

Updates to the Common Data Model

Leif Gyllström

Senior Advisor ILS Information
Management

Saab AB, Sweden

E-mail: leif.gyllstrom@saabgroup.com

Parker Owen

Vice President, Technical Operations

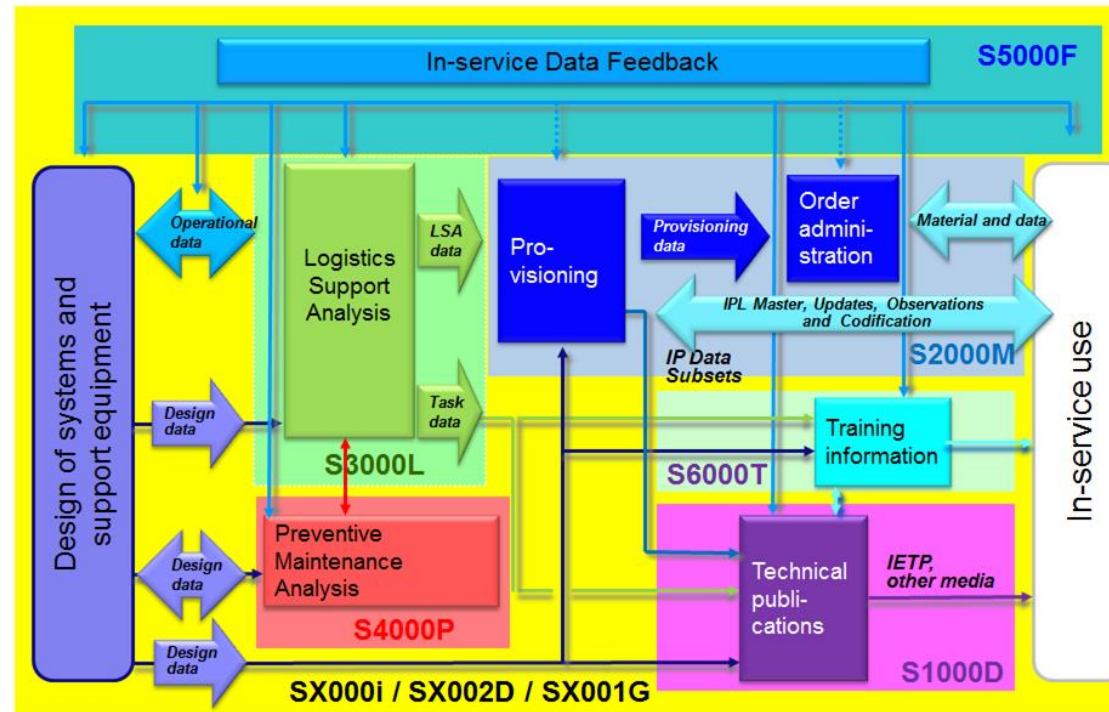
Integrated Support Solutions (ISS)

E-mail: parker.owen@isscorp.com

S-Series Data Model and Exchange Working Group (DMEWG)

- 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

S-Series Data Model and Exchange Working Group (DMEWG)



Source: Airbus D&S - Saab

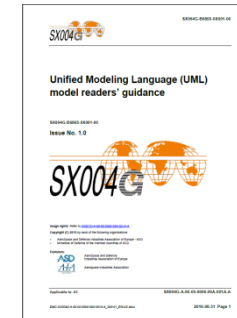
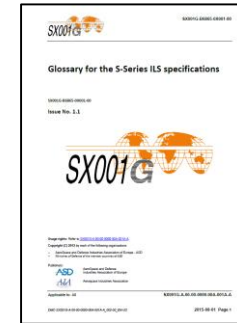
Whereas SX000i provides overall guidance of the S-Series ILS specs, the DMEWG provides the underlying technology strategy and implementation

What does DMEWG produce?

