operational Acceptance Test (OAT) site and, if required, training for the DECC Ogden Help Desk personnel. Once operational, DECC Ogden will provide help desk support to Vendors and/or Government personnel. In those instances where DECC Ogden help desk is unable to provide an answer to resolve the issue, they will contact CACI for assistance.

#### **5.4.1 Problem Reports**

The customer determines whether the reported problem is a defect (SPR) or an enhancement request (ECP). SPR fixes are normally delivered as patches which are delivered as a regular part of planned maintenance, while ECP enhancements are usually bundled as a major release.

#### **5.4.2 Configuration Management**

CACI will initiate configuration control of items in the test and development libraries database by installing the correct versions of all development tools as well as the baseline and current target production environments. CACI will establish and maintain configuration control on all the deliverables, work products, and data items. These deliverables, work products and data items are stored then process through the Software Development Lifecycle by utilizing Visual Source Safe. CACI also utilizes Lotus Notes as its tracking system for SPRs / ECPs derived during government testing and requirements definition respectively. Configuration control means the controlled movement of software items from one library to the next. On developmental software items - when a CACI developer completes a software item (documentation, design, code) as evidenced by a successful peer review or inspection, he/she will submit the item to the CM manager to be placed into the Development and Test Library in accordance with CACI's internal SPR process document and the WAWF Styles Document.

### **5.4.3 WAWF Security**

CACI will support the PMO in accomplishing a security accreditation review for the WAWF application. CACI will review and provide recommended updates to the existing WAWF System Security Accreditation Agreement prepared by SAIC. CACI will provide technical staff for travel to Ogden and Columbus to support a planned security accreditation review. CACI will assist in the preparation of security relevant scenarios for the WAWF application.

The mandatory deliverables identified in the SOW for this task include:

- Updated System Security Accreditation Agreement (SSAA) Updates
- Updated Security Test Scripts

### **5.4.4 Documentation Requirement To Support Releases**

As CACI implements the enhancements and fixes that modify the production software baseline, life cycle documentation will be developed/revised based primarily to reflect the as-built condition. The documents that are updated to reflect system changes are:

- Updated Software Design Description (SDD)
- Updated Database Design Document (DBDD)
- Updated Software User's Manual (SUM)
- Updated Software Development Plan (SDP)
- Updated Software Requirements Document (SRS)
- Updated Software Version Description (SVD), "What's New"
- Updated Programmers Maintenance Manual (PMM)

### **5.4.5 Status Report**

Status reporting will occur at various levels to ensure that all technical and management aspects of the project are being performed on schedule and according to the technical and management plans. This report describes the project work accomplished and any problems encountered in any of five categories: Customer Relations, Financial Status, Productivity, Schedule, and Quality. This report allows for periodic review of the project activities, including requirements management, project planning, project tracking, and integration.

**5.4.6 Risk Management Plan**

Risk management is a set of actions for risk identification, analysis, and mitigation. The risk management process ensures that both government and contractor management will have timely warning and identifiable plans for risk mitigation.

Risk analysis will be performed to assess the impact of the risk on the program in terms of probability of failure, and estimated consequences of failure on schedule, and cost. As part of CACI's or DISA's risk management, the bi-monthly In-Progress Reviews (IPRs) will provide project impact information subjectively within three levels of classification of high, medium, and low.

## 6 Operational Scenarios

In order to develop coherent scenarios about possible future states for the WAWF application specifically, and the acquisition domain generically, the forces driving change have been subdivided into two main dimensions, standards and policies, and adoption. These dimensions of change form the scenario framework with the current operating environment of today as the starting point. While many WAWF future decisions can be arrived at independently, some are characterized by one or more forms of interdependence. For example, a decision as to how the user community can be apprised of system changes can be arrived at independently. A decision to upgrade the Database Management System (DBMS) product cannot, because EDA and WAWF have an element of interdependence given they share a common database host. This latter situation requires that certain decisions be made collaboratively.

### 6.1 Data Flow

As depicted in the diagram below, the future state of WAWF’s operational environment will require collaborate decisions among many different entities. Agency’s standards and policies and adoption methodologies have increased the interdependence characteristics of the WAWF application.

