

# **DoD Tri-Service IETM Interoperability Task Force**

**Preliminary**

**Joint IETM Architecture (JIA) Handbook**



**March 31, 1999**

**Prepared by:**

**The DoD IETM Interoperability Core Architecture Team (CAT)**

Mr. Robert S. Kidwell  
Mr. Don Reynolds  
Mr. Joe Brazy  
Mr. Gary Forrester  
Mr. Tom Morris

Mr. David Cooper  
Mr. Pushpa Merchant  
Mr. Glenn Handrahan  
Mr. Glenn Copen

## **PREAMBLE**

The enclosed three-ring binder represents a Preliminary Joint IETM Architecture (JIA) Handbook for the Department of Defense (DoD). The handbook includes four individual technical descriptions that have been revised into specific document formats as defined by the Tri-Service IETM Interoperability Task Force. The handbook is to be utilized by a select DoD panel for purposes of formulating a DoD military handbook process as guidance for the JIA.

**TABLE OF CONTENTS**

PREAMBLE..... ii  
1.0 INTRODUCTION ..... 1  
    1.1 The Joint Logistics Commanders ..... 1  
    1.2 Key Technologies..... 2  
    1.3 Handbook Organization..... 2

## 1.0 INTRODUCTION

This preliminary handbook provides an overview of the components of the Joint IETM Architecture (JIA) highlighted in Figure 1.0-1. The four key components of the architecture include:

- A Common Browser – for the viewing of Interactive Electronic Technical Manuals (IETMs).
- Object Encapsulation and Component Interface – for the authoring and reuse of IETM components (e.g., work packages, common maintenance procedures, illustrated parts breakdowns, repair parts and special tool lists).
- Web Server and Database Interfaces – for the storage of IETM components and their delivery to the browser.
- Addressing Model and Catalog Registry – for the linking together of related components, and a component registry for authors to aid component reuse.

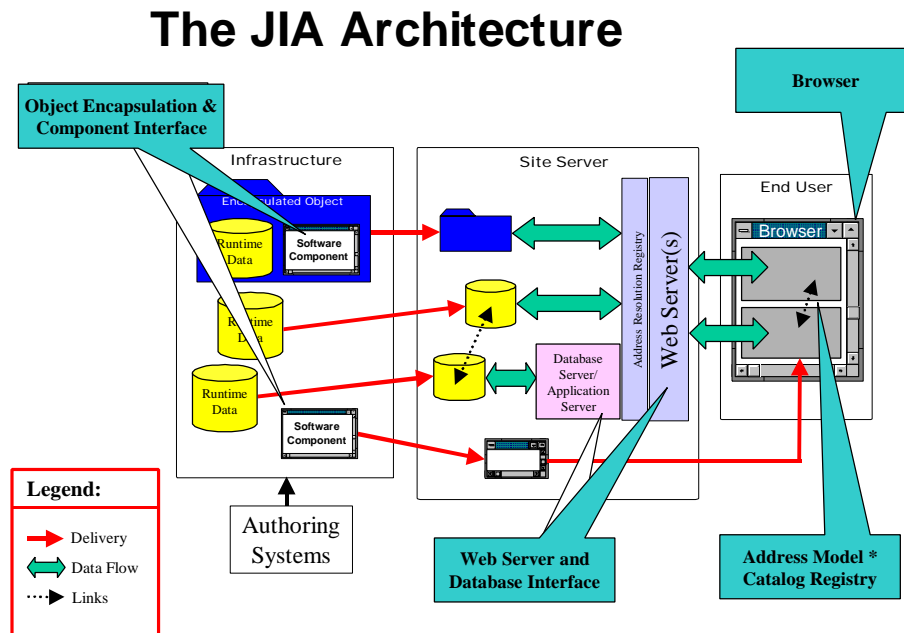


Figure 1.0-1 The JIA Architecture and its Components

### 1.1 The Joint Logistics Commanders

The DoD JIA and all subsequent work are in direct support of a Joint Logistics Commander's (JLC) request letter dated June 1997. The letter stated: "(1) The transmission of digital data within the services is quickly becoming the dominant medium for communicating and accessing technical information needed to maintain DoD field operations. Each of our services has ongoing efforts to convert paper-based technical documentation into digital format, since this data is needed to sustain war fighting capability in joint operations, an uniform approach must be

developed for acquiring and viewing this data. This facilitates an interoperable requirement by ensuring that regardless of the source, the data can be read and viewed by a common user interface system and be accessible from an uniform electronic technical library.

