

S1000D Users Forum 2010

What's new in Issue 4.1?

**September 27 - September 30, 2010
Aerostar Hotel, Moscow, Russia**

***Carl Wilén
Saab AB***



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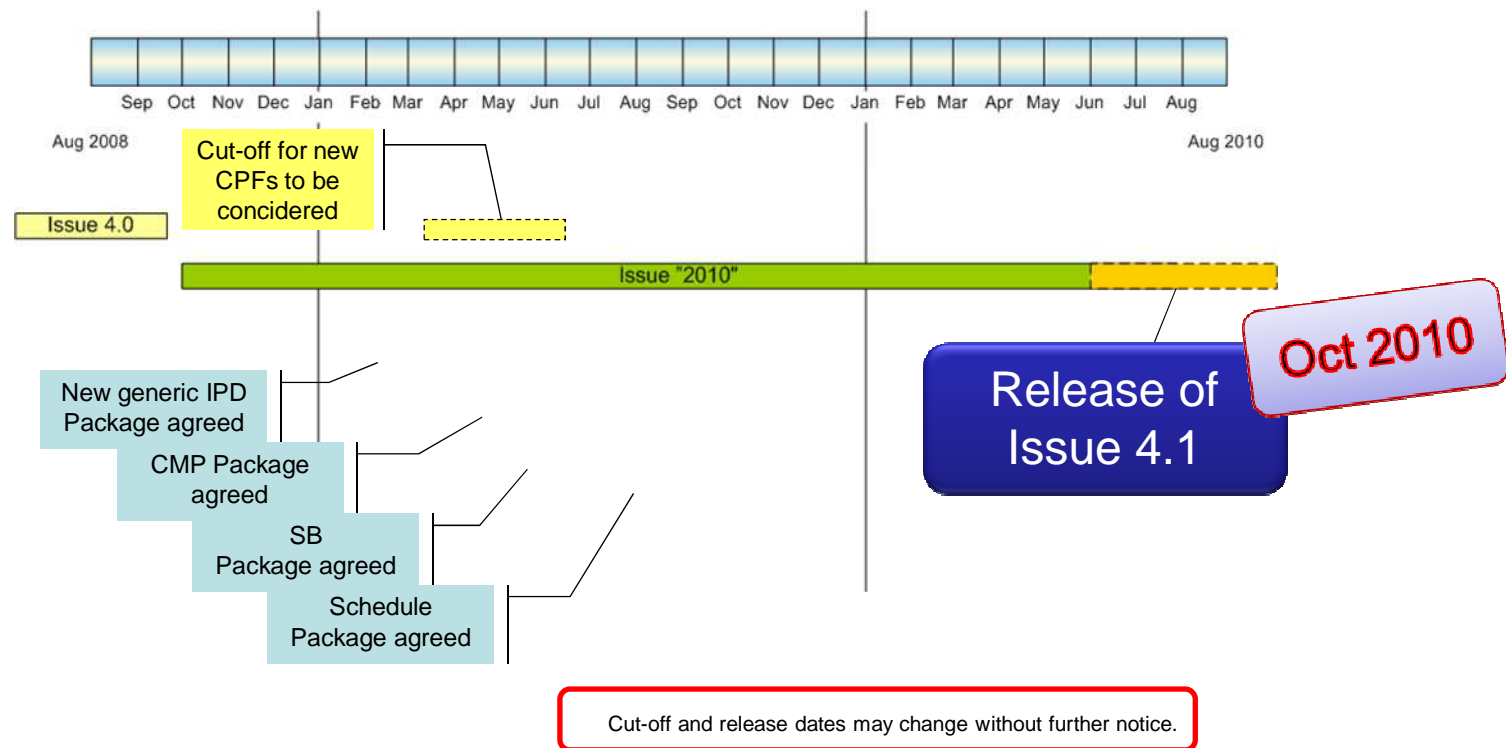


Roadmap

Council meeting – Dec 2008



Preliminary draft plan Iss "2010"





Roadmap

Council meeting – Dec 2008

- Technical information repository - TIR
 - implementation to be explained
 - enhanced functionality
- The **Four packages**
 - SB Service Bulletins
 - CMP Component Maintenance Publications
 - GIPD General IPD
 - MPP Maintenance Planning Publications
- Further enhanced readability
 - Correlation and harmonization of chapters
 - Training – Explanation of use, Examples
 - TIR/Container DM use



Roadmap

Council meeting – Dec 2008

- Definition of S1000D conformance/compliance
- Implementation guide
- Readability and consistency before technical add-ons
 - Chap 5.2.x vs Chap 3.9.5.2.x
- Stability of the spec
- Producer and vendor requirements - second



What happened?

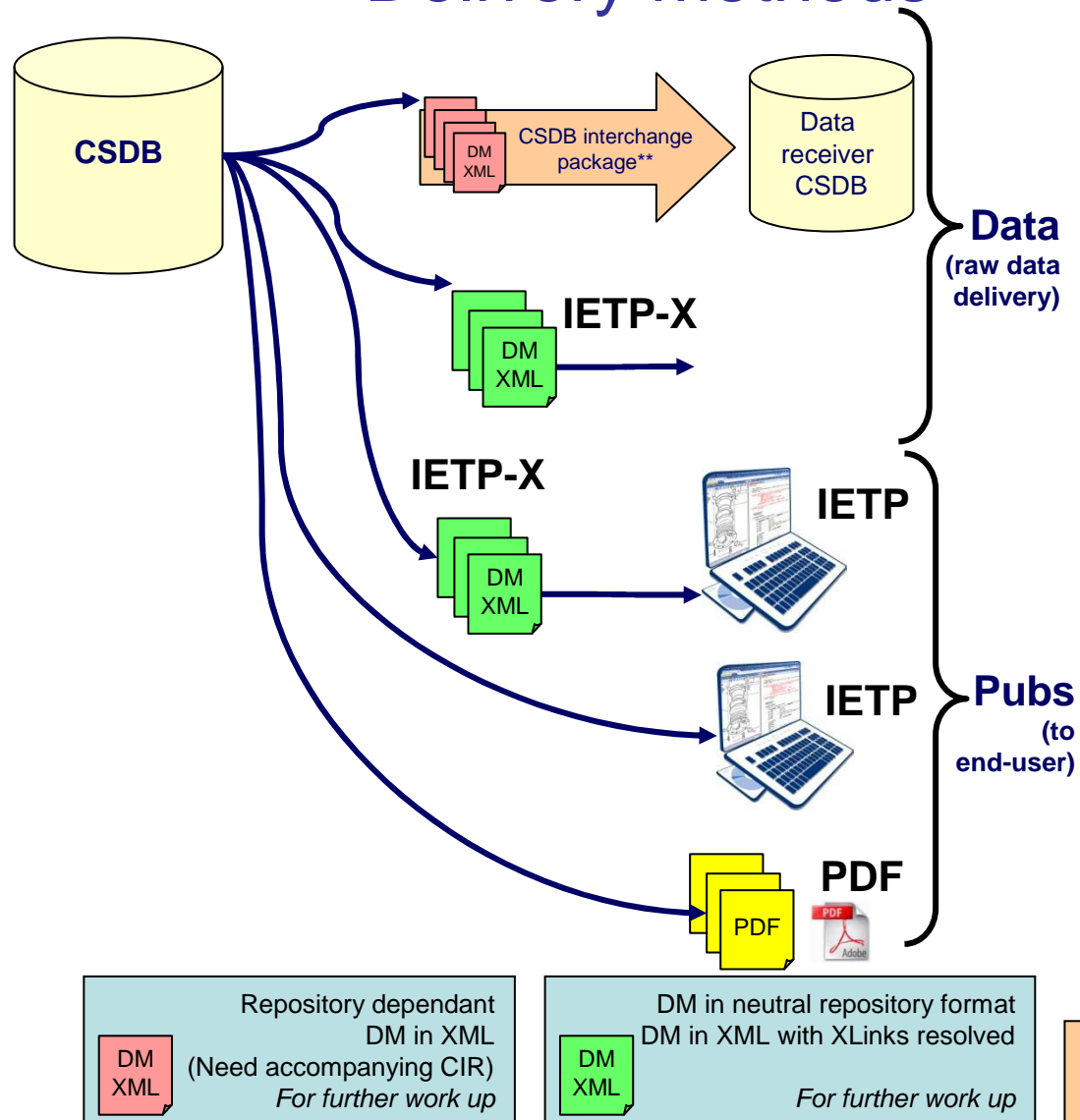


Tech information repository implementation to be explained + Enhanced TIR functionality

- Renamed to CIR – Common Information Repository
- 3 new CIR types
 - Warnings
 - Cautions
 - Externalized applicability annotations
- Incremental update of CIR allowed
- Clarification of self-contained vs repository data modules
 - Publishing vs Data exchange Chap 1.3
- CIR chapter restrucltered and enhanced explanation given in Chap 4.13.1