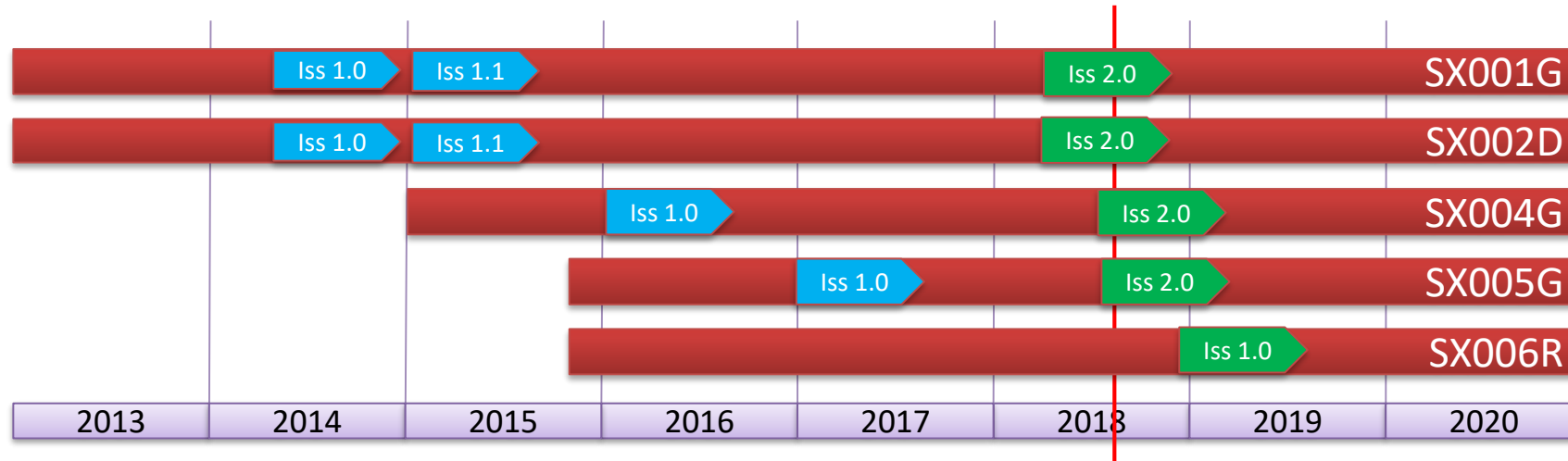
- SX001G: Glossary for the S-Series ILS specifications
- SX002D: Common data model for the S-Series ILS specifications
- SX003X: Compatibility matrix for the S-Series ILS specifications (On hold)
- SX004G: Unified Modeling Language (UML) model readers' guidance
- SX005G: S-series ILS specification XML 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)

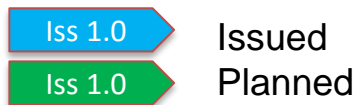
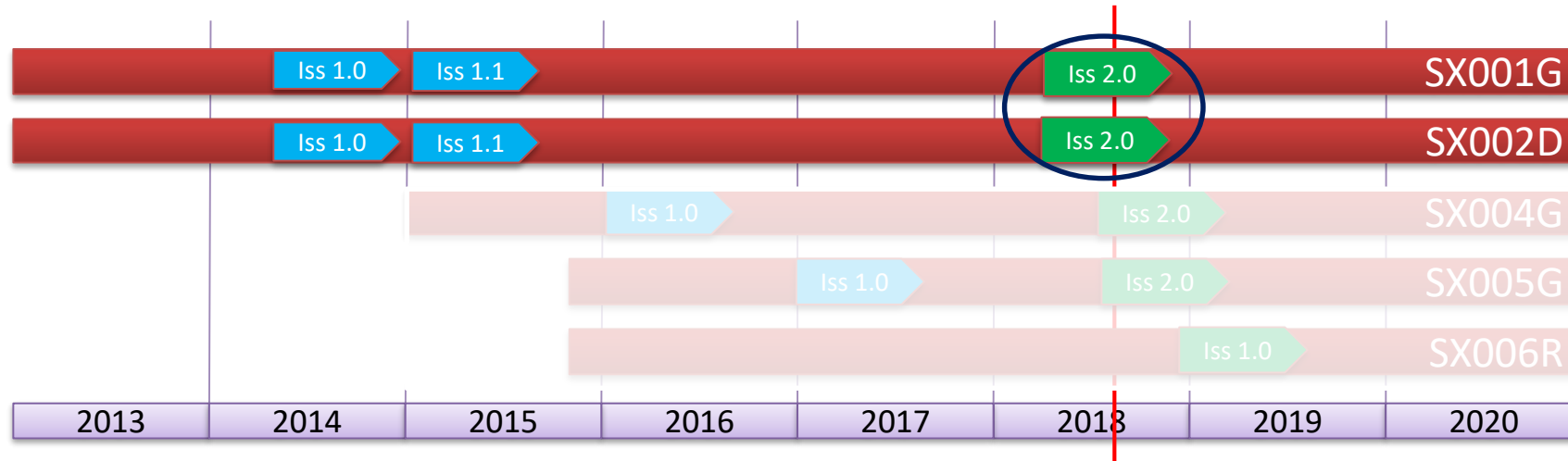


