Our Presenters Today

Ed Hougardy
Programmer Analyst, AWS Training and Support Systems
The Boeing Company

Rhonda Wainwright
S1000D and IETM Specialist
SDL Structured Content Technologies
Objectives

Provide an introduction to Interactive Electronic Technical Publications (IETPs)

Explain and demonstrate how delivering S1000D content in an IETP provides advanced functionality:

- Applicability/effectivity filtering at runtime
- Process data modules for interactive fault isolation
- Multimedia for just-in-time training
- Intelligent graphics (hot spots, wire highlighting, more)

Share insights and expertise from an IETP developer
Introduction to Interactive Electronic Technical Publications (IETPs)

- What is an IETP?
- IETP classes, types, and the S1000D Functionality Matrix

Why use IETP with S1000D?

- Demonstration: Applicability
- Demonstration: Locator Graphic
- Demonstration: Process DM
- Demonstration: Simulations and Animations

Industry Expert Presentation: Ed Hougaardy, Boeing

- IETP, Start at the Beginning
What is an IETP?

An Interactive Electronic Technical Publication is:

- An electronic information resource
- Can be delivered online or via CD-ROM/DVD
- Indexed to provide searching capabilities
- Hyper linked to provide easy navigation
- Non-linear in nature; the user jumps from one location to another through interaction with the content
- Interactive; user actions drive navigation to the right information at the right time
Known as “IETMs” or “Interactive Electronic Technical Manuals” pre-S1000D, IETPs originated as Electronic Technical Manuals (ETMs) in the late 80s/early 90s

- Not Interactive; Pre-PDF!
- Usually based on ASCII “print file”
- Basic searching capabilities; saved paper and shipping costs (and that’s about all)

With the introduction of SGML into aviation/defense tech docs, things changed!

- Effectivity/applicability filtering
- System-driven navigation and hyperlinks
- Intelligent graphics
To differentiate between “page turner” ETMs and true “interactive” electronic technical manuals, “Classes” were created:

- **Class 1:** Page turner documents, may have indexing and hyperlinking
- **Class 2:** Electronically scrolling documents with indexing and hyperlinking
- **Class 3:** SGML or XML-tagged documents with dialog-driven interaction, user selectable cross-references, indexing & hyperlinking
- **Class 4:** Hierarchically structured SGML or XML documents, dialog driven interaction, user selectable cross references, indexing, & hyperlinking data management by a DBMS
- **Class 5:** Integrated database, identical to Class 4 but integrated at the data level with other application information
“Classes” and “Types”

Later, “Type” classifications were defined to differentiate between the two major kinds of IETMs:

- **TYPE I**
  - Class 1: Page turner documents, may have indexing and hyperlinking
  - Class 2: Electronically scrolling documents with indexing and hyperlinking
  - Class 3: SGML or XML-tagged documents with dialog-driven interaction, user selectable cross-references, indexing & hyperlinking
  - Class 4: Hierarchically structured SGML or XML documents, dialog driven interaction, user selectable cross references, indexing, & hyperlinking data management by a DBMS
  - Class 5: Integrated database, identical to Class 4 but integrated at the data level with other application information
<table>
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<th>Requirement</th>
<th>Complexity - Page</th>
<th>Complexity - IETP</th>
<th>Requirement</th>
<th>All Information sets</th>
<th>Crew / operator</th>
<th>Description and operation</th>
<th>Fault isolation</th>
<th>Non-destructive testing</th>
<th>Corrosion control</th>
<th>Storage</th>
<th>Wiring diagrams</th>
<th>Illustrated parts data</th>
<th>Maintenance planning</th>
<th>Mass and balance</th>
<th>Recovery</th>
<th>Equipment</th>
<th>Weapon loading</th>
<th>Cargo loading</th>
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<th>Role change</th>
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## S1000D Functionality Matrix

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### Special Content

- Front matter: 1
- Supporting technical data: 2
- Warnings and cautions: 1
- Emergency procedures: 2
- Photos: 1
- Audio: 2
- Motion video: 3
- Animation: 4
- Content sensitive help (Tech data): 1
- Content sensitive help (Viewer): 2
- User training: 3

### Navigation and Tracking

- Next and previous: 1
- Return (Chronological): 1
- History of traversed links: 1
- User creation of bookmarks: 1
- System/Subsystem navigation: 1
- Restore initial navigation view: 1
- Audit trail: 2
- Graphical navigation: 2
- Dialog-driven interaction: 3
- Voice-Activated commands: 3

### External Processes

- Transmittal: 3
- Retrieval: 2
- Parts ordering: 3
- Deficiency/Improvement report transmittal: 3
- Maintenance data collection: 3
- Operator debriefing: 3
- Resource scheduling: 3
- Knowledge management: 5

### Graphics

- Pan, zoom, expand, magnify: 1
- Assembly/Disassembly: 2
- Locator graphics: 1
- 3D modeling: 4

### Linking

- External references: 2
- Internal reference: 1
- Hot reference: 2
- Link to separate parts data: 2
- TOC, lists of figures, tables and photos: 1
- Hot spotting: 3

### Updates

- Passive change indications and markings: 1
- Active change indications and markings: 2
- Full change: 1
- Block cycle and urgent changes: 2
- Near real time updates: 2

### User Operation Mode

- Web browser viewable: 3
- Stand alone mode: 1
- Network connectivity: 2
Polling Question #1

What has been your experience with the S1000D Functionality Matrix?

