S1000D Users Forum

“S1000D: Realizing the Benefits of Integrated Logistics Support”

October 12- October 15, 2009
Crown Plaza Hilton Head Resort, Hilton Head, SC, USA

Civil Aviation Working Group – Status and Future
Dr. Andreas Schütze
Airbus
Contents

1. ATA objectives
2. CAWG charter and organization
3. Purpose of civil aviation data exchange standards
4. Civil aviation specifics
5. Integration of civil aviation requirements into S1000D
6. CAWG future
ATA Objectives

Next Generation S1000D (Includes Civil Aviation Requirements)

ATA
AIA
ASD

Spec 2000
FDE
ATA Data Model
iSpec 2200

Civil Aviation Drivers
The ATA Civil Aviation Working Group (CAWG) is one of the ATA e-Business Integration Working Groups and is administered by the ATA. CAWG reports to the ATA e-Business Steering Group (ESG) and indirectly to the ASD/AIA/ATA S1000D Steering Committee (SC).

The purpose of the CAWG is to analyze and submit the necessary changes to enable S1000D to be the worldwide accepted future Technical Data exchange standard for the Civil Aviation industry.

The scope of the CAWG activity includes the scope of ATA iSpec 2200, excluding Flight Operations. The CAWG activity considers previous work done on ATA iSpec 2200 DTDs, ATA Future Data Exchange (FDE) and the ATA Data Model.
CAWG Charter and Organization

• The responsibilities of the CAWG are:
  – To conduct a comprehensive analysis of similarities and differences between S1000D and ATA iSpec 2200 / ATA Data Model / Future Data Exchange (FDE) requirements.
  – To reach consensus within the global civil aviation community on proposed changes to S1000D.
  – To introduce proposals from the global civil aviation community for modifications to S1000D to meet civil aviation requirements.
  – To facilitate acceptance of civil aviation requirements within the S1000D change proposal process and committees.
  – Within S1000D, many requirements are project-specific. CAWG will develop and maintain an ATA specification describing the civil aviation business rules for implementation of S1000D (civil aviation industry to be understood as a “project” in the sense of S1000D).

• The final result of the CAWG activity must be a well-defined and accepted subset of S1000D and civil aviation business rules to allow this new exchange standard to be used in a consistent manner throughout the civil aviation industry for creation, exchange and processing of Technical Data.
CAWG Charter and Organization

ASD - CPSC
Customer & Product Support Committee

AIA
Product Support Committee

ATA
ATA e-business

Defence WG (DWG)

The Council

The Steering Committee

Civil Aviation WG (CAWG)

Web Site WG (WSWG)

Electronic Publications WG (EPWG)

Production and Publishing WG (PPWG)

XX Task Team (XXTT)

XX Task Team (XXTT)

XX Task Team (XXTT)

XX Task Team (XXTT)

Parent org
Standing WG
Task Team
CAWG Charter and Organization

CAWG
- Chair: Andreas Schütze
- ATA Admin: Paul Conn

Business Project Team
- Chairs: Susan Crumrine, Jowene Prouty-Black
- Scope: generic business requirements

Service Bulletin Project Team
- Chair: David Nilsson
- Scope: Service Bulletin (busin. requ. & schemas)

Configuration Management Project Team
- Chair: Kevin Hendriks
- Scope: Conf. Management (busin. requ. & schemas)

Component Maintenance Manual Project Team
- Chairs: Tony Hildebrandt, Christian Balanant
- Scope: CMM (busin. requ. & schemas)

Technical Project Team
- Chair: Audrey Fauconnier
- Scope: technical subjects

Maintenance Requirements Project Team
- Chair: Marv Skelton
- Scope: Maintenance Requirements (busin. requ. & schemas)

Wiring Project Team
- Chair: Herve Le Flecher
- Scope: Wiring (busin. requ. & schemas)

Graphics & Multimedia Project Team
- Chair: Stuart Galt
- Vice-Chair: Jon Westbrook
- Scope: busin. requ. related to graphics & MM
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1. ATA objectives
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Purpose of Civil Aviation Data Exchange Standards

"Consultation" solutions

IETP

PDF

"Consultation only" airlines

Manufacturer

"Data processing" airlines

Raw Data Delivery

Consultation

Content Management

Data Loading

SAP

ULTRA
Purpose of Civil Aviation Data Exchange Standards
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Civil Aviation Specifics: Lifecycle Support

• TD (Technical Data) support during lifecycle of 50 years including:
  – Fleet upgrades (modifications, conversions)
  – Changing regulatory requirements etc.