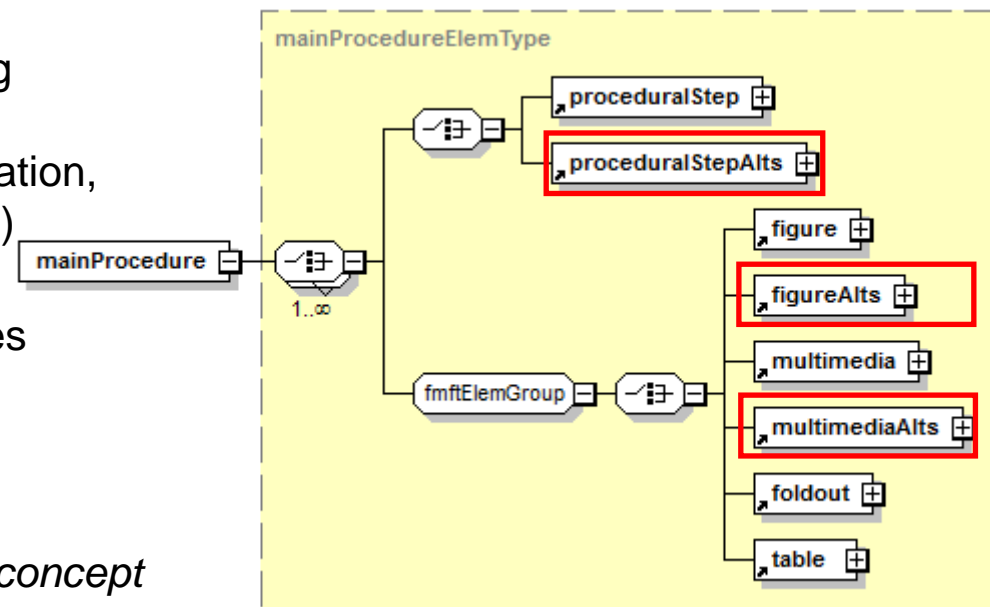


Delivery methods



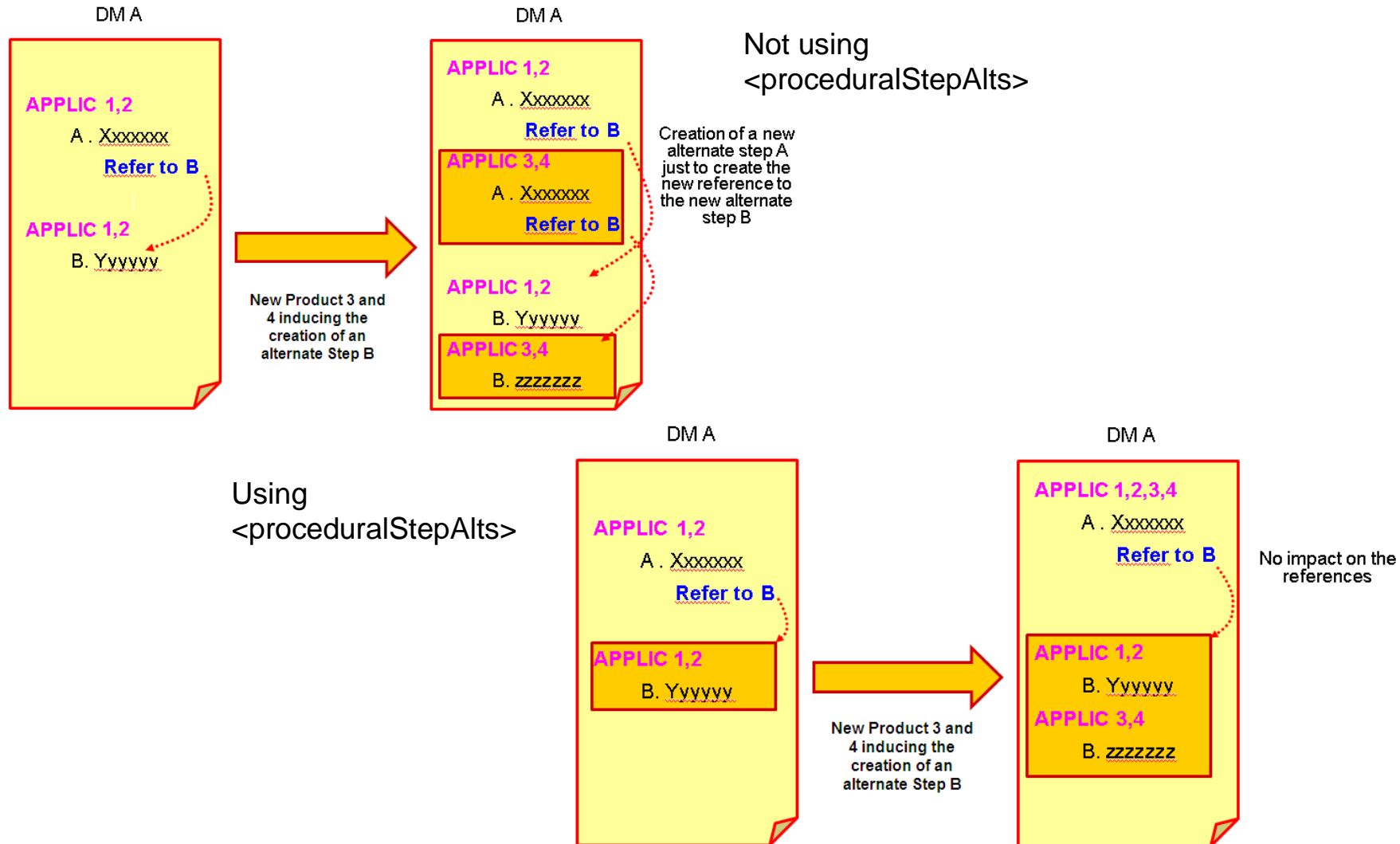
Container **alternates** concept

- The container concept
 - The container data module – the external container (Iss 3.0)
 - The "alternates" - the DM internal "container" (**alternates group**)
- An **alternates group** groups 1 to n alternates (or variants) of the same information
 - each of these alternates being valid for different applicability annotations (product configuration, environment, other conditions)
 - for a given applicability only one (or none) of the alternates is applicable



CPF2007-003AA Container alternate concept

Container alternates concept Example



Benefits

- Referencing an alternates group (rather than a single alternate) has several benefits for data management and referencing purposes:
 - Reduce the configuration dependencies in internal references
 - Control the configuration consistency
 - Ease the numbering of alternates
 - Ease cross-references

The same number (6) is used for the alternates of the step

<proceduralStepAlts>

- 5 Flush the sprockets, the derailleurs, the chain rings and the chain with water.
Note
 If necessary, do the flush procedure again.
- 6 *(Applicable to: Type: Mountain bicycle Model: Mountain storm Version: Mk1)*
 - 6.1 Soak the [Sponge](#) into [Detergent A](#) and water.
 - 6.2 Clean the bicycle with the soaked sponge.
 - 6.3 Flush the bicycle and make sure that all [Detergent A](#) is removed.
 - 6.4 Move the bicycle up and down on its tires to remove all water.
- 6 *(Applicable to: Type: Mountain bicycle Model: Brook trekker Version: Mk9)*
 - 7.1 Soak the [Sponge](#) into [Detergent B](#) and water.
 - 7.2 Clean the bicycle with the soaked sponge.
 - 7.3 Soak the [Sponge](#) into [Detergent A](#) and water.
 - 7.4 Fully clean the bicycle with the soaked sponge.
 - 7.5 Flush the bicycle to make sure that all detergents are removed.
 - 7.6 Move the bicycle up and down on its tires to remove all water.
- 7 Lubricate the bicycle (refer to [S1000DBIKE-AAA-DA4-10-00-00AA-241A-A](#)).

Cross-references goes to the right place

No holes in the numbering when filtered for a specific applicability



Definition of S1000D conformance/compliance

- When can you call your technical publications S1000D?
- Chap 1.4 will be detailed and split into
 - Chap 1.4.1 - How to tailor for a specific project - Tailoring introduction
 - Chap 1.4.2 - How to tailor for a specific project - Conformance and compliance
- Defines the basic requirements necessary to fulfill, in order to stay in adherence with the specification, when tailoring takes place
- Hold on – Tomorrow the show and dance man Svante Ericsson will perform his famous conformance/compliance act

CPF2007-067S1



The four packages (SB, CMP, GIPD, MPP)

- Service Bulletins
- Component Maintenance Publications
- Generic IPD (an IPD not based on S2000M)
- Maintenance Planning Publication
 - Coordination between S3000L and S1000D



