S1000D – Issue 4.2

An insight into its content

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S1000D - Issue 4.2

- Scope
- Statistics
- New for 4.2
- More changes
- Preparation for modularization
Scope

• Clean-up
  – Remove duplication
  – Remove contradiction
  – Harmonize for consistency

• Bug-fixes
  – Text/Schema confusion/apparent contradiction
  – Fixes to text that weren’t observed for previous changes

• Important changes
  – Business rules
  – Changes that were scheduled for Issue 4.1
    • Component maintenance
    • Layout
    • Graphics
Statistics

- 179 affected chapters
- 107 CPFs
- 6 Review Meetings
- 66 chapters signed off
- Change Proposals:
  - 10 BR CPFs
  - 22 CAWG CPFs
  - 10 US
  - 8 MTDTT
  - 18 related to graphics
  - Remainder:
    - European
    - EPWG/PPWG
Schema updates for S1000D Issue 4.2
List of CPFs with Schema, BREX, or Bike Sample Changes

<table>
<thead>
<tr>
<th>Date</th>
<th>CPF Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-077MTDTT</td>
<td>Introduce <code>@applicRefId</code> on <code>&lt;inspectionDefinition&gt;</code> and <code>&lt;threshold&gt;</code></td>
<td></td>
</tr>
<tr>
<td>2009-078MTDTT</td>
<td>Sampling attributes</td>
<td></td>
</tr>
<tr>
<td>2009-079MTDTT</td>
<td>Optional <code>&lt;limitRangeFrom&gt;</code></td>
<td></td>
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<tr>
<td>2009-080MTDTT</td>
<td>MultipleRefs on trigger</td>
<td></td>
</tr>
<tr>
<td>2009-101US</td>
<td>Definition of attribute on <code>&lt;externalApplication&gt;</code></td>
<td></td>
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<tr>
<td>2009-123IGBRTT</td>
<td>BR severity levels</td>
<td></td>
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<tr>
<td>2009-133IGBRTT</td>
<td>BR - markup</td>
<td></td>
</tr>
<tr>
<td>2009-134IGBRTT</td>
<td>BR identification</td>
<td></td>
</tr>
<tr>
<td>2010-012SE</td>
<td>Add <code>&lt;name&gt;</code> and <code>&lt;shortName&gt;</code> in <code>&lt;zoneSpec&gt;</code></td>
<td></td>
</tr>
<tr>
<td>2010-019S1</td>
<td>Add <code>&lt;businessUnit&gt;</code> to <code>&lt;enterpriseRef&gt;</code></td>
<td></td>
</tr>
<tr>
<td>2010-034US</td>
<td>Add <code>@security</code> to <code>&lt;dmTitle&gt;</code> elements <code>&lt;techName&gt;</code> and <code>&lt;infoName&gt;</code></td>
<td></td>
</tr>
<tr>
<td>2012-015AA</td>
<td>CIR FIN - FLS properties</td>
<td></td>
</tr>
<tr>
<td>2012-016AA</td>
<td>CIR FIN - Grounding type</td>
<td></td>
</tr>
<tr>
<td>2012-020US</td>
<td>Data Restrictions - Derivative Classifications</td>
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<td>Specific sourcing</td>
</tr>
<tr>
<td>2012-025EPWG</td>
<td>Make FM title page product illustration multiple</td>
</tr>
<tr>
<td>2013-025US</td>
<td>Fault Isolation Enhancements</td>
</tr>
<tr>
<td>2013-026GB</td>
<td>Addition of References to Reason for Update</td>
</tr>
<tr>
<td>2013-027NN</td>
<td>Empty CSN element after applicability filtering</td>
</tr>
<tr>
<td>2013-028CMPTT</td>
<td>Add two identification attributes to the <code>&lt;pm&gt;</code> schema</td>
</tr>
<tr>
<td>2013-037AA</td>
<td>Wire installation traceability</td>
</tr>
<tr>
<td>2013-041AA</td>
<td>Revision marking consistency</td>
</tr>
<tr>
<td>2013-042AA</td>
<td>Add <code>@id</code> attribute to Service Bulletin material information sub-section</td>
</tr>
<tr>
<td>2013-044AA</td>
<td>IPD - Operation restriction messages</td>
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<tr>
<td>2013-047LSHTT</td>
<td>Support for SCORM runtime files in S1000D</td>
</tr>
<tr>
<td>2013-053LSHTT</td>
<td>Support metadata information related to multimedia resources in S1000D</td>
</tr>
<tr>
<td>2013-054DE</td>
<td>Optional <code>&lt;title&gt;</code> on <code>&lt;dmNode&gt;</code></td>
</tr>
<tr>
<td>2014-011EPWG</td>
<td>IPD Figure variant number - Bug Fix</td>
</tr>
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</table>
Added optional applicability references to two elements:

