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S1000D 4.1 - Generic IPD detailed

by

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S1000D 4.1
Generic Illustrated Parts Data (GIPD)

Content

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- Change administration (change proposals)
- Remove incompatibilities
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- Part CIR and IPD
- Other name changes
- Enhancements Part CIR and IPD
- Harmonization Part CIR and IPD
- Miscellaneous cleanup changes
- Summary
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Generic IPD detailed
Overview

- The GIPD task team was formed to develop consistent parts data standards that can be used by multiple industries. The changes affect the part repository and the IPD Schemas.
- **Constraint**
  - Do not disrupt existing systems. Existing IPD is closely linked to S2000M and allows automated population of S1000D from S2000M
- **Goals**
  - Remove incompatibilities and mandatory requirements for S2000M specific data that other industries do not have
  - Enhance IPD structures to support Civil Aviation and other industries that do not have S2000M projects
  - Harmonize the element names and structures between the part repository and the IPD
- **Other impacts**
  - A general cleanup of the S1000D Schemas caused some changes to the IPD and parts repository
  - Some element names changed to more accurately reflect the contents

Generic IPD detailed
Change administration

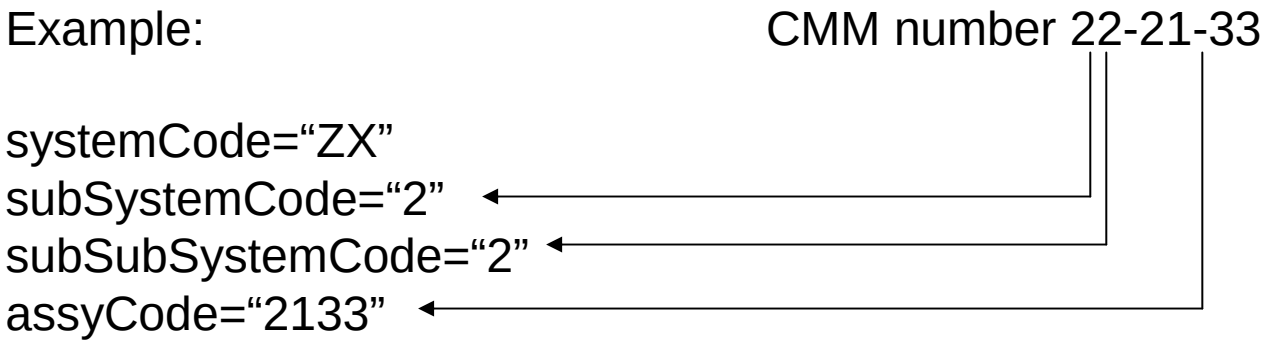
- Four change requests were developed to manage the GIPDTT recommended changes for S1000D 4.1
  - CPF 2009-146S1 Part repository enhancements
  - CPF 2009-147S1 Part relationships
  - CPF 2009-148S1 Part data in IPD
  - CPF 2009-149S1 Location dependent data in IPD

- Two Schemas were changed
  - ipd.xsd
  - techRep.xsd (re-identified in 4.1 as comrep.xsd)

Generic IPD detailed
Remove incompatibilities

- Data module coding
  - Allow non-chapterized SNS coding that uses CMM values as an alternate to using the IPPN

CPF 2009-149S1 para 3.1



Generic IPD detailed
Remove incompatibilities (cont.)

- For Item Sequence Number (ISN)
  - Non-S2000M projects do not have data for the Location Recommendation Segment.

    The **locationRcmdSegment** element was made optional.

CPF 2009-149S1 para 5.6

Generic IPD detailed
Enhancements

- For Illustrated Parts Catalog (IPC) CPF 2009-149S1 para 3.2
  - If the IPD figure was derived from a specific design document, you can now refer to that document with the **specDocument** element
  - Full referencing capability was added to the **specDocument** element by including the refs element in the structure CPF 2009-146S1 para 5

Generic IPD detailed
Enhancements (cont.)

- For Catalog Sequence Number (CSN)

CPF 2009-149S1 para 4.2

  - It is useful to navigate from data for a part to data for a connecting part.

    To achieve this navigation, a **referTo** element was added. This element allows references to initial provisioning projects, catalog sequence numbers, functional items or any standard S1000D data modules or publications.

CPF 2009-149S1 para 5.3

  - The **refType** attribute definition now uses the business rules exchange. This adds more standard values and makes it possible for a project to define more values describing part relationships.

CPF 2009-149S1 para 4.2

  - Functional Item References are enabled by the addition of the **functionalItemRef** to the **referTo** element.

Generic IPD detailed
Enhancements (cont.)

- For part location segment

CPF 2009-149S1 para 5.5

  - The **refs** element was added to the referTo element to allow references to airworthiness directives, service letters, etc.

CPF 2009-149S1 para 5.8

  - The **installationLocation** element was added to allow using a spatial coordinate system to locate a part on a product

Generic IPD detailed
Enhancements (cont.)

- For Item Sequence Number (ISN)
  - The **totalQuantity** element was added — CPF 2009-149S1 para 5.7
  - The **removalOrInstallationQuantity** element was added — CPF 2009-149S1 para 5.7
  - The **partIdentSegment** element was renamed to **partSegment**. And only one **partSegment** is allowed in an **itemSequenceNumber** element. — CPF 2009-148S1 para 3.2
  - The **natoStockNumber** element was moved out of this element and into the **partSegment** element. — CPF 2009-148S1 para 5
  - The **changeAuthorityNumber** element was replaced with **changeAuthorityData** grouping element that has an enhanced structure to provide indication of the authority that allows a part to be installed at the location. — CPF 2009-149S1 para 5.4
  - The **partStatus** attribute was added to allow identification of parts as basic, oversize/undersize, select from, interchangeable, or alternative. — CPF 2009-149S1 para 5.2

Generic IPD detailed
Enhancements (cont.)