The JLC letter further states:

- Develop a uniform approach for electronically communicating and accessing technical data throughout DoD.
- Maximize the use of commercial-off-the-shelf technology in the process.
- Develop a common user/information interface for field delivery systems.

## **1.2 Key Technologies**

The JIA is leveraging key information technologies to meet the JLC goals. These technologies include:

- World Wide Web (WWW) and the Internet/Intranet (e.g., HyperText Markup Language and Extensible Linking Language address models).
- Web Publishing, Markup, and Style Languages (Extensible Markup Language, Extensible Style Language).
- Object Models (e.g., Component Object Model).
- Web Browser and Web Server Scripting Languages (e.g., JavaScript, ECMAScript).
- Databases (relational and object).

The term IETM Interoperability is the key towards meeting the JLC's objectives above and is the first focus of the DoD Task Force. To this end, we have defined interoperability to mean:

- The ability of dissimilar systems to be linked together and operate as a single entity.
- The ability of software and hardware on multiple machines from multiple vendors to communicate.
- The ability of systems, units or forces to provide services from other systems, units or forces and to use these services so exchanged to enable them to operate effectively together.

## **1.3 Handbook Organization**

Based on the criteria defined by the Tri-Service IETM Interoperability Task Force, the four individual component task descriptions have been re-organized. This was primarily accomplished to focus attention on the varied and different IETM stakeholders. Table 1.3-1 highlights each of the four architectural components, their target audience, current presentation structure, and applicable guide. For example, since the two primary commercial browser products (Netscape Navigator, and Microsoft Internet Explorer) are essentially free, the browser document has been organized as a Commercial Item Description (CID). However, the three remaining architectural components are not so straightforward. Both the object encapsulation component and the addressing model component will require significant changes (acquisition, technical, business, and implementation) not found in today's commercially available products.

Therefore, these two architectural components have been re-organized as Requirements Documents.

**Table 1.3-1 IETM Architecture Component, Target Audience and Presentation Structure**

IETM Architecture Component	Target Audience	Current Presentation Structure	Applicable Guide/Template
Browser	<ul style="list-style-type: none"> <li>Purchasing agents for commands/organizations</li> </ul>	Commercial Item Description (CID)	<ul style="list-style-type: none"> <li>GSA Federal Standardization Manual-FSPM-0001;</li> <li>DOD 4120.3-M, Defense Standardization Program Policies and Procedures</li> </ul>
Component Interface and Object Encapsulation	<ul style="list-style-type: none"> <li>IETM Software developers</li> <li>IETM Content developers</li> <li>DoD IT Integration Specialists</li> </ul>	Requirements Document	NASA-DID-P200
Addressing Model and Catalog Registry	<ul style="list-style-type: none"> <li>Tri-Service IETM Working Group Members</li> <li>IETM Software developers</li> <li>IETM Content developers</li> <li>DoD/IETM Policy Guidance Personnel</li> </ul>	Requirements Document	NASA-DID-P200
Database and Web Server Interface	<ul style="list-style-type: none"> <li>Developers of JIA-compliant IETM systems</li> <li>DoD/Service Program Managers</li> </ul>	Developer Guidance Document	N/A

The fourth and final architectural component Web Server and Database Interface has been re-organized as a developer’s guidance document. Again, commercial products also exist for the Web server and database interface; however, requirements for end-user interoperability and mobile platform support (i.e., portable maintenance aids, or laptop computers) will lead to IETM development and delivery trade-off issues.

In closing out this section on handbook organization, the following key points are offered. First, each architectural component includes a series of appendices. These appendices vary in number depending on if there are any outstanding issues and a table of contents comparing this updated release with a previous published version. Second, there is a consolidated table of contents comparison under Enclosure 1 followed by a proposed military handbook table of content for the DoD panel consideration under Enclosure 2.