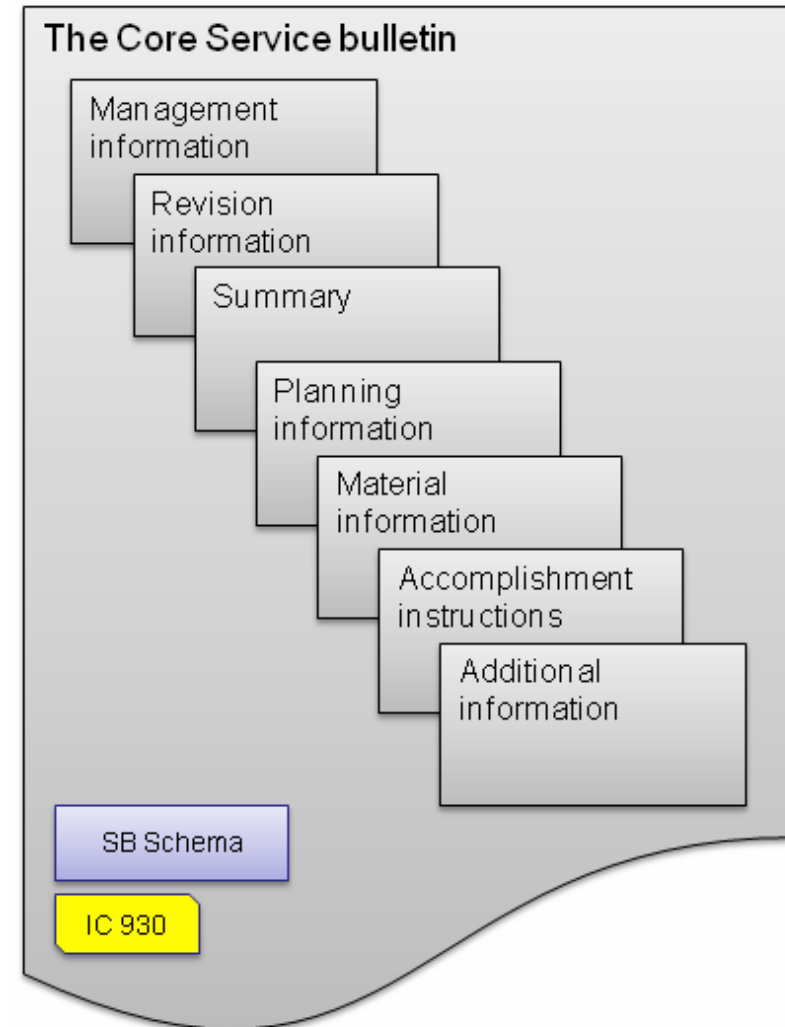
Service bulletins

- The concept for service bulletins in S1000D is being changed :
 - A **new architecture** for delivering a service bulletin
 - Use of **tagged data in XML** in delivering of service bulletins
 - **Enhanced procedural data modules** to support requirements unique to retrofit instructions
- Correct errors and readability problems discovered in Issue 4.0.1
- Implemented changes required for Civil Aviation

Service bulletins The new architecture

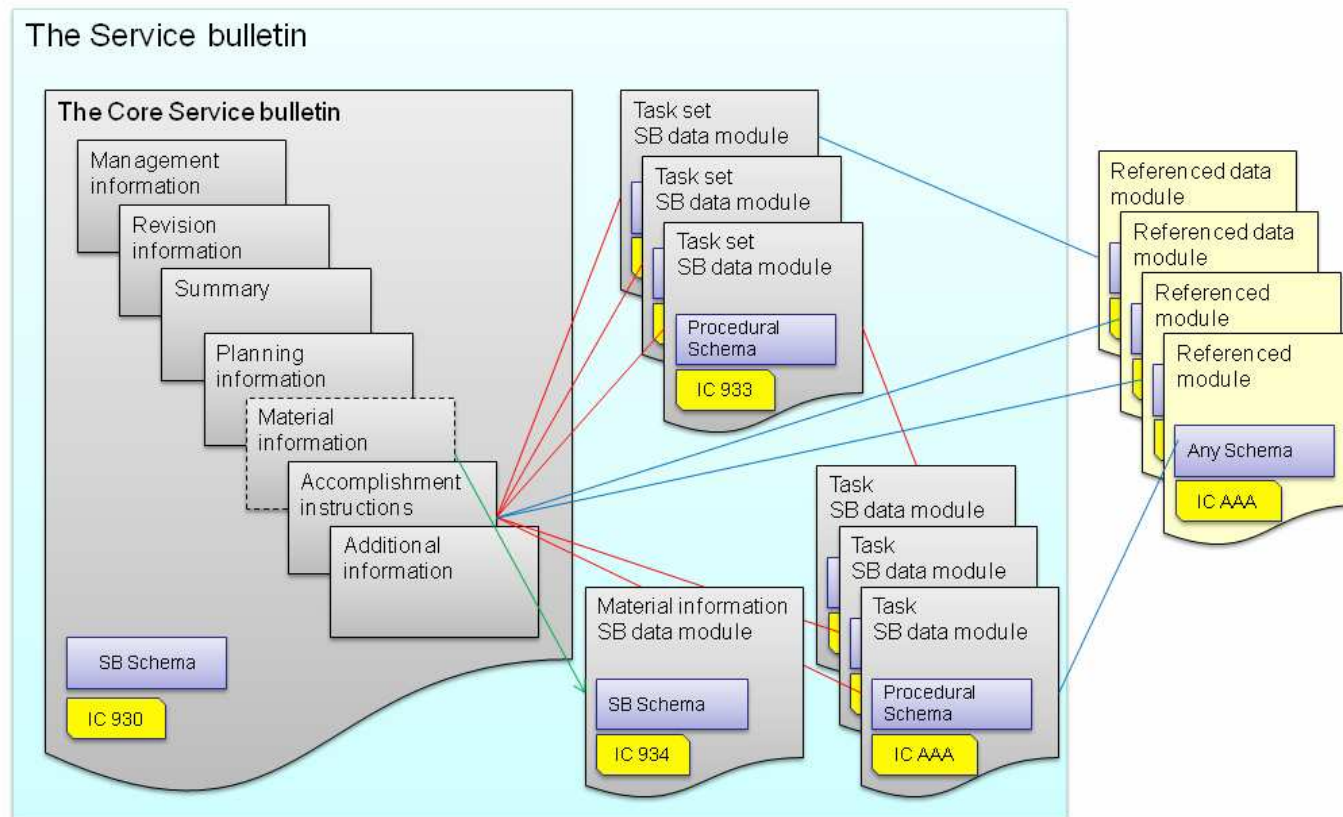
- A new Service bulletin data module type (Schema) has been developed to deliver the core topics for an SB within a single data module

More about SB in a later presentation



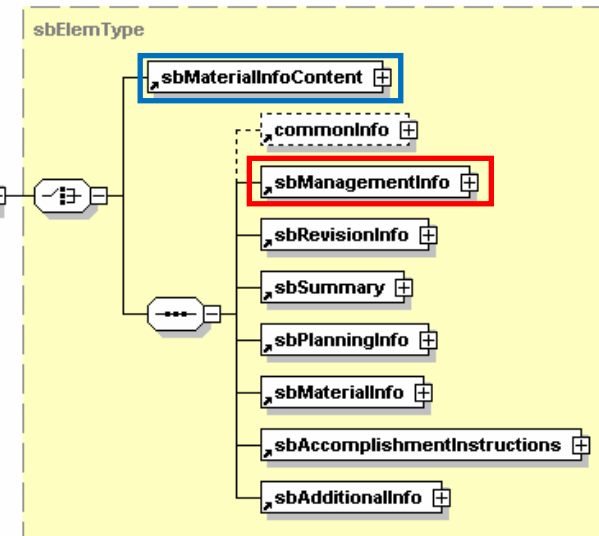
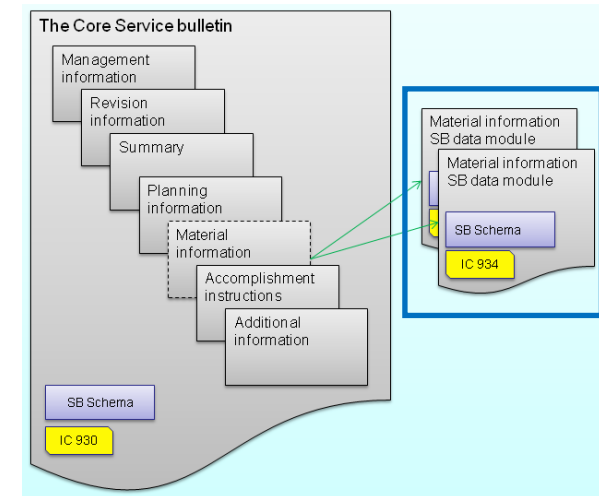
Externalized Material information and Tasks

- To support scalability, **tasks** and **material information** can be externalized to other data modules