- Applicability segment

CPF 2009-149S1 para 5.9

  - Some products are allowed to fulfill certain missions only if they have the required part configuration.

    The **restrictedOperationNote** element was added to allow a textual description of items that are not approved for a certain type of operation, for example, Extended-Range Twin-Engine operations

Generic IPD detailed
General harmonization

- Part identification

CPF 2009-148S1 para 2

  - The partRef element was established as an enhanced mechanism to refer to parts. Within the partRef element are the original PartNumberValue and manufacturerCodeValue elements that can still be used.

    The partRef element is used in several contexts. The S1000D specification text was updated in one location to describe the usage of this element.

Generic IPD detailed
Part CIR and IPD

- Some of the enhancements were made to harmonize the Part CIR with the IPD
  - Projects deciding not to use the Part CIR must have the same capabilities when using the IPD.
  - The partSegment element is the focus of these enhancements.

Generic IPD detailed
Enhancements Part CIR and IPD

- For item identification data
  - For non-S2000M projects, some part information can be delivered before there is a part number available. To allow this situation, the **partNumberUnavailableFlag** attribute was added to indicate that the part number is not available for the item

    CPF 2009-146S1 para 2
  - The **limitedPartNumber** element was added to represent part numbers that have been edited to fit data constraints such as a fixed length.

    CPF 2009-146S1 para 9
- techData
  - A **placardText** attribute was added to allow inclusion of the text that is written on a placard.

    CPF 2009-146S1 para 7
  - The **hazardousFlag** attribute was replaced with the **hazardousFlag** element that allows classification of the hazards

    CPF 2009-146S1 para 8

Enhancements Part CIR and IPD (cont.)

- procurementData
  - Use **enterpriseRef** instead of **supplierCode** and **optionalSupplierCode** to refer to the supplier of a part

    CPF 2009-146S1 para 10
  - Add optional elements **name** and **shortName** to **enterpriseRef**

    CPF 2009-146S1 para 10

Harmonization Part CIR and IPD

- For part segment
  - Changed the contents to include: **itemIdentData**, **procurementData**, **techData** and **partRefGroup** elements.

    The previous content can be mapped into this new structure.

CPF 2009-148S1 para 4

- For technical data (part repository)
  - Add the element **unitOfIssueQualificationSegment** to match what is available in the IPD

CPF 2009-146S1 para 11

- For referencing
  - The **catalogSeqNumberRef** element was added as an alternative to **partRef** for these elements: **replacedBy**, **optionalPart**, **alteredFromPart**, **preferredSparePart** and **localFabricationMaterial**

CPF 2009-147S1 para 4

Generic IPD detailed
Other name changes

- For item identification data
  - The **stockNumber** element was renamed to **customerStockNumber** to avoid confusion with the **natoStockNumber** element

CPF 2009-146S1 para 3

- Part identification segment (part repository)
  - The **name** element was renamed to **descrForPart**
  - The **usageCategory** element was removed. The **partUsage** element was added to achieve the same purpose.

CPF 2009-146S1 para 4

CPF 2009-146S1 para 6

Generic IPD detailed
Miscellaneous cleanup changes

- The **initialProvisioningProjectValue** attribute was changed to **initialProvisioningProjectNumber**
- The **itemSequenceNumber** element was renamed to **itemSeqNumber**
- The c**atalogSeqNumberValue** string was replaced by the set of attributes
  - systemCode
  - subSystemCode
  - subSubSystemCode
  - assyCode
  - figureNumber
  - figureNumberVariant
  - item"
  - itemVariant
- A similar attribute set was added to the catalogSeqNumberRef element

Miscellaneous cleanup changes (cont.)

- Catalog Sequence Number (CSN) reference
  - Attributes were added to allow referencing a data module by the DMC attributes instead of by the catalogSequenceNumberValue string.
    - modelIdentCode
    - systemDiffCode
    - systemCode
    - subSystemCode
    - subSubSystemCode
    - assyCode
    - figureNumber
    - figureNumberVariant
    - itemLocationCode
    - item
    - itemVariant

  Only figure number and item are required

Miscellaneous cleanup changes (cont.)

CPF 2009-147S1 para 3

- The **altPart** element was renamed to **alteredFromPart** to avoid confusing it with alternate parts. Subelements were also renamed.

Generic IPD detailed
Summary

- Many changes were made to the Part CIR and the IPD Schemas.
- The result is a more complete standard that
  - Does not disrupt S2000M projects
  - Remains consistent with the other S1000D Schemas
  - Enhances the Part CIR
  - Allows exchange of data elements for parts when using the IPD without the Part CIR

Generic IPD detailed
Abbreviations

AIA	Aerospace Industries Association of America
ASD	AeroSpace and Defence Industries Association of Europe
ATA	Air Transport Association of America
CIR	Common Information Repository
CMM	Component Maintenance Manual
CPF	Change Proposal Form
CSN	Catalog Sequence Number
DM	Data Module
DMC	Data Module Code
GIPD	Generic IPD
IPC	Illustrated Parts Catalog
IPD	Illustrated Parts Data
IPPN	Initial Provisioning Project Number
ISN	Item Sequence Number
SNS	Standard Numbering System
TT	Task Team

Thank you for your attention!

Questions?

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