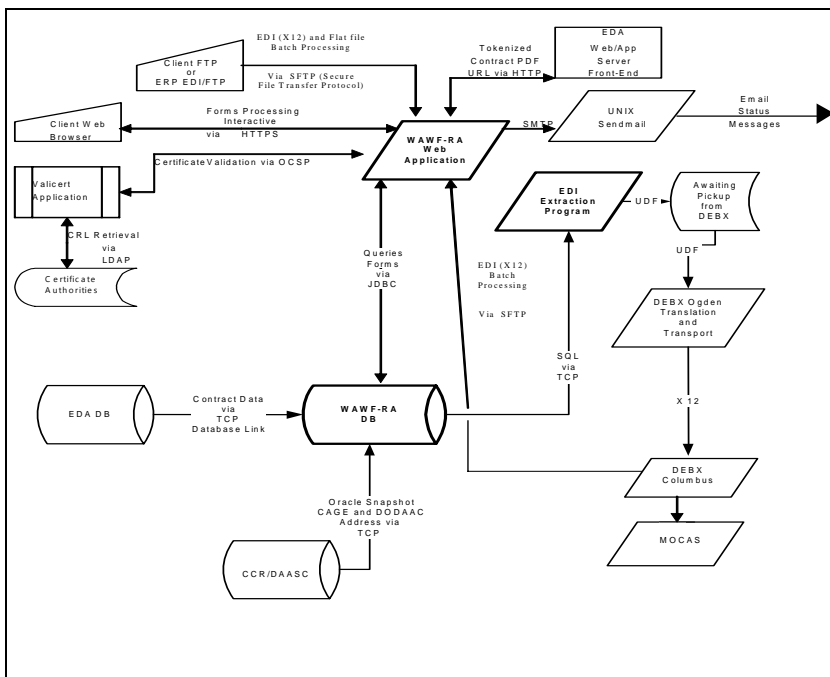


Figure 6-1: WAWF Data Flow

The upper left-hand corner contains the data input components for the application. The client Web browser provides interactive documents processing connectivity via a Secure Socket Layer (SSL) connection with the Web server. All traffic is passed to the application server and converted to Structured Query Language (SQL) statements by Java servlets. Then the data and documents are stored for later retrieval in the database via a Java Database Connectivity (JDBC) link. WAWF provides feedback messages to the user by sending e-mail to the appropriate mail group via Simple Mail Transfer Protocol (SMTP) calls to a UNIX send mail process. An application user has no direct access to the database. This is reserved for system and database administrators only.

Additional information that is required by WAWF users for performance of their jobs is provided by the links with the EDA database. This reduces the duplication of effort and information storage by each application while providing a single definitive source for this shared data. To further reduce duplication, EDA contract PDF files can be requested from the EDA Web application via the WAWF system. The EDA system returns a tokenized Uniform Resource Locator (URL) of all contracts and modification URLs that match the queries sent to the EDA front-end via the WAWF front-end. Without the token, the document servers for EDA will not grant access to the documents.

When the documents have completed processing in the WAWF application, a flag is set to signify that they are ready to be sent to the payment system. Periodically a UNIX CRON process starts the EDI extraction program. This program queries the database for records that have their extraction flags set, and the data is pulled, transformed, and stored in a UDF file for pickup by the GEX system. The UDF are converted by the GEX from a flat fixed position file to EDI X12 format. These files are then transported by GEX via File Transport Protocol (FTP) over a VPN network.

## 7 Summary of Impacts

Implementation of the future WAWF releases may have wide ranging impacts on both WAWF capability and its customers. The subsections below identify potential operational impacts, organizational impacts, and impacts during development that should be considered.

### 7.1 Operational Impacts

Until the WAWF Technology Enhancement evaluation initiative regarding the application updates and scheduled releases are completed, the associated operational impacts are not known. However, following is lists of operational impacts/concerns that have surfaced during pervious discussions regarding WAWF operational environments:

- Interfaces with primary or alternate computer operating centers.
- Changes in procedures.
- Use of new data sources.
- Changes in quantity, type, and timing of data to be input into the system.
- Changes in data retention requirements.
- New modes of operation based on emergency, disaster, or accident conditions.
- New methods for providing input data if the required data are not readily available.
- Changes in operational budget.
- Changes in operational risks.
- Estimating critical computer resources for memory, storage, etc.

Additional operational impacts may include the following items:

- Data architecture modeling.
- Disaster or catastrophic recovery.
- Advances in technology.
- Changes to operational procedures.

## 7.2 Organizational Impacts

The depth and breadth of the enhanced system organizational impact is unknown at this time. Information with respect to the following has not been provided for this reason and includes such items as maintaining work around processes until identified problems are corrected, system interfaces are functioning as intended, data is entered and captured in accordance with users specifications, etc.

With this in mind, a number of possible organizational impacts have been identified, as described below:

- An assessment of how the system will satisfy all aspects relating to contractual business practices and regulatory requirements.
- An assessment of how the system components will meet the requirements of all DoD users/agencies.
- The commitment of resources (e.g., funding, time, staff).
- The development of education and increased training for functional components associated with the WAWF application.
- The need for additional personnel for the maintenance of the help desk facility.