DMEWG Specifications Issue Plan



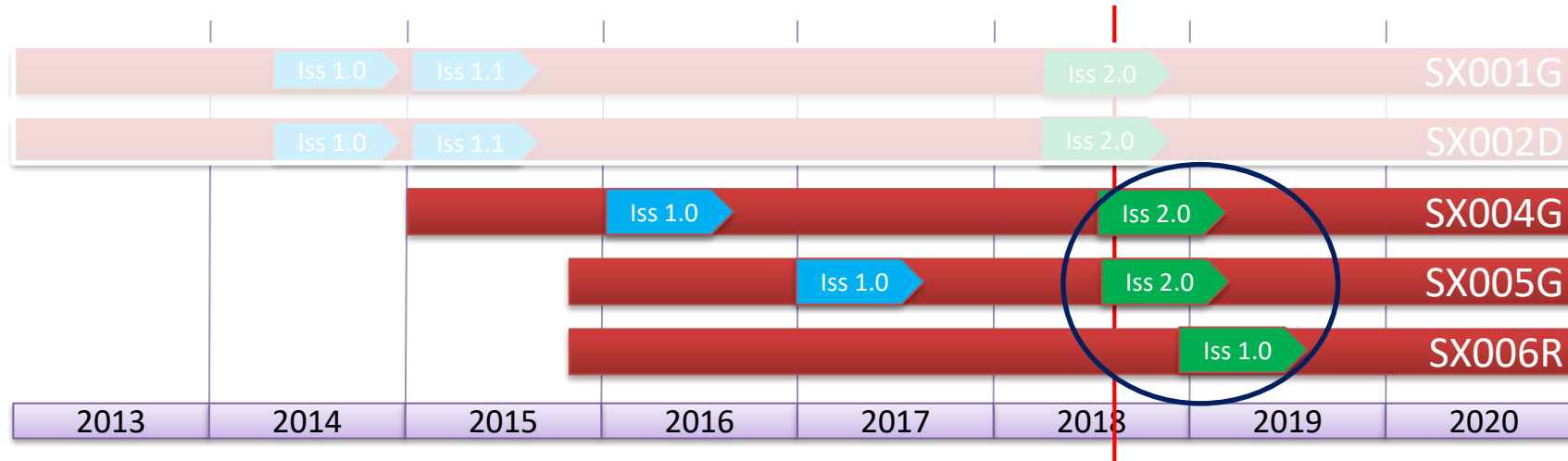
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DMEWG Specifications Issue Plan



