The Future Benefits of Utilizing a Web-Based Architecture for DoD IETMs

Eric L. Jorgensen
Naval Surface Warfare Center
Carderock Division

CALS EXPO 1998
26 October 1998
Developing a Web-Based Approach to DoD IETMs

The Joint IETM Architecture for the Acquisition and Deployment of DoD IETMs

Where could it lead us?
The JIA Foundation - What JIA Implementation Will Give Us

• IETM View Packages are Web-Enabled and Installed on JIA Conforming Web Server(s)
• Users have JIA Intranet Access to Server(s)
  – Personal Web Server in User Device
  – Local Intranet using LAN
  – Regional/Theater Intranet using WAN
  – Global Access to Servers using DII & GCSS
• DNS or HOSTS Mapping Files Available to Implement JIA Addressing Model
Benefits to the User

- Common and Familiar Web-Browser Interface to any IETM on the Intranet
  - Only one Software Application to Launch
- Intelligent Search Based on JIA Metadata
  - More likely to get what user is looking for
- No Software Installation for IETM Viewing
  - Any Needed Software Components are Automatically Installed when Accessing IETM
Benefits to Authoring Organization

• Same IETM Packaging Form (View Package) for Any DoD Customer
• Wide Selection of Commercially Available Web Oriented Authoring Tools
• East to Self-Test JIA Compliance
  – Baseline JIA Intranet can be constructed from hardware and software components available at any computer store.
  – JIA Browser Upgrade Plugins Will be Available on DOD Web Sites - Auto Install
Future Expandability

- Easy to Expand IETM Implementation
  - Bridge Local Implementation onto a Regional or Global Network without modifying IETM Applications
- Same Client and Server Software and Data for any Scale Implementation
- Expandability/Contractability is Built into the World Wide Web and Internet Models used as a Baseline for JIA
  - Result of the MILSPEC TCP/IP underpinnings
Ad Hoc Aggregations of IETMs

- Web Servers and Web Server File Bases can easily be combined after the fact on short notice
  - This is a needed capability to support ad hoc Joint Operations
  - C1 and C2 IETM applications require only simple file copies on Server (I.e. Electronic Bookshelf)
  - S2 and S2 IETM Applications on Physical Servers can be collocated with data bases intact - Only IP addresses of servers need changing
  - Standard Web DNS administration does “rewiring”
Freebies Gained by Going Web

• Most needed Viewing Software Plugins are available Free for Web Browsers
  – Graphics (GIFF, JPEG, VRML, Vector Graphics Coming Soon)
  – Multimedia (Animations and Sound)
  – More Every Day

• Browser History Stack
  – Easy to View de facto “Audit Trail”

• Caching Built In - Performance Enhancer
Objective Obtained
IETM Interoperability +

- IETM Architecture Applied to all Fielded Weapon System Support Information
- Ability to Include and Interoperate IETM Data Bases and Additional Functions to Support:
  - Maintenance including Parts Ordering
  - Equipment Operations
  - Job Site Training
- Confederate and Include Existing Legacy Information into Interoperable System
Innovative Concept - Using Web Objects as Source Data

• Basic concept - Objects can contain objects
• Small objects can easily be reused as source in another object
  – Example - Animation using proprietary format can stand alone for display through a Web Browser and also be part of both a Training Module and an IETM
  – This is the way HTTP works in the Web!
Authoring Process

Web Objects Serving as Reusable Source Objects

- Authoring
- Authoring Data Base
- Authoring #2 Data Base
- Neutral Format Sharable Source Data
- Authoring #2
- View Package Creation Process
- Encapsulated Web Object
- Encapsulated Web Object
- WWW
- CD/ROM
- CITIS
User Site Process

- GCSS - DoD Intranet
- User Workstation
- Portable User Device
- Personal Server
- Data Base of Reusable Objects
- Site Server
- Encapsulated Web Objects
- Encapsulated Web Objects on CD/ROM
This New Architecture is Not Just Applicable to IETMs

DoD Can Use the New Web-Based IETM Architecture to Build an Integrated Data Environment at the Operation and Maintenance Site
Web-Based Concept of Single Product Support Data Base

• Include All Information Needed to Maintain, Train, and Operate Weapon System
• Accessible On-Line at Equipment Site
• Does Not Require Monolithic System
• Need Capability to Draw Different Functional Views from Common Data Base
  – (Training, Job Aiding, Technical Reference, Parts Info, Configuration Management, etc.)
Future Expansion - Include Other Job Performance Aids

• Real-Time Link to Information Not Available at Job Site
  – Consult with Shore-based Help desk
  – Communicate with Manufacturer Technical Representative at Factory
  – Order Parts On-Line

• Link to Diagnostic Testers

• Access to a Virtual Environment for Maintenance Training (I.e., Simulation)
Final Thought - Bigger Cost Savings are Available with Global Connectivity

- Much better currency of Information with on-line update - do repair right the first time
- Immediate access to parts data, latest insight from manufacturer, remote diagnostics
- Eliminate need for “security blanket” of mostly unneeded reference data. Eliminate life-cycle cost of the extra information.
E-Mail

Eric L. Jorgensen: jorgense@dt.navy.mil