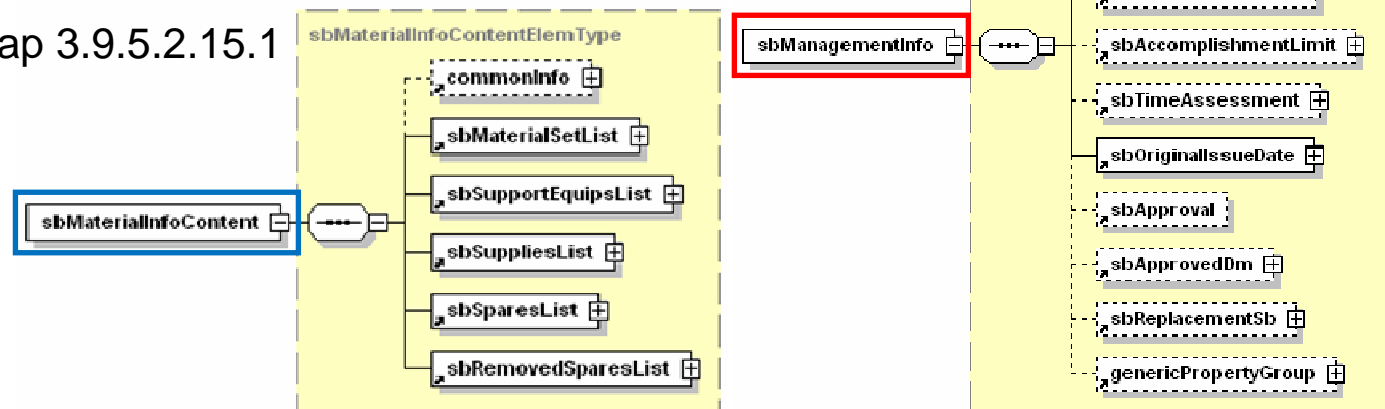
Service bulletins New chapters

- New "concept" based on civil aviation experience
 - Chap 5.2.1.16 Completely reworked
- New Schema
 - Authoring chapters added
 - Chap 3.9.5.2.15 Content section - Service bulletin data module
 - Chap 3.9.5.2.15.1 Service bulletin data module - Management information
 - Chap 3.9.5.2.15.2 Service bulletin data module - Material information



Service bulletins A new Schema

- Improve the richness of tagged data in XML delivery of service bulletins
 - **SB Management information** contains semantically tagged metadata about the service bulletin to allow for better search capability
 - Chap 3.9.5.2.15.1
 - **SB Material information** is semantically tagged to give "smart" information which can be better integrated with other systems
 - Chap 3.9.5.2.15.1





Service bulletins Data module code

A new DMC (new "interpretation")

- YY-Y-**SS-SS**-**NN**-**nn**A-XXXA-Z
 - "**SS-SS**", the system-subsystem/sub-subsystem
 - "**NN**", the unit of assembly, is a sequential number starting from "01"
 - - "**nn**" is the sequential number starting from "01" for all task, task set and material information data modules "included in" the specific core service bulletin
 - XXX, the information code
 - 930 - Service bulletin core data module
 - 933 - Accomplishment procedure - **Task set** data module
 - 934 - Material information data module
 - AAA – Task SB data module where AAA can be any information code
- 931 and 932 only for SB using older issues of S1000D



Component Maintenance Publications - CMP

- No new Schema
 - Use Descriptive, Procedural, Fault isolation, ... Schemas
- "Readability and consistency before technical add-ons"
 - Chap 5.2.1.9 Equipment information Enhanced
 - Support equipment, Training equipment and Component maintenance
 - Gives more detailed guidance and basic rules
 - "must" use Procedural Schema for procedures
 - Chap 5.3.1.4 Common requirements - Component publications New
 - Provides specific guidance for the preparation of a Component Maintenance Publication - CMP

CPF2009-092S1



Generic IPD

- A GIPD Task Team has modified the current parts data Schema adopted for multiple industries
 - No new Schema
- Supports both S2000M and non-S2000M projects
- New and modified elements
 - (M) have become (O) in many cases
- Harmonized element names and structures between the part repository and the IPD

CPF 2009-146S1 Part repository enhancements

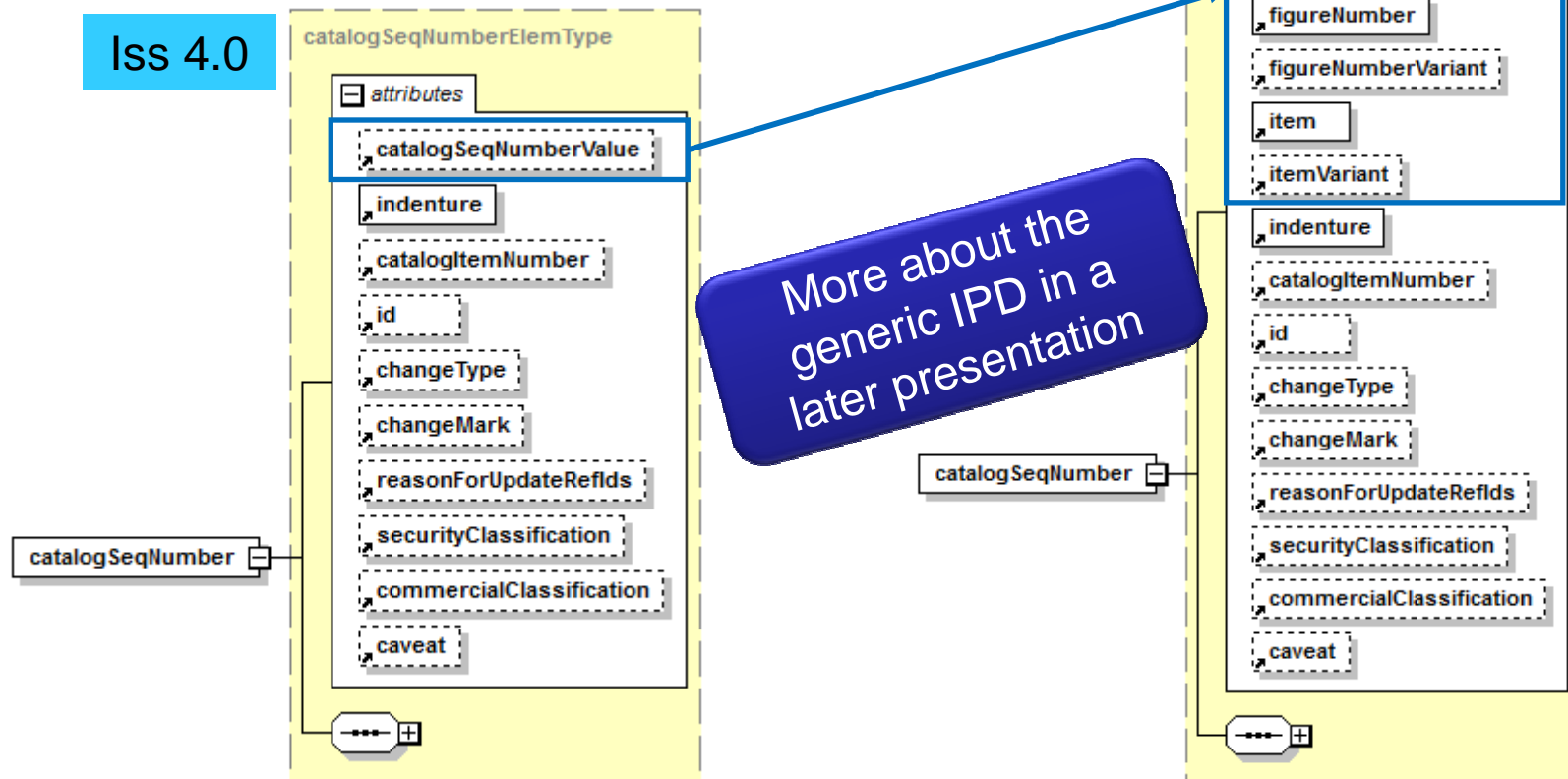
CPF 2009-147S1 Part relationships

CPF 2009-148S1 Part data in IPD

CPF 2009-149S1 Location dependent data in IPD

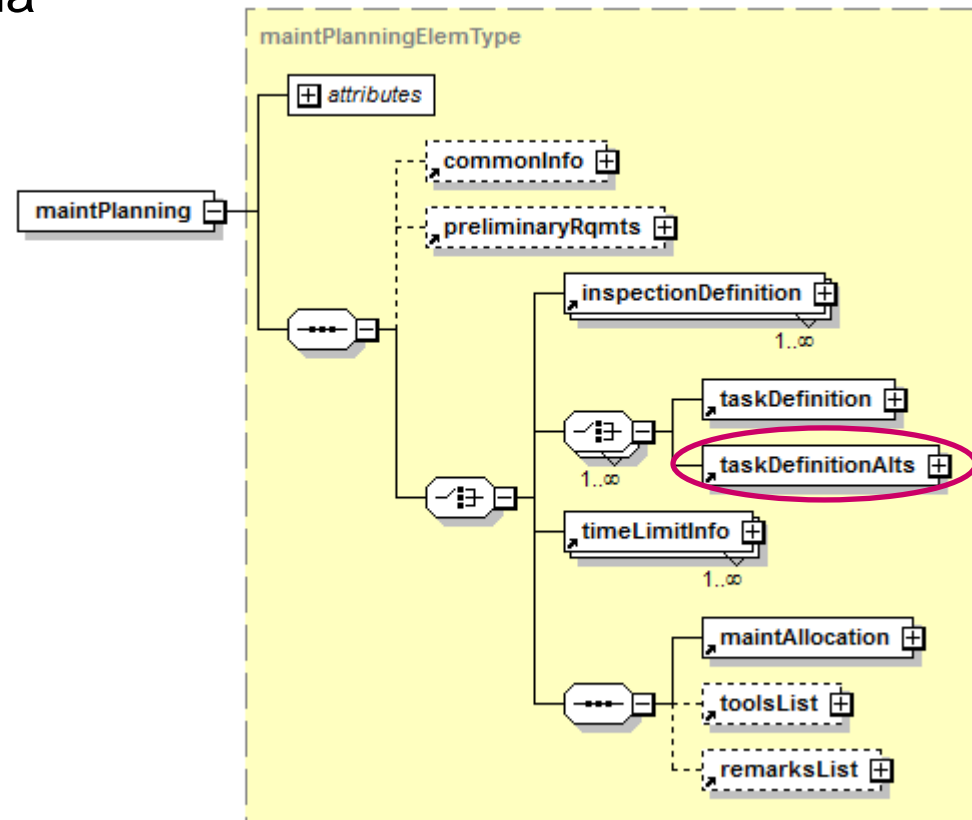
Iss 4.1

- String replaced by a set of attributes



Maintenance Planning Publication

- No big revolution regarding the Maintenance planning Schema
 - mainly an harmonization with the others DM types on dedicated mechanisms
 - applicability
 - warning & caution
 - Common Info Repository linkage