## 7.3 Impacts During Development

The full extent of impacts during the development phase of Version 3.0.7 and Technology Enhancement will not be known until completion of the systems analysis and design phase, and, as such, this information has not been provided; however, impacts considered thus far include:

- Articulation of business rules and other controls needed for operational implementation.
- Training and documentation updates.
- Involvement in studies, meetings, and discussions prior to modification design and programming.
- User support and involvement in reviews and demonstrations, evaluation of revised operating capabilities, development or modification of databases, and required training.
- Identified problems during system testing of the enhanced system and or releases.
- Impact of current interfaces as they change as well as new interface design, testing and scheduling.

## **8 Analysis Of The Enhanced System**

Various improvements, disadvantages and limitations, and alternatives and trade-offs considered are covered in this section.

### **8.1 Summary Of Improvements**

The enhanced system will provide a completely new set of capabilities as described in Section 4. The full extent of the capabilities will not be known until the completion of the implementation and post-analysis phase. It is anticipated, however, that the enhanced architecture and scheduled releases will offer numerous benefits (not inclusive):

- The harvesting, locating and subsequent preservation of fugitive documents that would otherwise be lost.
- A wider variety of available contractual information.
- Consolidated content management lifecycle administration and streamlined internal workflow.
- Reduced cost regarding the overall aspects of the contractual functional entity.
- Timely and accurate Vendor Payments.
- New tools to support processing and evaluation of information.
- Means for documentation preservation and reliable access.
- Means for the creation of descriptions and metadata. (Future requirements)
- Faster access and retrieval of contractual information.
- The ability to service additional end-users.
- Increased responsiveness to end-users.
- Remote access capabilities.
- Enhanced capabilities for searching for information.

### **8.2 Disadvantages & Limitations**

Disadvantages and limitations related to the enhanced architecture and scheduled releases include (not inclusive):

- Increased development costs.
- Increase of agency unique business processes.
- Staff anxiety brought about increased releases within a specified time period.

- Lack of details or agency consensus regarding redefined system/user requirements.
- Availability of external systems for required interfaces and/or extracts.
- Enhancements and/or system replacement for external systems.
- Coordinating schedules of multiple test scenarios and environments.
- Host environment support services.
- DFARS and FARS statements and timing of rule changes.
- Evolution of security environment.
- Behavioral changes required of all WAWF participants.

### **8.3 Alternatives & Trade-Offs Considered**

Currently the WAWF application is the simplest, most achievable and least expensive alternative to the paper-based, labor intensive, and heavily dependent upon manual and repetitive data inputs previously administered by functional communities.

## 9 Notes

The following sections provide acronyms and definitions of terms used herein.

### Appendix A: Glossary Of Terms

Access	For an Automated Information System (AIS), a specific type of interaction between a subject and object that causes information to flow from one to the other.
Access control	The process of limiting access to the resources of an automated information system only to authorized programs, processes, or other systems (in a network).
Access Control List (ACL)	The usual means by which access to and denial of network services is controlled by network security systems. It is a list of the available services and the hosts permitted to use each service. (Bay Networks Guide to Networking Terms)
Accreditation	A formal declaration by the Designated Accreditation Authority (DAA) that the AIS is approved to operate in a particular security mode using a prescribed set of safeguards. Accreditation is the official management authorization by a designate accreditation authority for operation of an automated information system in a particular security mode, using a prescribed set of safeguards based on the certification process, as well as other management considerations. The accreditation statement affixed security responsibility with the DAA and shows that due care has been taken for security. (DoD 5200.40, DITSCAP)
Acceptor	WAWF user that is responsible for accepting goods/services.
Accounting	Activities that record projected and actual costs incurred; decrement specific accounts to which those costs accrued; and maintain records of balances remaining in the accounts. (DoD EB/EC Architecture)
Acquirer	An organization that procures software products for itself or another organization. (J-STD-016-1995)
Activity	A collection of processes within a function in which people or groups participate to carry out the objectives of the function. (DOD 8320.1-M)
Activity Models (also known as Process Models)	Models of the processes that make up the functional activity showing inputs outputs, controls, and mechanisms through which the processes of the functional activity are (or will be) conducted, (DOD 802 M, Change 1)
Application Architecture	The organizational structure of a system or Computer Software Configuration Item (CSCI), identifying its components, their interfaces, and a concept of execution among them.