- `<inspectionDefinition>`:
  - Applicability already allowed below `<taskDefinition>` and `<timeLimitInfo>`, but not `<inspectionDefinition>`

- `<threshold>`:
  - A dedicated threshold may be only relevant to a given applicability, There is no way today to handle this at the threshold level only the threshold container element must thus allow an applicability statement
  - Satisfies a need to express a dedicated applicability for some inspection definitions without a dedicated new data module
Addition of sampling attributes:

- Defines a better sub-structure for the sampling element by addition of a `@samplingValue`, a `@samplingRatio` and a `@samplingUnitOfMeasure` attribute,
- Similar to the S3000L data model with description, ratio and value
- Allows projects to express a sampling value with `uom` or a percentage (same as S3000L model) instead of a simple text string
2009-079MTDTP

Allows `<limitRangeFrom>` to become optional

- `<limitRangeFrom>` is mandatory and must be authored (from 0) even if the limit expresses only a `<limitRangeTo>`

- Corrects problem when the limit expresses only a `<limitRangeTo>`
2009-080MTDTT

Adds attribute `@occurrenceTrigger` to the element `<trigger>`

- Corrects the situation where a trigger can make a direct reference to a dedicated data module (e.g., change wheel) using the element `<refs>`, and the reason for the reference to the dedicated data module is lost
- Helps support the S1003X (S1000D to S3000L interchange specification)
Changes the `@application` attribute from `xs:entity` to `xs:string`

- Current type definition of the application attribute limits the path identifier for an external application to an XML entity
- Accommodates the ability for an IETP to execute an external application through a variety of referencing mechanisms
- External application references may be expressed via other modalities to which the IETP author may not have access at content creation time
2009-123IGBRTT

• Provides the ability to indicate a severity level on a business rule in the BREX

• Implements a standard method to use project business rules to identify and differentiate the quality of supplier or partner data as a determiner to load them into a CSDB
Introduces the brDoc schema

- Provides the possibility of marking up Business Rules Decision Points (BRDP) in the Business Rules Data Modules (BR DM) for the automatic generation of the BREX Data Module
2009-134IGBRTT

• Provides the ability to uniquely identify a business rule using a persistent identification number (ie, not ID/IDREF)

• Add the new element `<brDecisionRef>` to the existing elements `<snsRules>`, `<structureObjectRule>`, `<notationRule>`, and `<nonContextRule>`
Add element <shortName> to <accessPointRef> to be in line with <zoneRef> Chap 3.9.5.2.1.10 Para 2.1.6

• Consistent with other repositories and in line with CPF2009-026AA which adds <name> and element <shortName> to <accessPointType> Consistent to what we have done in <reqSupportEquip> and <reqSpplies>
Adds the existing element `<businessUnit>` to the content of the element `<enterpriseRef>`

- Allows projects not implementing the enterprise CIR data module to provide the address of the enterprise
- Extends it for all data module types
Add a security attribute to `<dmTitle>` elements `<techName>` and `<infoName>`

- Provides mechanism for portion marking of IETPs
- Allows a classified data module to display its title when the title is not the same classification as the data module
- Meets a US government mandate - 5200.01-R and 5220.22-M (NISPOM)
2012-015AA