• Requires follow-up of as-maintained configuration through reporting from airlines

→ Induces complex requirements related to Applicability, Configuration Reporting, Service Bulletins

→ Standards should be as stable as possible
  → downwards compatibility
Civil Aviation Specifics: Support of Multiple Aircraft Programs - OEM

- Same TD systems are used to support “old” and “new” data exchange standards for out-of-production, in-production and future A/C programs
- Migration to new standard versions must be possible (consistency, system cost) which sometimes requires data migration
- Internal systems (TD authoring and production) are designed to be independent of standards

→ Standards should be as stable as possible
→ downwards compatibility
• The same airline engineers & mechanics use TD of multiple programs from different OEMs.

• Current TD is iSpec 2200 based. Future A/C programs will be in S1000D.

→ TD Business content structure and presentation should stay the same or very similar to support the transition, e.g. rich Job Setup info, semantic tagging
Civil Aviation Specifics: Data Exchange Process

- Future data delivery will be:
  - on-line for download (for new A/C programs this will be the prime delivery channel)
  - for loading on-board of the aircraft

- This implies keeping the amount of data (to be exchanged) as small as possible to reduce download or loading time

→ Requirement for incremental update of Technical Information Repositories (TIR) and externalization of applicability
Civil Aviation Specifics: Data Processing by Airlines

• Requires features within the standard that may be not necessary (or may even be disturbing) in case of use for publication only:
  – Consistency in data definitions and structures for all civil aviation S1000D projects → civil aviation business rules
  – Avoidance of data redundancy introduced by the TIR concept
  – Precise semantic data tagging to be able e.g. to load data into databases or develop specific functions in IETMs like links to A/C systems
  – Incremental update to ease revision management (if not, increment has to be produced by airline before data processing)
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Integration of Civil Aviation Requirements into S1000D

TIR Enhancements
- incremental update
- applic externalization
- Supply TIR
- Documentary Info TIR...
- Container-Alternate extens.
- IC and SNS extensions
- Multimedia enhancements
- Generic IPD
- Service Bulletin enhancements
- CMM enhancements
- Fault enhancements...

Configuration Management
- (Applicability, A/C Table, SB List, …)
- Significant Data
- Technical Repository
- Business (Fault Symptom, Wiring, Schedule Maintenance, …)

Applicability Reengineering
- COC
- Wiring

S1000D

ATA

iSpec2200

V 2.2

V 2.3

V 3.0

V 4.1
Integration of Civil Aviation Requirements into S1000D

CAWG
- Chair: Andreas Schuetze
- ATA Admin: Paul Conn

Business Project Team
- Chairs: Susan Crumrine, Jowene Prouty-Black
- Scope: generic business requirements

Service Bulletin Task Team
- Chair: David Nilsson
- Scope: Service Bulletin in S1000D

Generic IPD Task Team
- Chair: Kevin Hendricks
- Scope: Generic IPD

Component Mainten. Publications Task Team
- Chairs: Tony Hildebrandt, Christian Balanant
- Scope: Component Mainten. Publication

TIR Task Team
- Chair: Audrey Fauconnier
- Scope: TIR concept

Maintenance Requirements Project Team
- Chair: Marv Skelton
- Scope: Maintenance Requirements (busin. requ. & schemas)

Wiring Project Team
- Chair: Herve Le Flecher
- Scope: Wiring (busin. requ. & schemas)

Multimedia Task Team
- Chair: Ian Proctor
- Scope: Multi Media in S1000D
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CAWG Future

• Vast majority of civil aviation requirements implemented in S1000D with issue 4.1
• Next: publication of civil aviation business rules (in accordance with S1000D issue 4.0.1)
• New project: Mapping from iSpec 2200 to S1000D
• Ongoing in the future:
  – Maintenance of civil aviation business rules
  – Representation of civil aviation community in S1000D organization