Applications Programming Interface (API)	A language and message format used by an application program to communicate with another service-providing program, such as an operating system or database management program. (Bay Networks Guide to Networking Terms)
Assistive (or Adaptive) Technology	Assistive technology is any item, piece of equipment, or product system- whether commercially available, modified, or custom built- that is used to maintain or increase the functional capabilities of a person with a disability.  (Assistive Technology Act of 1998)
Assurance	A measure of confidence that the security features and architecture of AIS accurately mediate and enforce the security policy. Compare with trusted computer system. (Glossary of Computer Security Terms, NCSC-TG-004, 21 Oct 88 (the "Olive" Book))
Architecture	The organizational structure of a system or component. (IEEE Standard Glossary of Software Engineering Terminology)
Architectural Design	The process of defining a collection of hardware and software components and their interfaces to establish the framework for the development of a computer system.  The result of the process in 1.  (IEEE Standard Glossary of Software Engineering Terminology)
Archiving	Activities involving the storing, retrieval, and maintenance of historical documentation. (DoD EB/EC Architecture)
Audit Trail	A chronological record of system activities that is sufficient to enable the reconstruction, reviewing, and examination of the sequence of environments and activities surrounding or leading to an operation, a procedure, or an event in a transaction from its inception to final results. (Glossary of Computer Security Terms, NCSC-TG-004, 21 Oct 88 (the "Olive" Book))
Auditing	Activities consisting of the collection and analysis of financial and cost data to review or verify claimed or projected costs. (DoD EB/EC Architecture)

<p>Authenticate</p>	<p>To verify the identity of a user, device, or other entity in a computer system, or to verify the integrity of data that have been stored, transmitted, or otherwise exposed to possible unauthorized modifications.</p> <p>To verify the identity of a user, device, or other entity in a computer system, often as a prerequisite to allowing access to resources in a system.</p> <p>To verify the integrity of data that have been stored, transmitted, or otherwise exposed to possible unauthorized modification.</p> <p>(Glossary of Computer Security Terms, NCSC-TG-004, 21 Oct 88 (the "Olive" Book))</p>
<p>Authentication</p>	<p>A security measure designed to protect a communications system against acceptance of fraudulent transmissions or simulation by establishing the validity of a transmission message, or originator, or a means of verifying an individual's eligibility to receive specific categories of information.</p>
<p>Authenticity</p>	<p>The property that allows the ability to validate the claimed identity of a system entity. (DoDI 5200.40, DITSCAP)</p>
<p>Author</p>	<p>The author is responsible for the product requiring a peer review and presents the material to the peer review team.</p>
<p>Authorization</p>	<p>The granting of access rights to a user, program, or process. (Glossary of Computer Security Terms, NCSC-TG-004, 21 Oct 88 (the "Olive" Book))</p>
<p>Automated Information System (AIS)</p>	<p>A combination of information, computer, and telecommunications resources and other information technology, and personnel resources that collects, records, processes, stores, communicates, retrieves and displays information.</p>
<p>Attribute</p>	<p>A property or characteristic of one or more entities; for example, COLOR, WEIGHT, SEX. Also a property inherent in an entity or associated with that entity for database purposes. (FIPS Pub 11-3)</p>
<p>Availability</p>	<p>The state when data is in the place needed by [or accessible to] the user, at the time the user needs them, and in the form needed by the user. (Glossary of Computer Security Terms, NCSC-TG-004, 21 Oct 88 (the "Olive" Book))</p>
<p>Behavioral design</p>	<p>The design of how an overall system or CSCI will behave, from a user's point of view, in meeting its requirements, ignoring the internal implementation of the system or CSCI. This design contrasts with architectural design, which identifies the internal components of the system or CSCI, and with the detailed design of those components.</p>
<p>Build</p>	<p>An operational version of a system or component that incorporates a specified subset of the capabilities that the final product will provide. (IEEE Standard Glossary of Software Engineering Terminology)</p>

CAPS (C/W)	Computerized Accounts Payable System (Army, Marine Corps, DFAS).
Certification	Comprehensive evaluation of the technical and non-technical security features of an IT system and other safeguards, made in support of the accreditation process, to establish the extent that a particular design and implementation meets a set of specified security requirements. (DoDI 5200.40, DITSCAP)
Client	A user, software application, or computer that requests the services, data, or processing of another application or computer (the "server"). In a two-task environment, the client is the user process. In a network environment, the client is the local user process and the server may be local or remote. (Oracle, Introduction to Oracle, 1996)
Commit	To make changes to data (inserts, updates, deletes) in the database permanent. Before changes are stored, both the old and new data exist so that changes can be stored or the data can be restored to its prior state. (Oracle, Introduction to Oracle, 1996)
Computer Software Configuration Item (CSCI)	An aggregation of software that is designated for configuration management and treated as a single entity in the configuration management process. (IEEE Standard Glossary of Software Engineering Terminology)
Computer Software Unit (CSU)	A separately testable element specified in the design of a computer software component. A logically separable part of a computer program. A software component that is not subdivided into other components. (IEEE Standard Glossary of Software Engineering Terminology)
Configuration Item	An aggregation of hardware, software, or both, that is designated for configuration management and treated as a single entity in the configuration management process. (IEEE Standard Glossary of Software Engineering Terminology)
Configuration Management	A discipline applying technical and administrative direction and surveillance to: identify and document the functional and physical characteristics of a configuration item, control changes to those characteristics, record and report change processing and implementation status, and verify compliance with specified requirements. (IEEE Standard Glossary of Software Engineering Terminology)
Contract administration	Activities that result in the orderly execution and completion of a contract as required by the terms of the contract, acquisition regulations and law. (DoD EB/EC Architecture)