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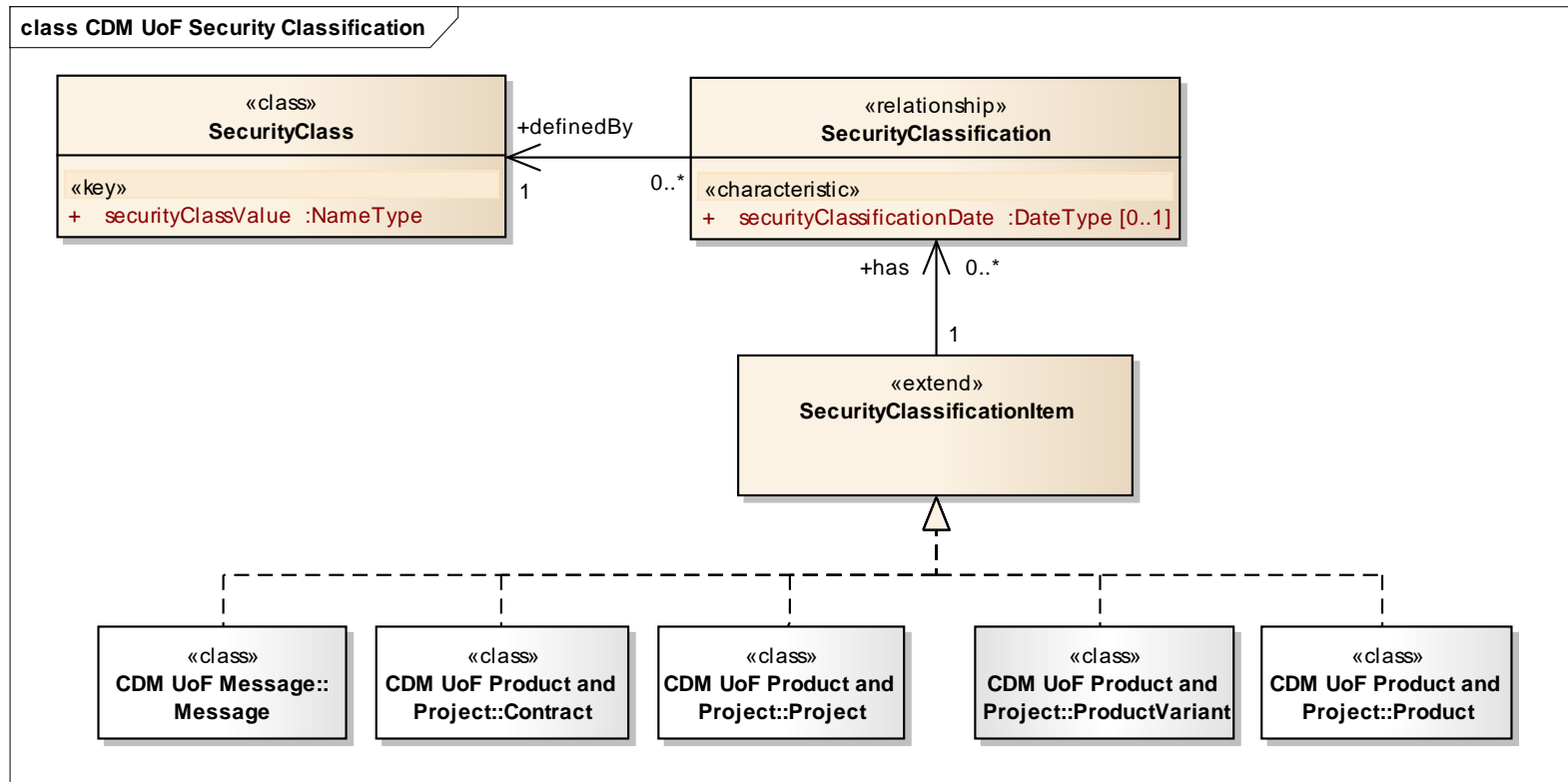
DMEWG Specifications Issue Plan



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Common Data Model - Issue 2.0 Highlights