New features and coordination with S3000L

- Updates are as follows within the schema:
 - <exportRegistrationCode> becomes mixed='true'
 - <shortName> added to <functionalItemRef>, <circuitBreakerRef>
 - @functionalItemType is now an enumeration from 'fit00' to 'fit99'
 - @circuitBreakerType is now an enumeration from 'cbt00' to 'cbt99'
 - @internatRefTargetType is now an enumeration from 'irtt00' to 'irtt99'
 - update of <applicRef> and addition of <referencedApplicGroup>
 - <warningsAndCautionsRef> added
 - <catalogSeqNumberRef> modified with a reference to DMC instead of CSN
 - <figureAlts>, <multimediaAlts> added
 - New element <workAreaLocation> to refer zones, access points and work locations and a new <installationLocation>
 - <materielSet>, <supplyRef> added
 - Links from spare & supply to CIR
 - ...
- Coordination between S3000L and S1000D (supported by S1003X)

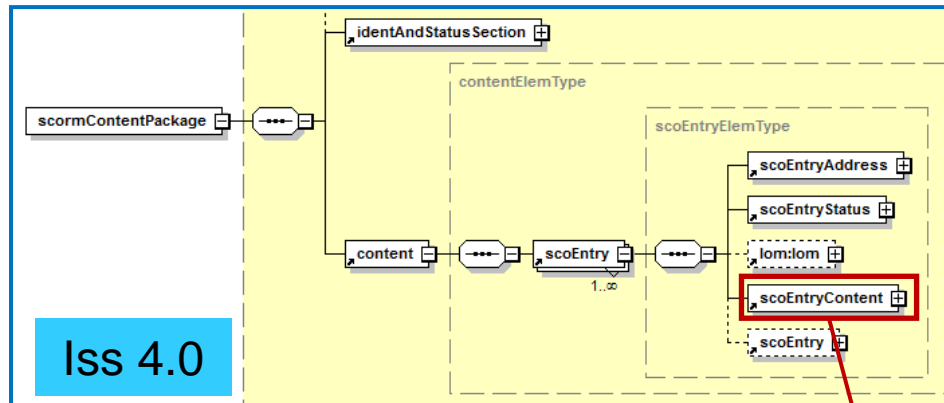
Training/Learning

- SCORM Content Package Module (SCPM) Split (*CPF2009-019S1*)
 - Separate the *structure of the training course* and the *definition of the SCO*s into two different XMLSchema.
 - Allows reuse of SCOs in different training courses without redefining it inside each training course structure definition
- New authoring chapter
 - Chapter 3.9.5.2.18 Content section - SCO content information

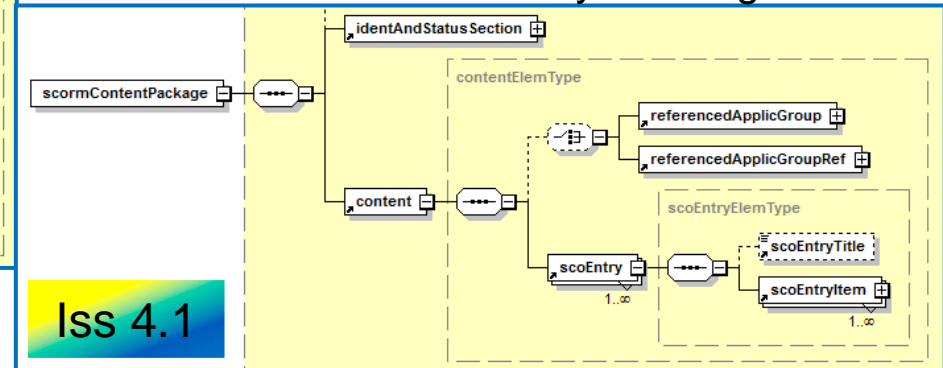
CPF2009-016S1 - Additional Assessment Type within the Assessment Branch

CPF2009-018S1 - Mapping Learn Codes to the Learning Data Module

Training/Learning Old SCORM Content package Schema split

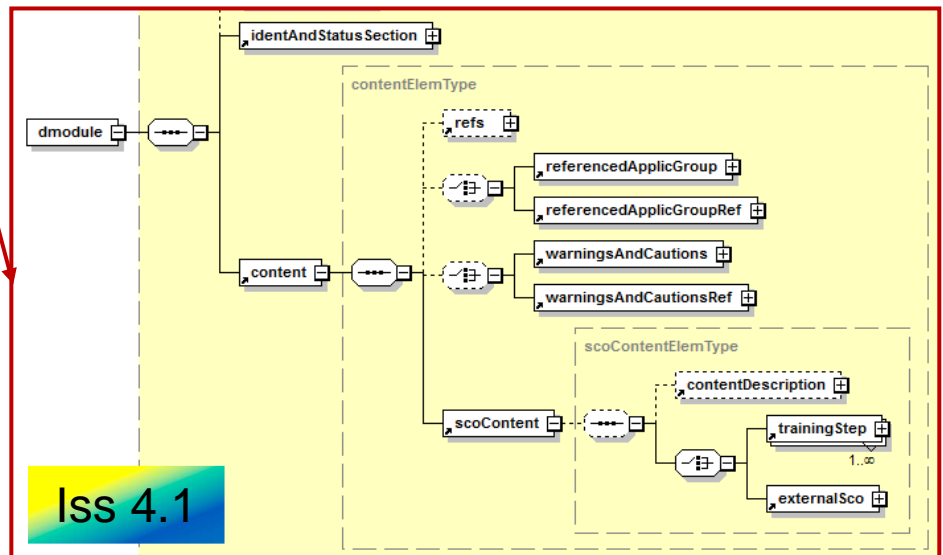


Used only for definition of a *training course structure* and not directly “contain” any learning material



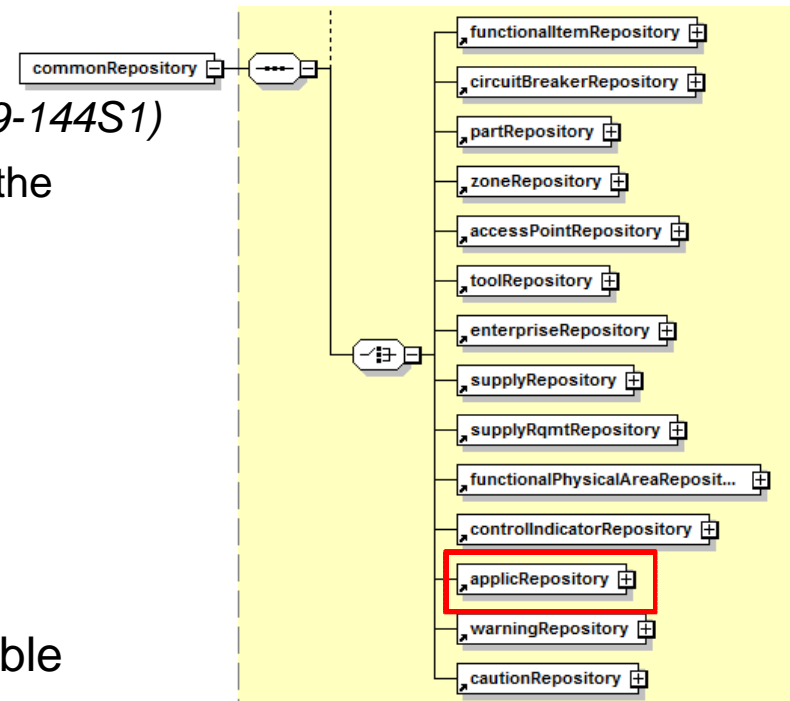
More about Learning/Traning in a later presentation

New element, <trainingStep>, is introduced.