Critical Design Review (CDR)	A review conducted to verify that the detailed design of one or more configuration items satisfy specified requirements; to establish the compatibility among the configuration items and other items of equipment, facilities, software, and personnel; to assess risk areas for each configuration item; and, as applicable, to assess the results of analyses, review preliminary hardware product specifications, evaluate preliminary test planning, and evaluate the adequacy of preliminary operation and support documents.  (IEEE Standard Glossary of Software Engineering Terminology)
Data	A representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means. (FIPS Pub 11-3)
Database	A collection of interrelated data stored together in one or more computerized files. (IEEE Standard Glossary of Software Engineering Terminology)
Data Administration	A function of the organization that oversees the management of data across all functions of the organization, and is responsible for centralized information planning and control. (NBS Special Pub 500-149)
Data Administrator	A person or group that ensures the utility of data used within an organization by defining data, coordinating data structures among organizational components, performing logical database design, and defining data security procedures. (NBS Special Pub 500-152)
Database Administrator	A person or group that monitors, provides user support, archives, restores, starts, stops and generally ensures the availability of an operational database.
Data Dictionary	A specialized type of database containing metadata that is managed by a data dictionary system; a repository of information describing the characteristics of data used to design, monitor, document, protect, and control data in information systems and databases; an application of a data dictionary system. (FIPS Pub 500-152)
Data Element	A named identifier of each of the entities and their attributes that are represented in a database. (FIPS Pub 11-3)
Data Integrity	The state that exists when the accuracy completeness timeliness, and synchronization of the data is the highest achievable technical validity. (DoD 8320.1-M)
Database Management System (DBMS)	An integrated set of computer programs that provide the capabilities needed to establish, modify, make available, and maintain the integrity of a database. (J-STD-016-1995)

Data Model	<p>In a database, the users logical view of the data in contrast to the physically stored data, or storage structures. A description of the organization of data in a manner that reflects the information structure of an enterprise. (FIPS Pub 11-3)</p> <p>Logical Data Model. A model of the data stores and flows of the organization derived from the conceptual business model. (NIST Special Pub 500-149)</p> <p>Physical Data Model. A representation of the technologically independent requirements in a physical environment of hardware, software, and network configurations representing them in the constraints of an existing physical environment. (NIST Special Pub 500-149)</p>
Data Security	<p>The protection of data from unauthorized (accidental or intentional) modification, destruction or disclosure.</p>
Data Structure	<p>The logical relationships, which exist among units of data and the descriptive features defined for those relationships and data units; an instance or occurrence of a data model. (NIST Special Pub 500-152)</p>
Database	<p>A collection of interrelated data, often with controlled redundancy, organized according to a schema to serve one or more application; the data are stored so that they can be used by different programs without concern for the data structure organization. A common approach is used to add new data and to modify and retrieve existing data. (FIPS Pub 11-3)</p>
Design	<p>The process of defining the architecture, components, interfaces, and other characteristics of a system or component.</p> <p>The result of the process in 1.</p> <p>(IEEE Standard Glossary of Software Engineering Terminology)</p>
Developer	<p>An organization that develops software products ("develops" may include new development, modification, reuse, reengineering, maintenance, or any other activity that results in software products). The developer may be a contractor or a Government agency.</p> <p>(J-STD-016-1995)</p>
DMZ	<p>Demilitarized Zone (DMZ) means placing a buffer area between two networks.</p>
Entry Criteria	<p>The elements and conditions necessary to be in place to begin the process.</p>
Evolutionary Development	<p>The "evolutionary" strategy develops a system in builds, but differs from the incremental strategy in acknowledging that the user need is not fully understood and all requirements cannot be defined up front. In this strategy, user needs and system requirements are partially defined up front, and then are refined in each succeeding build.</p> <p>(J-STD-016-1995)</p>

