S1000D Implementation
In Civil Aviation

David Nilsson
Boeing Commercial Airplanes
ATA Civil Aviation Working Group Chair
Agenda

• S1000D Implementation by:
  – Boeing Commercial Airplanes
  – Pratt & Whitney
  – Airbus SAS
  – Embraer

• Questions for the Panel
S1000D Implementation by Boeing

Mark Eaton

BOEING
**April 1993**
1st Boeing SB SGML Data Delivery to Airlines, to ATA Spec 2000

**March 2005**
Boeing Commits to S1000D as 787 Support Information Strategy, in lieu of ATA iSpec 2200

**ATA, AIA and ASD agree to manage the S1000D Specification jointly**

**2006**
- 787 Support Data Systems Development Begins
- S1000D 2.3 – 3.0 Requirements Work; 5 CAWG CPF’s Submitted

**Systems Requirement & Standards Refinement**
- S1000D 2.x – 2.3; 2 CAWG CPFs Submitted
- 787 Content Creation & Management Systems
- Information Delivery Systems
- Customer Content Management, Creation, and Delivery

**March 2008**
First S1000D 2.3 Sample Data Delivered to Airlines

**June 2008**
Airlines on line access to support data begins
June 2009
S1000D Issue 4.0.1 Released

2009 and 2010
CPFs submitted for Issue 4.1
Lock-up for CPF submittal 1Q2011

2011
S1000D
Chapter updates and review for Issue 4.1

2012
Editorial changes and final publishing

2011
Proposal to re-organize S1000D into foundational items and building blocks
Expected to be approved
Large effort will begin after 4.1 release

January 2009
First S1000D 3.0 Production Data Delivery to Airlines

Time (not to linear scale)

Mark Eaton
S1000D Implementation in Boeing
Boeing 787 Information Types
In S1000D version 3.0

Information Targeted:
• System Description (AMM part 1)
• Aircraft Maintenance Procedures (AMM part 2)
• Fault Isolation Procedures (FIM)
• Wiring Diagrams (WDM)
• System Schematics (SSM)
• Illustrated Parts Data (IPD/IPC)
• Service Bulletins (SB)

Criteria For Selection:

- Instructions for Continued Airworthiness
- Level of customization
- Frequency of revision
- Volume of data
- Linkage to other manuals
- Available Today in SGML
- S1000D Support

Mark Eaton
S1000D Implementation in Boeing
S1000D Implementation by Pratt & Whitney

Alison Johnson

Pratt & Whitney
A United Technologies Company
Pratt & Whitney Authoring
In S1000D Version 4.0

— Commercial Programs:
  • Using tagging to filter content
  • Reusing data across manuals / engine models
  • Integration with MRO’s
  • Multiple delivery platforms (Portal/XML/DVD)
— Military Programs:
  • Will be authoring in version 4.1 when software is capable
  • Partner and Supplier independent S1000D databases
  • Reusing data across manuals

Other S1000D Activities:
- Business Rules project completed – over 700 BRs created
- Currently investigating conversion of legacy ATA manuals to S1000D
- New programs will be authored in S1000D
S1000D Implementation
by Airbus

Dr. Andreas SCHÜTZE

AIRBUS
Application of S1000D

Common Information Repository (CIR) Enhancements:
- Incremental update
- Documentary Info CIR...

Information Code and Standard Numbering System extensions

Business enhancements (IPD, Service Bulletin, CMM, ...)...

Configuration Management (A/C Table, SB List, ...)

Significant Data

Technical Information Repository (TIR)

Business (Fault Symptom, Wiring, Schedule Maintenance, ...)
A350 XWB: Rationale for S1000D

Reduce info redundancy & increase data consistency

• Common Information Repositories
• Simplified access
  - FIN (Funct. Item Number) / EIN
  - Parts information
  - Configuration data (Aircraft table, Criteria list,...)
• Data handling & loading
  - Filtering, sorting, calculation
  - MIS / Inventory systems

3) Data integration from Extended Enterprise

Direct Integration of equipment data:
• during authoring
• in data assembly phase
• into viewer database

4) Data delivery to customers

• Data integrated into viewer (AirN@v)
• Raw data for content management and further processing
• Incremental delivery
  - Reduced volume of delivered data
  - Reduced processing time
  - Improved update reactivity

Version 4.1 for A350XWB Technical Data

Dr. Andreas SCHÜTZE
S1000D Implementation in Airbus
S1000D for A350 XWB

Business Data Modules
- Supporting Line Maintenance process
- System Descriptions
- Maintenance procedures
- Fault Isolation
- Maintenance Illustrated Part Data
- Structural Repair IPD
- Non Destructive Testing
- Structural Repair Instructions
- Wiring Diagrams
- Schematic Diagrams
- Electrical Standard Practices
- Mechanical Standard Practices

Configuration data
- Applicability Cross Reference Table, Product Cross Reference Table, Condition Cross Reference Table

Common Information Repository
- Transverse information used by Business Data Modules
- Access and navigation means
  - CIR Breakdown
  - CIR FIN and CIR CB
  - CIR ZONE and CIR ACCESS
  - CIR Warning and Caution (W/C)
  - CIR PART
  - CIR ENTERPRISE
  - Pseudo CIR Fault Reporting and Wire

CSDB = source for viewer and data exchange

Dr. Andreas SCHÜTZE
S1000D Implementation in Airbus
S1000D Implementation by Embraer

Cristina Bittencourt
EMBRAER is Conducting S1000D Studies for a Future Program Implementation

Focus on:
- Evaluate Software Providers versus Embraer Proprietary System
- Difficulties of Implementation
- Define the Best Way

Development a POC With Software Suppliers

Define Project Strategy

TBD

Future

2007

ATA CAWG
hosted by Embraer

2005

ATA CAWG Participation
S1000D Implementation in Civil Aviation

• Any Questions for our Panel?