Applicability

- CCT Dependency (*CPF2009-023AA*)
 - Introduces a capability for representing and evaluating dependencies between conditions
 - Service bulletin "B" to be implemented on a product, Service bulletin "A" must first be implemented
- Applicability externalization (*CPF 2009-144S1*)
 - Introduces a new CIR branch that hosts the Applicability statements
 - "Applicability data base" in one place



CCT - Configuration Cross-reference Table

Applicability

- Applicability sharing (*CPF2008-020S1*)
 - Introduces the ability for each data provider to define and maintain its own ACT/CCT/PCT set, and the resultant collection of DMs interact from a content management and IETP rendering perspective
- Key product attributes (*CPF 2009-34S1*)
 - Introduces a method to identify unique “Key” attributes
 - New attribute **productIdentifier** in <productAttribute>
- Applicability obtaining values (*CPF 2009-071S1*)
 - Introduces a method to obtain values for product attributes or conditions from an end-user when those values are not available from the PCT

Applicability

- Applicability data typing (*CPF2009-061US*)
 - As the Applicability functionality has been developed it has become clear that the applicability model is lacking a method of data typing. This lack of data typing at a minimum makes it very difficult to represent applicability statements based on numerical data, and can potentially make processing of numeric applicability statements prone to error.
This CPF introduces a method to overcome this issue.
 - New attribute **valueDataType** in ACT/CCT. Ex "**boolean**", "**string**"
- Guidance for display of applicability statements
(*CPF 2009-072S1, CPF2009-107AA*)
 - Introduce basic guidance and rules to ensure that any display system that must transform S1000D XML into formatted display, will produce consistent results without having to implement complex business logic
 - Where to locate the applicability statement
 - Current issue of S1000D did not clearly **state** (warn) that auto-generated statements could differ between processors
 - To be further detailed in future issues



Applicability Presentation

- Two methods of presentation (just as for Warnings and Cautions)
 - Default - applicability statement "inside" the step/paragraph
 - Alternative - before the step/paragraph (number)
- Preferred presentation of statements:
 - Serial number, individual and ranges
 - "26", "001-100, 103", "001-100, 103"
 - Service bulletins and modifications:
 - Post SB A350-A-25-10-01A-00A-930A-C Issue 002
 - Pre SB J1-A-25-10-04-00A-930A-C
 - Post SB B787-A-36-10-01-00A-930A-C Issue 002, Post SB B787-A-36-10-14-00A-930A-C Issue 001 and Pre SB 787-A-25-10-04-00A-930A-C Issue 001
 - Conditions
 - "Dessert operations"
 - Separators
 - Punctuation [.] [,] and logical expressions "and", "or"



Applicability Presentation

- The overall data module applicability is set to 1-100
- The same XML instance is used for both presentations

Default presentation - Inside

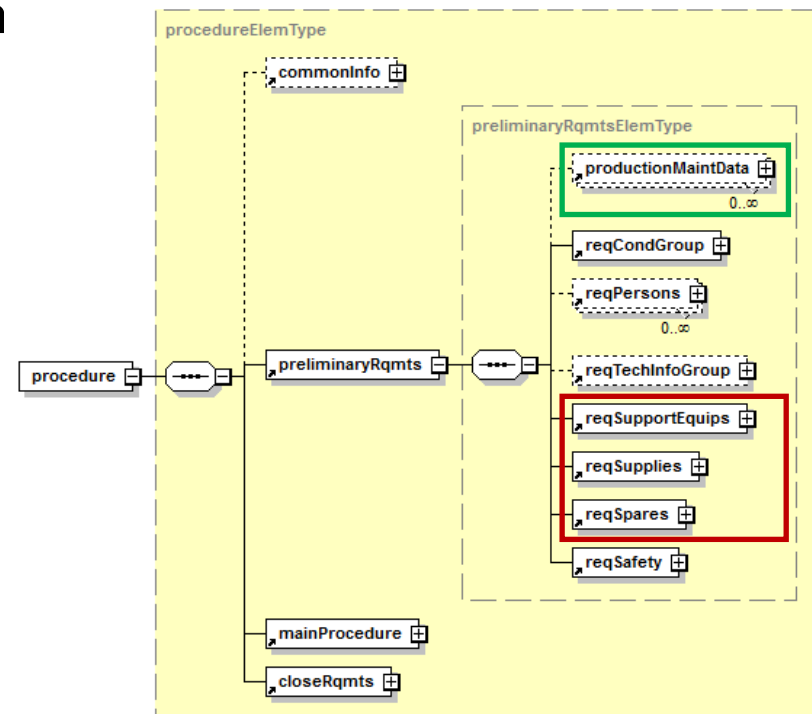
1	Applicable to: 1-50 This step called A is applicable to 1-50	<i>(applic set to 1-50)</i>
1.1	This step called B is applicable to 1-50	<i>(no applic set)</i>
1.1.1	Applicable to: 1-10 This step called C is applicable to 1-10	<i>(applic set to 1-10)</i>
1.1.1	Applicable to: 11-20 This step called D is applicable to 11-20	<i>(applic set to 11-20)</i>
1.1.2.1	This step called E is applicable to 11-20	<i>(no applic set)</i>
1.1.2.2	This step called F is applicable to 11-20	<i>(no applic set)</i>
1.1.2.3	This step called G is applicable to 11-20	<i>(no applic set)</i>
1.1.2.4	This step called H is applicable to 11-20	<i>(no applic set)</i>
1.1.2.5	This step called I is applicable to 11-20	<i>(no applic set)</i>
1.2	Applicable to: 1-50 This step called J is applicable to 1-50	<i>(no applic set)</i>
2	Applicable to: 1-100 This step called K is applicable to 1-100	<i>(no applic set) - (This is inherited from the DM applic)</i>

Alternative presentation - Before

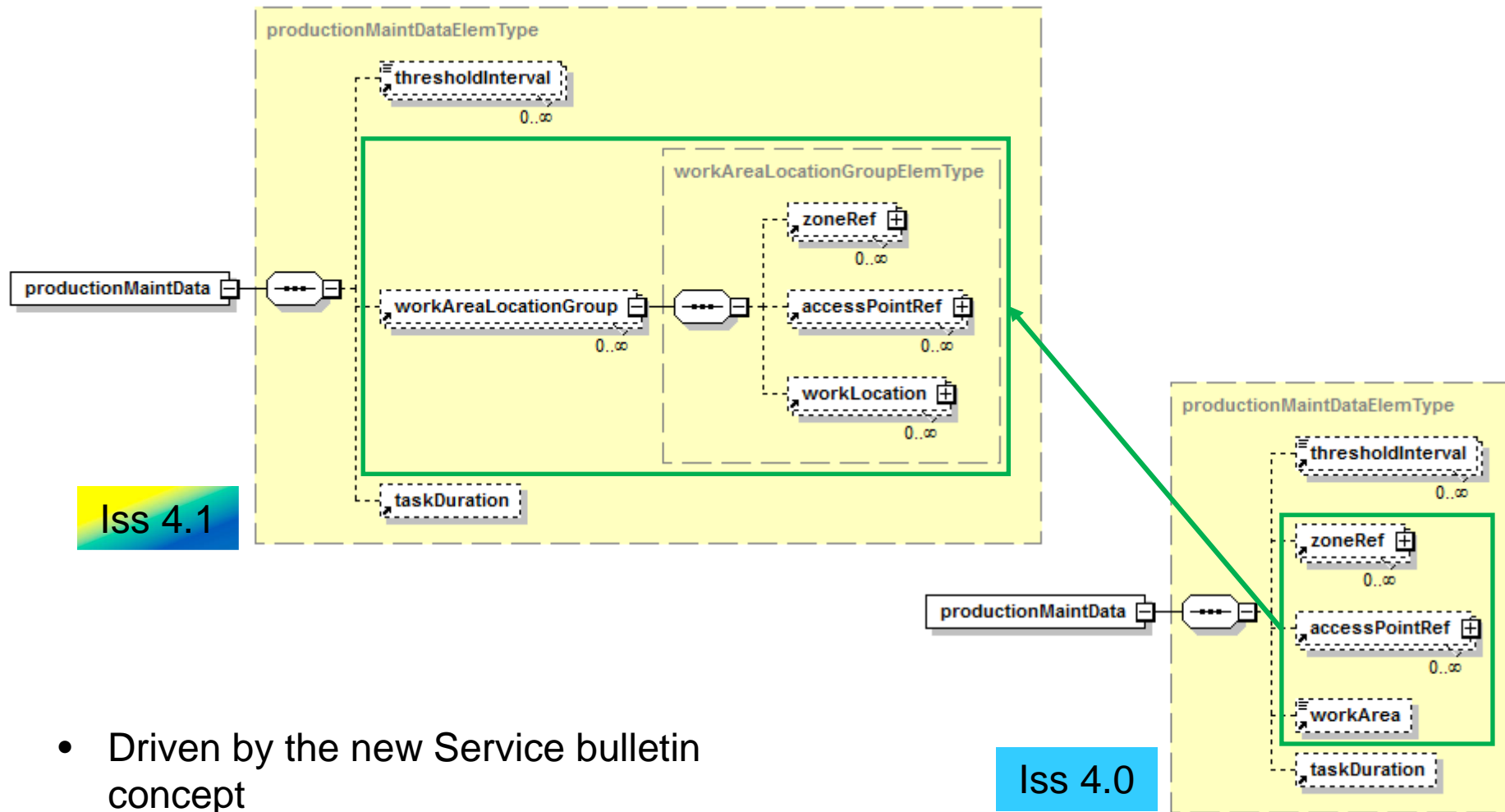
Applicable to: 1-50		
1	This step called A is applicable to 1-50	<i>(applic set to 1-50)</i>
1.1	This step called B is applicable to 1-50	<i>(applic set to 1-50)</i>
Applicable to: 1-10		
1.1.1	This step called C is applicable to 1-10	<i>(applic set to 1-10)</i>
Applicable to: 11-20		
1.1.2	This step called D is applicable to 11-20	<i>(applic set to 11-20)</i>
1.1.2.1	This step called E is applicable to 11-20	<i>(applic set to 11-20 or inherited)</i>
1.1.2.2	This step called F is applicable to 11-20	<i>(applic set to 11-20 or inherited)</i>
1.1.2.3	This step called G is applicable to 11-20	<i>(applic set to 11-20 or inherited)</i>
1.1.2.4	This step called H is applicable to 11-20	<i>(applic set to 11-20 or inherited)</i>
1.1.2.5	This step called I is applicable to 11-20	<i>(applic set to 11-20 or inherited)</i>
Applicable to: 1-50		
1.2	This step called J is applicable to 1-50	<i>(applic set to 1-50 or inherited)</i>
Applicable to: 1-100		
2	This step called K is applicable to 1-100	<i>(This is inherited from the DM applic)</i>