Exit Criteria	Elements and/or conditions necessary to be in place to complete a process.
Fault Tolerant	The ability of a program or system to operate properly even when a fault occurs. Fault-tolerant systems are designed to ensure that even in the event of a power failure, a disk crash, or a major user error, for example, data is not lost and the system can continue operation. (Bay Networks Guide to Networking Terms)
File Transfer Protocol (FTP)	Protocol that allows a user on one host to access and transfer files to and from another host over a network. Defined in STD9, RFC 959. In LAN technology, a file-sharing protocol that operates at layers 5 through 7 of the OSI reference model. On the Internet, a tool for accessing linked files. (Bay Networks Guide to Networking Terms)
Functional Activity	The primary subdivision of a functional area, made up of a collection of processes that can be managed together using policies and procedures not specifically applicable to other functional activities within the functional area. (DoD 8320.1 –M)
Functional Process	A well defined (or definable) set of logically related tasks and decisions within a functional activity that use resources to produce products or services. (DoD 8320.1-M)
Functional Process Improvement	Application of a structured methodology to define a function's "AS IS" and "TO BE" environment; current and future mission needs and end user requirements; objectives and a strategy for achieving those objectives; and a program of incremental and evolutionary improvements to processes, data, and supporting AISs that are implemented through functional, technical, and economic analysis and decision making. (DoD 8020.1-M, Change 1)
Graphical User Interface (GUI)	Computer interface method where the user performs various functions by pointing to graphic icons on the window instead of typing in a string of commands.
Hypertext Transfer Protocol (HTTP)	Hypertext transfer protocol. A client/server protocol for linking text files to one another in order to share information on the Internet and the World Wide Web (WWW).
IAPS	Integrated Accounts Payable System (Air Force).
Icon	A graphic symbol on a user interface display.
Incremental Development	The "incremental" strategy (called "Preplanned Product Improvement" in DODI 5000.2) determines user needs and defines the system requirements, then performs the rest of the development in a sequence of builds. The first build incorporates part of the planned capabilities; the next build adds more capabilities, and so on, until the system is complete. (J-STD-016-1995)

<p>Information</p>	<p>The meaning assigned to data by means of the known conventions used in their representations. (JCS PUB 1, 1 June 1987)</p> <p>Information is a shared resource and is not owned by any organization within the restrictions of security, sensitivity, and proprietary rights. (AR 25-1, 18 November 1988).</p> <p>The meaning people assign to data that increases their knowledge with regard to an item of interest. Information usually is derived from the assembly, analysis, or summarization of data. (DoDD 7740.1 (Encl. 2))</p> <p>The meaning that is currently assigned to data by means of the conventions applied to that data in a conceptual schema language, any kind of knowledge about things facts or concepts of a universe of discourse that is exchangeable among users. (DoD 8320.1-M, FIPS PUB 11-3)</p>
<p>Information Model</p>	<p>A model that represents the processes, information classes, information flow, and elements of an organization and all relationships among these factors. (FIPS PUB 183, IDEF0)</p>
<p>Information Requirement</p>	<p>The expression of need for data or information to carry out specified and authorized functions or management purposes that require the establishment or maintenance of forms or formats or reporting or record keeping systems, whether manual or automated.</p>
<p>Information System (IS)</p>	<p>The organized collections processing, maintenance, transmission, a dissemination of information, in accordance with defined procedures, whether automated or manual. (DoD 8320.1-M and DoDD) 5200.28, as modified by the Office of Management and Budget [OMB] A-130)</p>
<p>Information Technology (IT)</p>	<p>The hardware and software used in connection with Government information regardless of the technology involved, whether computers, communications, micrographics, or others. (DoD 8029.1-M)</p>
<p>Inspector</p>	<p>WAWF user that is responsible for inspecting goods/services.</p>
<p>Integrity</p>	<p>Quality of an IT system reflecting the logical correctness and reliability of the operating system; the logical completeness of the hardware and software implementing the protection mechanisms; and the consistency of the data structures and occurrence of the stored data. It is composed of data integrity and system integrity. (DoDI 5200.40, DITSCAP)</p>
<p>Interface</p>	<p>The process of either extracting or updating information from one system to other.</p>
<p>Maintenance (of Software)</p>	<p>All action taken to retain materiel in a serviceable condition or to restore it to serviceability. It includes inspection, testing, servicing, and classification as to serviceability, repair, rebuilding, and reclamation. (See Joint Pub 1-02.)</p> <p>The set of activities that takes place to ensure that software installed for operational use continues to perform as intended and fulfill its intended role in system operation. Software maintenance includes improvements, aid to users, and related activities. (IEEE Standard Glossary of Software Engineering Terminology)</p>