- I’ve never heard of it before today.
- I’ve looked at it before but never used it.
- I’ve used it successfully; it’s a good tool.
- I’ve used it and don’t recommend it.
Choosing an IETP

Major considerations

- Standard technologies: XML, XSL, XSLT, XSL-FO, Java, JavaScript, HTML, XHTML
- Performance: PDOM, AJAX
- Open architecture
- Scalable

Program considerations

- Web-enabled / support for CD/DVD
- API for integration
- Graphic viewer support
- Runtime applicability filtering
- Everything on the S1000D Functionality Matrix that your program needs
IETP configuration development

- Your data must be rendered into the appropriate format for display on screen
- An IETP “skin” needs to be developed
- Any special dialogs need to be created
- IETP print styles need to be developed
- Most IETPs require some sort of configuration file(s)

Another publishing output

- When integrated with an S1000D Common Source Data Base (CSDB), IETP publishing can become as simple as “pushing the print button”
- PDF can be generated as a secondary output from the same XML source
Introduction to Interactive Electronic Technical Publications (IETPs)

- What is an IETP?
- IETP classes, types, and the S1000D Functionality Matrix

Why use IETP with S1000D?

- Demonstration: Applicability
- Demonstration: Locator Graphic
- Demonstration: Process DM
- Demonstration: Simulations and Animations

Industry Expert Presentation: Ed Hougardy, Boeing

- IETP, Start at the Beginning
S1000D IETP Demonstration
Polling Question #2

What is your prior experience with IETMs or IETPs?

- None. I have never worked with IETMs in any capacity
- I have used IETMs as an information consumer (end-user)
- I have prepared data for publishing to IETM
- I have developed IETMs
Introduction to Interactive Electronic Technical Publications (IETPs)

- What is an IETP?
- IETP classes, types, and the S1000D Functionality Matrix

Why use IETP with S1000D?

- Demonstration: Applicability
- Demonstration: Locator Graphic
- Demonstration: Process DM
- Demonstration: Simulations and Animations

Industry Expert Presentation: Ed Hougardy, Boeing

- IETP, Start at the Beginning
IETP: Start at the Beginning

Ed Hougardy
Programmer Analyst,
AWS Training and Support Systems
The Boeing Company
Start at the Beginning – Business Rules are a must

- Authoring guidelines
- Element / Attribute usage
- What data module types are used?
Do you have everything you need?

- DMRL (Data Module Requirements List)
  - A spreadsheet might be more useful
- What about graphics?
  - There might be more than meets the eye
Think outside the box (or IETP)

• Will the data modules be printed?
  • What about multimedia

• Graphics and Foldouts?
  • What size is the screen

• Look and Feel
  • Be open to change
Do you know it's right? Internal Quality Check

- Is the data valid? Does it parse?
  - Applicability might be an issue

- Does it hold up against the business rules?
  - Are you doing what you said you would do

- Does it pass tagging “gotchas”
  - A `internalRef` element might reference the wrong `internalRefTargetType`
The Publication Module ~ The Key to Navigation

- Master module include smaller publication modules
  - *Flexibility create the navigation hierarchy (TOC)*
    - By Standard Numbering System
    - By traditional “publication” order.
  - *Flexibility to update modules within the hierarchy*
Be ready for change; it’s coming

- Have a test suite of data modules
  - Known results and behavior
  - Use all elements
  - Use fewer elements

- Requirements can change; can you?
Playing with fire

- Change the schema
  - Remove elements
  - Require attributes and elements

- Maintenance Issues
  - Staying in sync with the specification
The very beginning

Vendor Selection

- Does it meet your specification requirements (Functionality Matrix)?
- Flexibility to update styles and look & feel
- Support Team
- “No Special Tagging” required
Questions?
For S1000D specification training or for more information…

- Visit us on the web:  [www.sdl.com/xml](http://www.sdl.com/xml)
- Email:  Rhonda Wainwright:  [rwainwright@ sdl.com](mailto:rwainwright@sdl.com)

Join us for our next S1000D webinar…

- S1000D and Multimedia
- Tuesday, September 21, 2010