Preliminary requirements

- Most changes initiated from the Service bulletin Task Team
 - New **<workAreaLocationGroup>**
 - Enhanced **<reqSupportEquips>**, **<reqSupplies>**, **<reqSpares>**
- **<shortName>** added in parallel with **<name>**
 - Still some **<shortNames>** missing



Preliminary requirements <productionMaintData>



- Driven by the new Service bulletin concept

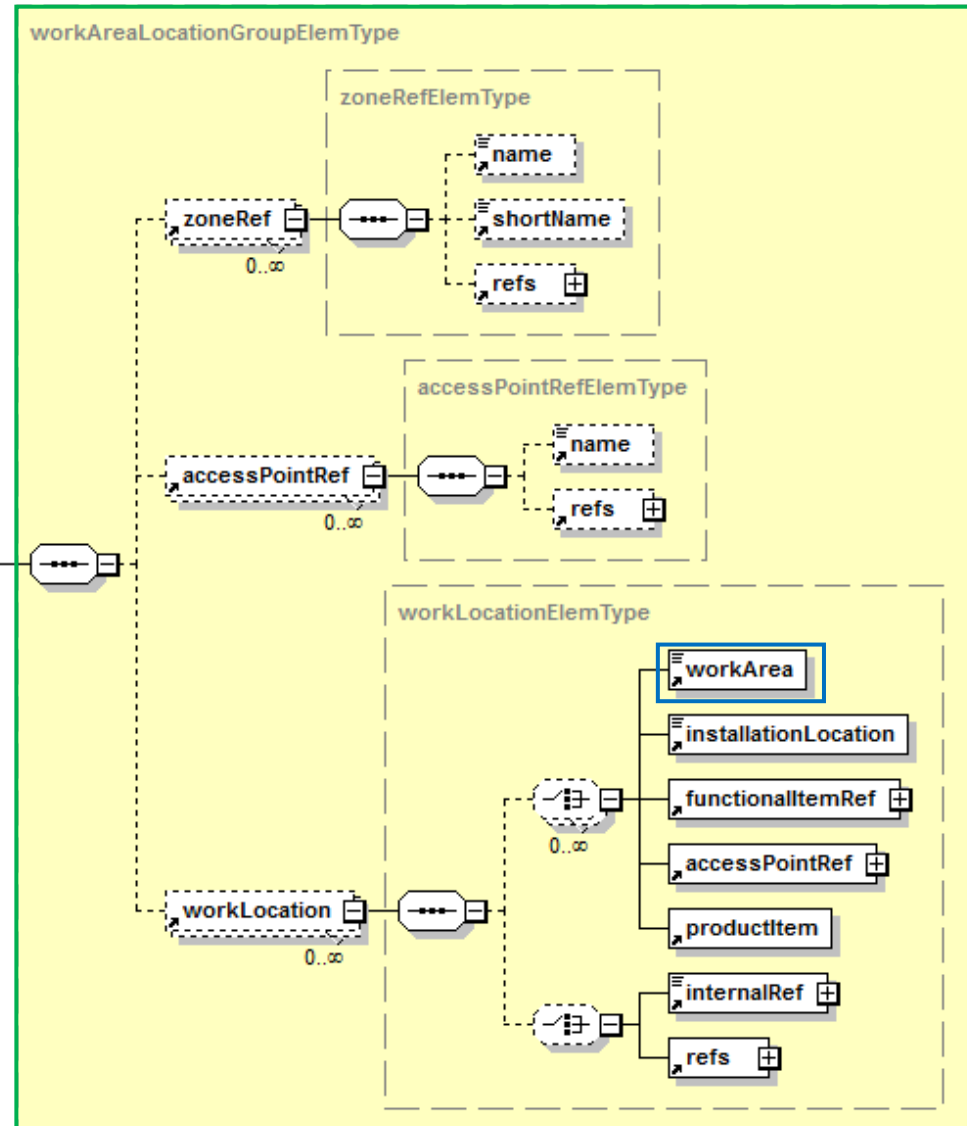
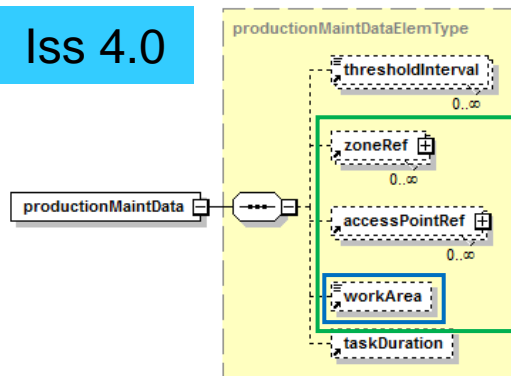
Preliminary requirements <workAreaLocationGroup>

Iss 4.1

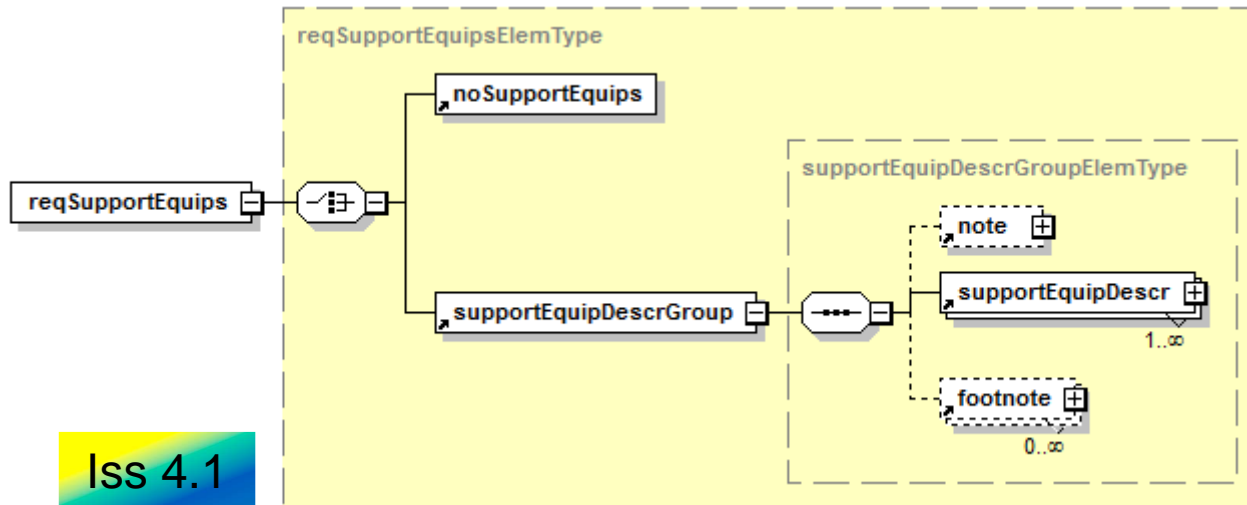
- Driven by the new Service bulletin concept
- "New" definitions
 - work area - The location or area where work is accomplished
 - zone - The global geographical localization of an item on the Product