Metadata	Information describing the characteristics of data; data or information about data; descriptive information about an organization's data, data activities, systems, and holdings. (NBS Special Pub 500-152)
Payment/disbursement	Activities that result in correct payment to a provider of goods and services. (DoD EB/EC Architecture)
Peer	A peer is a project member who is assigned to perform a peer review of the product. A peer is responsible for performing his or her role in accordance with the specific Peer Review Process. The peer has a level of development expertise and product knowledge sufficient to comprehend the product under review. Peers are also referred to in this document as "Inspectors", "Reviewers", and/or "Team Members."
Peer Review	A peer review is a methodical examination of a product by the author's peers to identify defects and areas where changes are needed. The specific products that will undergo a peer review are identified in the project's software development plan and scheduled as part of the software project planning activities.
Privilege	A right to successfully execute a particular type of SQL statement. Some examples of privileges include rights to connect to the database (create a session), to create a table in your schema, to select rows from someone else's table, and to execute someone else's stored procedure. The privileges of an Oracle database can be divided into two distinct categories; system privileges and object privileges. (Oracle, Introduction to Oracle, 1996)
Procedure	A PL/SQL subprogram that performs a specific sequence of actions. (Oracle, Introduction to Oracle, 1996)
Process	A group of logically related decisions and activities required to manage the resources of the Army. (AR 25-1)
Receiving	Activities associated with the receipt and recording of contact deliverables. (DoD EB/EC Architecture)
Reengineering	The process of examining and altering an existing system to reconstitute it in a new form. May include reverse engineering (analyzing a system and producing a representation at a higher level of abstraction, such as design from code), restructuring (transforming a system from one representation to another at the same level of abstraction), re-documentation (analyzing a system and producing user or support documentation), forward engineering (using software products derived from an existing system, together with new requirements, to produce a new system), retargeting (transforming a system to install it on a different target system), and translation (transforming source code from one language to another or from one version of a language to another). (J-STD-016-1995)
Requirement	A characteristic that a system or CSCI must possess in order to be acceptable to the acquirer.  A mandatory statement in this standard or another portion of the contract. (J-STD-016-1995)

Requirements analysis	Activities required determining appropriate means of filling an established need. (DoD EB/EC Architecture)
Risk	The probability that a particular threat will exploit a particular vulnerability of the system. (Glossary of Computer Security Terms, NCSC-TG-004, 21 Oct 88 (the "Olive" Book))
Risk Analysis	The process of identifying security risks, determining their magnitude, and identifying areas needing safeguards. Risk analysis is a part of risk management. Synonymous with risk assessment. (Glossary of Computer Security Terms, NCSC-TG-004, 21 Oct 88 (the "Olive" Book))
Risk Management	The total process of identifying, controlling, and eliminating or minimizing uncertain events that may affect system resources. It includes risk analysis, cost/benefit analysis, selection, implementation and test, security evaluation of safeguards, and overall security review. (Glossary of Computer Security Terms, NCSC-TG-004, 21 Oct 88 (the "Olive" Book))
SABRS	Accounting Budget and Reporting System is the U.S. Marine Corp accounting system.
Security Policy	The set of laws, rules, and practices that regulate how an organization manages, protects, and distributes sensitive information. (Glossary of Computer Security Terms, NCSC-TG-004, 21 Oct 88 (the "Olive" Book))
Software unit	An element in the design of a CSCI; for example, a major subdivision of a CSCI, a component of that subdivision, a class, object, module, function, routine, or database. Software units may occur at different levels of a hierarchy and may consist of other software units. Software units in the design may or may not have a one-to-one relationship with the code and data entities (routines, procedures, databases, data files, etc.) that implement them or with the computer files containing those entities. Also See Computer Software Unit. (J-STD-016-1995)
Transmission Control Protocol/Internet Protocol (TCP/IP)	A protocol capable of linking different computer platforms across networks. A set of networking protocols designed to link computers from multiple Vendors. TCP/IP was originally developed by the Advanced Research Project Agency (ARPA) as part of the UNIX operating system and has been adopted as a networking standard in many government, academic, and technical computing environments.
Trigger	The triggering a sequence of actions based on a specific database action, such as after delete, thereby supporting a notion of encapsulation. (FIPS Pub 127-2)
User Agent	Any software that retrieves and renders Web content for users. This may include Web browsers, media players, plug-ins, and other programs – including assistive technologies – that help in retrieving and rendering Web content. (User Agent Accessibility Guidelines 1.0)
Workflow	The automation of a business process, in whole or part, during which documents, information or tasks are passed from one participant to another for action, according to a set of procedural rules. (Workflow Management Coalition Terminology & Glossary, June 1996)