Adds new properties in the Functional Item CIR for Field Loadable Software (FLS)/Aircraft Control Software (ACS) functional items to provide necessary information to the operator on how to manage FLS/ACS

• `<softwareClassification>` stores the FLS/ACS classification through a project configurable attribute

• `<softwareCustomizationStatus>` indicates what is the FLS/ACS customization status using a project configurable attribute

@`softwareCustomizationStatusValue`
2012-016AA

 Adds a new property in the CIR FIN for electrical functional items such as grounding points to indicate the type of grounding

• New element `<groundingType>` under `<functionalItem>` stores the functional item grounding type or bonding segregation
2012-020US

Derivative classifications:

• Provides a method to specify a future classification action to the controlled content
• Indicates the source material and information from where the content was extracted
• Provides a means to identify and contact the classifier
• Adds optional structure
  <derivativeClassification> to <dmStatus> and <pmStatus>
• Adds attribute @derivativeClassificationRefId to the @securityAttGroup attribute
2012-024AA

Adds a new property in the CIR Part and IPD to identify parts with specific sourcing conditions

• Enables an OEM to identify parts whose sourcing is managed under a specific contract and not buyer- or supplier-furnished parts

• Adds new element `<sourcingType>` under the element `<procurementData>`

• Adds new project-configurable attribute `@sourcingTypeValue`
2012-025EPWG

Allows product configuration differences to be visible in the product illustration on the title page of the publication

• Publications which filter based on applicability have the possibility to include a “correct” illustration to the resulting publications

• Changes `<graphic>` from a single to multiple instances under `<productIllustration>`
2013-025US

Adds new features to the Fault Isolation branch of the Fault DM to support the USAF data requirements:

• Applicability is needed on \textless \textit{action} \textgreater 

• Change indication needed on isolation step question/answer branch

• Use of subscript and superscript on questions and choices
2013-026GB

Allows `reasonForUpdate` to reference either another Data/Publication module or an External Publication

• Adds new element `<simpleRefPara>` and changes `<reasonForUpdate>` from containing `<simplePara>` to `<simpleRefPara>`
2013-027NN

Adds optional @applicRefId attribute to the element `<catalogSeqNumber>`

- Prevents applicability-filtered IPD data modules from becoming invalid if a child `<itemSeqNumber>` element is filtered out
2013-028CMPTT

Adds a project-configurable attribute to element `<pm>` to support easier identification, management, and processing of publication modules
2013-037AA

- Allows tracking the reason why some wires have been installed on the product
- Adds new element `<changeAuthorityDataGroup>` to `<wireInfo>`
- Allows for multiple `<changeAuthorityData>` elements to accommodate several conditions impacting the wire change
2013-041AA

Adds the attributes @id, @changeType, @changeMark, @reasonForUpdateRefIds on some elements where they were missing
2013-042AA

Allows hyperlinks to Service Bulletin sub-sections of Material Information paragraph

- Adds @id, @changeType, @reasonForUpdateRefIds, and @changeMark attributes to:
  - <sbMaterialSetList>
  - <sbSupportEquipsList>
  - <sbSuppliesList>
  - <sbSparesList>
  - <sbRemovedSparesList>
2013-044AA

- Extends the use of `<restrictedOperationNote>` element to other types of operations than Extended Range Twin Engine operations (ETOPS)
- Adds an optional `@operationType` attribute on the element `<restrictedOperationNote>` to indicate the type of operation concerned by the restriction
2013-047LSHTT

Adds a number of file formats especially used in SCORM content packages

• Updates the notation.xml file to include:
  – Compressed file ZIP
  – Java script JS
  – Cascading Style Sheet CSS
  – Movie Authoring File FLA
2013-054DE

Adds an optional element `<title>` to element `<dmNode>` in the process data module Schema

- `<title>` can be used for visualization (eg, headline of the window) throughout all `<dmNode>` independent of the kind of `<dmNode>` child elements
Corrects an inconsistency between the definition of the Disassembly Code field used in the DMC and the `@figureNumber` attribute used in the IPD data module to identify a Catalog Sequence Number.