Iss 4.0

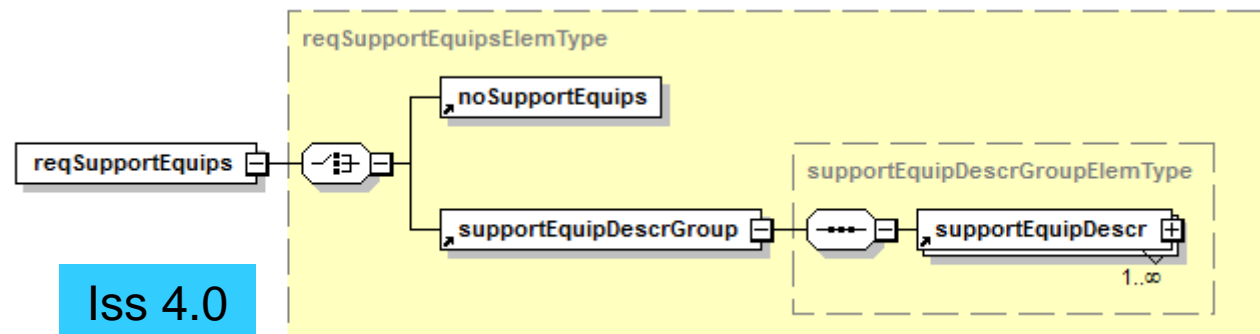


Preliminary requirements <reqSupport Equip>



Iss 4.1

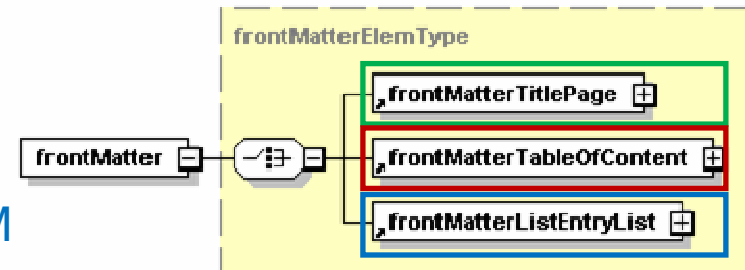
- Driven by the new Service bulletin concept
- The same applies to
 - <reqSupplies>
 - <reqSpares>



Iss 4.0

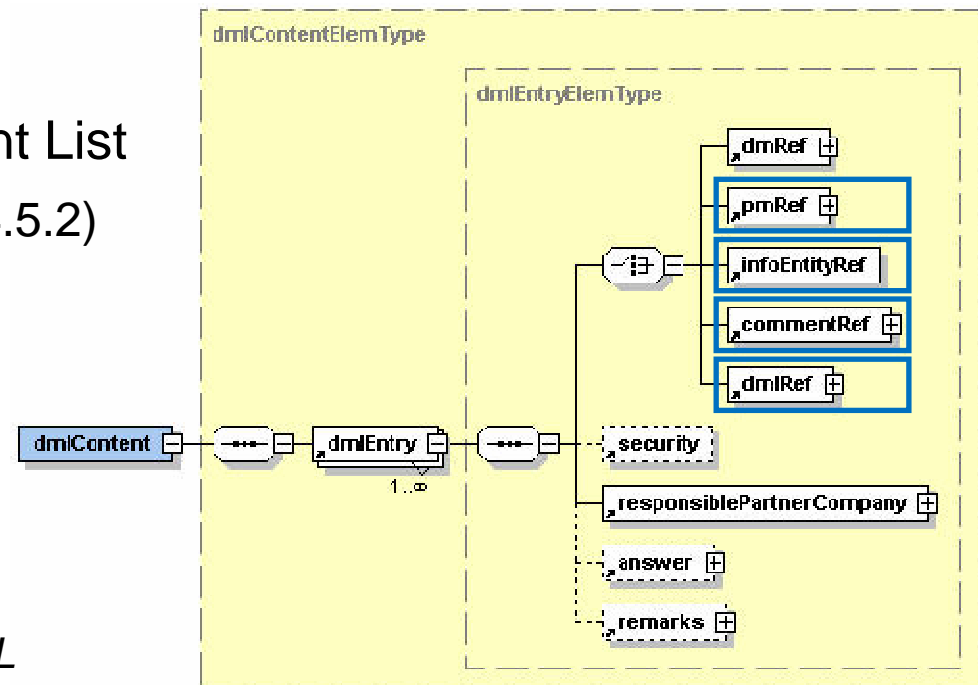
Front matter

- A new Front matter Schema
 - Title page - TITLE
 - Table of contents - TOC
 - List of effective pages - LOEP
 - List of effective data modules - LOEDM
 - Highlights - HIGH
 and
 - publication lists for the List of applicable publications
- Support minimal manual authoring and in most cases support auto generation of front matter data modules
- Designed to **derive basic information**, such as issue information and table of content entries **from a source publication module**, the publication module defining the Publication in focus



Enhanced DMRL

- Updated Schema to include
 - Publications - <pmRef>
 - Information objects - <infoEntityRef>
 - Comments - <commentRef>
 - Other DMRL - <dmlRef>
- Renamed to
Data Managment Requirement List
- Chap 4.5 only (no Chap 4.5.1/4.5.2)



CPF2007-015SE PM in DML

CPF2005-008GB Changes to CSL-DMRL



Further enhanced readability

Subject index

- New Chap 9.2.3 Subject index (*CPF2004-034US Business rules index*)
 - Provides an index of subjects defined/described by S1000D.

access illustration

Definition/description in [Chap 3.9.4](#) "Authoring - Front matter"

Related chapters: Chap 4.9.1, Chap 4.9.3, Chap 4.9.5, Chap 5.3.1.1, Chap 6.4.1, Chap 7.4.2, Chap 8.4.1, Chap 8.4.2, Chap 9.2

zone repository

Definition/description in [3.9.5.2.11.4](#) "Common information repository - Zones"

Related chapters: Chap 3.9.5.2.11

Zoning and zoning information

Definition/description in [Chap 3.4](#) "Information generation - Zoning and access"

Related chapters: Chap 1.3, Chap 3.9.5.2.1.9, Chap 3.9.5.2.1.10, Chap 3.9.5.2.7, Chap 3.9.5.2.11.4, Chap 3.9.5.2.14, Chap 5.2.1.4, Chap 5.2.1.6, Chap 5.2.1.14, Chap 5.2.2.5, Chap 5.2.3.1 thru Chap 5.2.3.5, Chap 5.3.1.2, Chap 8.2.5



And more (outside the listed reqmts from the Council)

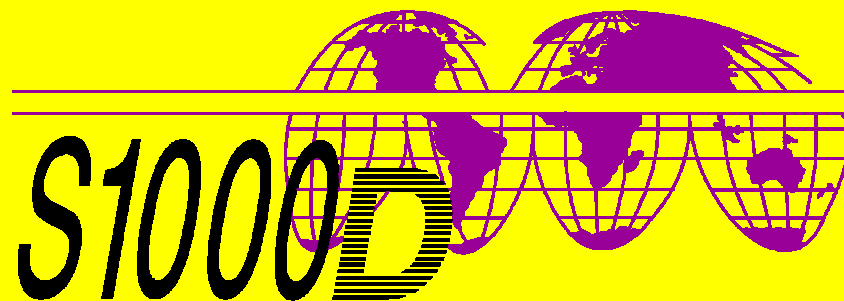
- New and updated Information codes
 - information codes (CXX) for Computer Systems, software & data (*CPF2008-033US*)
 - NAVSEA Info Codes (13 new) (*CPF-2008-018US*)
 - New and updated definitions
 - Zone, Access point Work area harmonized between chapters (*CPF2009-168S*)
 - Material/Materiel (*CPF2010-002S1*)
 - Classification of support equipment (*CPF2010-010SE*)
- New system
 - Eg New Fuel cell system 85 (*CPF2009-008AA*)
- Errata included (some x-hundred editorials left over from Iss 4.0/4.0.1)



Issue 4.1

- S1000D now supports the major Civil Aviation requirements
 - Has been an evolving process, beginning with Issue 2.3, and now culminating with Issue 4.1.
- The Council's directives have been fulfilled
- Issue 4.1 is based on
 - approx 140 CPFsand
 - a lot of hard work made by experienced people from ASD, AIA and ATA member companies and their customers

**International specification for
technical publications**
utilizing
a common source database



Issue 4.1
2010-12-31

AeroSpace and Defence Industries Association of Europe
Aerospace Industries Association of America
Air Transport Association of America, Inc.
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**International specification for
technical publications**
utilizing
a common source database



Technical pre-release Second quarter 2011

Final Issue Third quarter 2011

AeroSpace and Defence Industries Association of Europe
Aerospace Industries Association of America
Air Transport Association of America, Inc.
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The image is a close-up, abstract photograph of a flag, specifically the Ukrainian national flag, which consists of two horizontal stripes of equal width, blue on top and yellow on the bottom. The flag is shown in a dynamic, flowing state, with the fabric creating deep, undulating folds and sharp, bright highlights. The lighting is dramatic, with the yellow stripe appearing very bright and almost white in some areas, while the blue stripe is a deep, saturated blue. The overall composition is abstract, focusing on the texture and movement of the fabric rather than a full representation of the flag. Overlaid on the right side of the image, in the center vertically, is the word "Questions?" in a clean, white, sans-serif font. The text is clearly legible against the darker blue background of the flag.

Questions?