Workflow Process	A set of one or more linked procedures or activities which collectively realize a business objective or policy goal, normally within the context of an organizational structure defining functional roles and relationships (Workflow Management Coalition Terminology & Glossary, June 1996).
Workflow Process Definition	The representation of a business process in a form, which supports automated manipulation, such as modeling, or enactment by a workflow management system. The process definition consists of a network of activities and their relationships, criteria to indicate the start and termination of the process, and information about the individual activities, such as participants, associated IT applications and data, etc. (Workflow Management Coalition Terminology & Glossary, June 1996)
Workflow Task	Descriptions of a piece of work that forms one logical step within a process. An activity may be a manual activity, which does not support computer automation, or a workflow (automated) activity. A workflow activity requires human and/or machine resources(s) to support process execution; where human resource is required an activity is allocated to a workflow participant. An automated task is an activity, which is capable of computer automation using a workflow management system to manage the activity during execution of the business process of which it forms a part. (Workflow Management Coalition Terminology & Glossary, June 1996)
World Wide Web (WWW)	The volume of information accessible through the Internet. Collection of Internet "pages" connected by hypertext linking and accessed via a Web browser application. (Bay Networks Guide to Networking Terms)

## Appendix B: Acronyms

.com	Company or Commercial Domain (Internet)
.gov	Government Domain (Internet)
.mil	Military Domain (Internet)
AIS	Automated Information System
API	Application Programming Interface
ASCII	American Standard Code for Information Interchange
AT	Assistive Technology
CAGE	Contractor and Government Entity (Code)
CCB	Configuration Control Board
CDR	Critical Design Review
CLI	Call Level Interface
CLIN	Contract Line Item Number
CM	Configuration Management
COE	Common Operating Environment
CONOPS	Concept of Operations
COOP	Continuity of Operations
CPU	Central Processing Unit or Computer Processing Unit
DAA	Designated Accrediting Authority
DB	Database
DBDD	Database Design Description
DBMS	Database Management System
DCAA	Defense Contract Audit Agency
DD	Data Dictionary
DID	Data Item Description
DII	Defense Information Infrastructure
DISA	Defense Information Systems Agency
DISN	Defense Information Services Network
DLA	Defense Logistics Agency
DMC	Defense Mega Center
DoD	Department of Defense
DoDAAC	DoD Activity Address Code
DoDD	Department of Defense Directive
DoDI	Department of Defense Instruction
DOM	Document Object Model

DSS	Digital Signature Standard
EB	Electronic Business
EC	Electronic Commerce
ECP	Engineering Change Proposal
ECRC	Electronic Commerce Resource Center
EDI	Electronic Data Interchange
FIPS	Federal Information Processing Standard
FTP	File Transport Protocol
FY	Fiscal Year
GIF	Graphic Interchange Format (CompuServe)
GUI	Graphical User Interface
HTML	Hypertext Markup Language
I&A	Identification and Authentication
ICD	Interface Control Document
IDEF	Integrated [Computer-Aided Manufacturing] Definition Language
IT	Information Technology
JDBC	Java Database Connectivity
JPEG	Joint Picture Expert Group
JRB	Joint Requirements Board
JTA	Joint Technical Architecture
LAN	Local Area Network
MIME	Multipurpose Internet Mail Extensions
NBS	National Bureau of Standards
NCSC	National Computer Security Center
NIST	National Institute of Standards and Technology
OAT	Operational Acceptance Testing
OCD	Operational Concept Description
ODBC	Open Database Connectivity
OMB	Office of Management and Budget
OS	Operating System
OSI	Open Systems Interconnection
PDF	Portable Data Format (Adobe)
PKCS	Public-Key Cryptography Standards
PKI	Public Key Infrastructure
PL	Public Law
PMO	Program Management Office
Pub	Publication

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RDBMS	Relational Database Management System
SCP	Software Change Package or System Change Package
SDD	Software Design Description
SIPS	Software Production Specification
SMTP	Simple Mail Transfer Protocol
SQL	Structured Query Language
SSH	Secure Shell
SSL	Secure Socket Layer
SUM	Software User's Manual
STD	Software Test Description
UDF	User Defined File
UTP	Unit Test Plan
WAR	Web Application Resource
WAWF	Wide Area Workflow (Usually referring to the umbrella program)
WAWF-RA	Wide Area Workflow-Receipt and Acceptance
W3C	World Wide Web Consortium
WWW	Worldwide Web
XFDL	Extensible Forms Description Language
XHTML	Extensible HyperText Markup Language (a reformulation of HTML 4 in XML 1.0)
XML	Extensible Markup Language
XPATH	XML Path Language
XSL	Extensible Stylesheet Language
XSLT	XSL Transformations