- Modifies the `@figureNumber` attribute definition in order to allow one alpha or numerical in the first position.
Summary of business rules changes

- Defined (on the top level) typical processes of business rules generation and use (Chap 2.5.2 in Issue 4.2)
- Defined a new data module type: Business Rules document data module, which can be used for the production of the various types of business rules documentation: narrative, guidance, instructions, rules, BREX, etc
- Working on production of Business Rules template data module, which is updated information of BRDP relationships (from Issue 4.1; the Excel file released at UF 2014) and updates from other changes of Issue 4.2 relating to BRDPs. Projects and organizations will be able to take this data module and customize it to create their DM. Less ambiguities and less conflicts between partners when it comes to business rules production and use will be the result
- BREX mechanism and chapters are updated to conform the new business rules generation and use processes:
  - BREX rules received unique identifiers
  - There is a link now between an S1000D mandatory rule and corresponding BREX rule
  - There is a possibility to define placeholders in BR document data module where a BREX rule is needed
  - BREX rules can be now defined within BR document data module and then extracted to generate a BREX data module
- An Implementation Guide (IG) is in development. Our plan is to have first release of the implementation guide for issue 4.2 at time of UF2016
More changes

• Graphics
• CAWG
• Component maintenance
• Applicability
• Learning
• Planning data
Graphics

• Graphic CPFs in 4.2 (2013-031AA thru 2013-036AA)
• Enable reuse of graphics that are authored to older style guidelines or different venues
• Add guidance for symbols and graphic constructs to improve consistency
• Update example illustrations to comply with current style guidelines

• Note about the future for graphics

• Work with the Model Based Enterprise group to work out how to use MBE in S1000D.
• Merge figure and multimedia into single ICN object
• Multimedia metadata
• Guidance on use of hotspot and parameter
CAWG

• CIRs (Part and Functional item)
• IPD
• Wire data

• Other subjects of importance for CAWG are:
  – Graphics CPFs managed by GMWG
  – CMPTT CPFs on CMP chapters
Issue 4.2 - New Schemas

Two new schemas created for Issue 4.2
brDoc.xsd

- CPF 2009-123IGBRRTT  BR severity levels
- CPF 2009-133IGBRRTT  BR - markup
- CPF 2009-134IGBRRTT  BR identification
- The BR data module is used to generate a Business Rules document data module to collect business rule information on all required context and non-context BRDP
- Contains the structure originating from the descriptive Schema
- Contains a BR paragraph structure, for recording BRDP and the decisions made
Through its descriptive structure, the BR data module Schema can be used for creation of project and/or organization business rules.
<brLevelledPara> allows BR info to be recorded
"<brDecision>

contains a stand-alone BR decision or as a result of consideration of a BRDP"
2013-053LSHTT

- icnMetaData Schema
- General
  - Support metadata information related to multimedia (MM) resources in S1000D
  - Makes a MM or graphics file a self-standing and fully managed object in the CSDB
  - Provides a set of metadata items, especially applicable to multimedia and graphics
  - Handles an object appearing in several formats intended for various purposes, eg, print, laptop, phone
  - Manages MM/graphics objects consisting of several files
  - Naming convention connecting metadata to its MM/graphics object, leaving the object unaffected
  - Independent of which Information Control Number syntax(es) are used
Compatibility properties

• Optional feature applicable to any MM/graphics object
• Can be applied to existing/legacy MM/graphics objects
• Does not affect existing software tools
icnMetadata.xsd
The identification and status section gives all the identification elements required to address and control the ICN metadata file.

Also provides the elements for status information related to the ICN object concerned.
<imfContent> contains the factual content of the ICN metadata file
• These metadata are comprised of items of use when the ICN object is used in some context and is presented to the user in that context
Preparation for modularization

• Clean up
  – Language
  – Consistent explanations/descriptions

• Harmonize
  – Terminology
  – Layout
Questions