Updates to the Common Data Model

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• Coordinate data modeling activities between the specifications
  – Define rules and guidelines for data modeling using UML
• Harmonize and consolidate data requirements, data elements and business terms
  – Develop the Common Data Model (CDM)
  – Develop the S-series ILS Specifications Glossary
• Defined the rules for data exchange definitions for all specifications
  – Defines the rules and guidelines for XML schema development based on the UML data models
  – Develops the XML schema for the CDM upon which the respective ILS Specifications XML schema(s) must be based
• Liaison party for the ASD ILS S-Series Specifications with respect to ISO 10303:239 PLCS
Whereas SX000i provides overall guidance of the S-Series ILS specs, the DMEWG provides the underlying technology strategy and implementation.
What does DMEWG produce?

• SX001G: Glossary for the S-Series ILS specifications
• SX002D: Common data model for the S-Series ILS specifications
• SX003X: Compatibility matrix for the S-Series ILS specifications (On hold)
• SX004G: Unified Modeling Language (UML) model readers’ guidance
• SX005G: S-series ILS specification XML schema implementation guidance
• SX006R: S-series ILS specifications rules definition (In work)
Available Issues

• SX001G: Glossary for the S-Series ILS specifications
  – Issue 1.1 released (www.sx000i.org)
• SX002D: Common data model for the S-Series ILS specifications
  – Issue 1.1 released (www.sx000i.org)
• SX003X: Compatibility matrix for the S-Series ILS specifications
  – (On hold)
• SX004G: Unified Modeling Language (UML) model readers’ guidance
  – Issue 1.0 released (www.sx000i.org)
• SX005G: S-series ILS specification XML schema implementation guidance
  – Issue 1.0 released (www.sx000i.org)
• SX006R: S-series ILS specifications rules definition
  – (In work)
DMEWG Specifications Issue Plan

- SX001G
- SX002D
- SX004G
- SX005G
- SX006R


Issued
Planned

Iss 1.0  Iss 1.1  Iss 2.0
Iss 1.0  Iss 1.1  Iss 2.0
Iss 1.0  Iss 1.1  Iss 2.0
Iss 1.0  Iss 1.1  Iss 2.0
Iss 1.0  Iss 1.1  Iss 2.0
• Updated the UML Modeling Style
  – Additional class stereotypes to ease generation of XML Schemas and to ease readability
  – Made directions of associations explicit to ease readability
  – Added attribute stereotypes to ease future mappings to ISO 10303:239 PLCS
• UoFs defined in CDM 1.1 which has updated (besides editorial)
  – UoF Project and Product
  – UoF Breakdown Structure
  – UoF Zone Element
  – UoF Part Definition
  – UoF Product Design Configuration
  – UoF Change Information
  – UoF Remark
  – UoF Applicability Statement
Common Data Model - Issue 2.0 Highlights

• New UoFs:
  – UoF Product Usage Context
  – UoF Facility
  – UoF Location
  – UoF Task Requirement
  – UoF Design Change Request
  – UoF Task
  – UoF Task Resource
  – UoF Competence Definition
  – UoF Time Limit
  – UoF Task Usage
  – UoF Digital File
  – UoF Document
  – UoF Parts As Realized
  – UoF Serialized Product Variant Configuration (as-manufactured, as-maintained etc)
  – UoF Serialized Part Configuration
• Project Specific Attributes
• Added business terms that harmonizes the use of terms like:
  – Item
  – End item
  – Spare part
  – Consumable
  – Expendable
  – Etc.

endItem Definition
An endItem is a part which is self-sufficient and can be used by
an end user in an operational context.

Examples
Aircraft carrier
Test equipment
Screw driver

Type
Business Term
Common Data Model – Next Issue (2.1?)

- Areas worked on but not completed for CDM 2.0
- Will be used as the basis for next issues of S3000L (Issue 2.0), S4000P (Issue 2.0) and S5000F (Issue 2.0).
  - UoF Product Usage Phase
  - UoF Analysis Item
  - UoF Analysis Item Key Performance Parameter
  - UoF Failure Analysis
  - UoF Failure Detection and Localization
  - UoF Special Event
  - UoF Damage Analysis
  - UoF Fault Indication
  - UoF Activity Record
• New specification released Dec 31, 2017
• Focused on Update messages and how to manage
  – Multiple-valued:
    • Attributes *
    • Associations
  – Key value change

* MIL-STD-1388-2B and GEIA-STD-0007 typically define single valued attributes, with some specifically defined multi-valued properties, example, predicted or measured mean elapsed time for a task
A property value may be defined as different types, numeric or text, and these values may characterized by a date and/or classification and must have a unit, if a numeric property.
SX005G – Example of multi-valued property

If the baseline message defines 3 different property values for the “multiValuedExample” class.

These property values are characterized the:
- valueRecordingDate (date)
- value determination (vtdm)
- unit
This update (crud code=“U”) message defines the intent to update the specific property value of 19, characterized by:

- `<date>` (valueRecordingDate)… 2016-10-15
- `<vtdm>` (value determination) ... MEA (measured)
- `<unit>` ... FH (flight hours)

to the value of 20.

```
<multiValuedExampleClass
  crud="U">
  <classId>
    <id>1</id>
  </classId>
  <classProp>
    <date>2016-10-15</date>
    <vtdm>MEA</vtdm>
    <unit>FH</unit>
    <value>20</value>
  </classProp>
</multiValuedExampleClass>
```
SX005G – Example of multi-valued property

The resultant dataset after the update message would be

```xml
<multiValuedExampleClass>
  <classId>
    <id>1</id>
  </classId>
  <classProp>
    <vdtm>REQ</vdtm>
    <unit>FH</unit>
    <value>15</value>
  </classProp>
  <classProp>
    <vdtm>SPE</vdtm>
    <unit>FH</unit>
    <value>17</value>
  </classProp>
  <classProp>
    <date>2016-10-15</date>
    <vdtm>MEA</vdtm>
    <unit>FH</unit>
    <value>20</value>
  </classProp>
</multiValuedExampleClass>
```
Thank you
for your attention!

Questions?