- 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



Common Data Model - Issue 2.0 Highlights

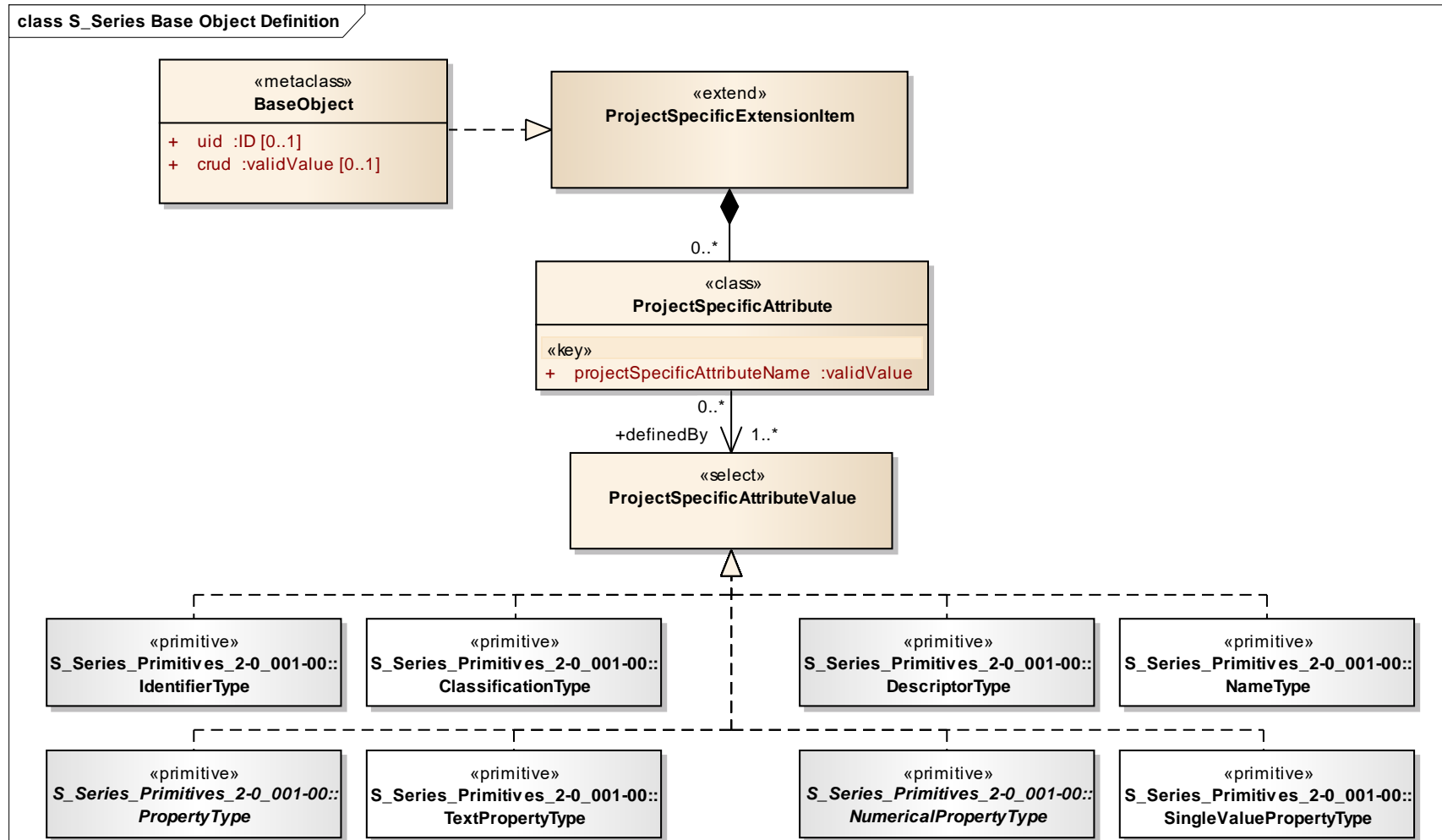
- UoFs defined in CDM 1.1 which has updated (besides editorial)
 - UoF Project and Product
 - UoF Breakdown Structure
 - UoF Zone Element
 - UoF Part Definition
 - UoF Product Design Configuration
 - UoF Change Information
 - UoF Remark
 - UoF Applicability Statement

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

Common Data Model - Issue 2.0 Highlights

- Project Specific Attributes



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Glossary – Issue 2.0 Highlights

- 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

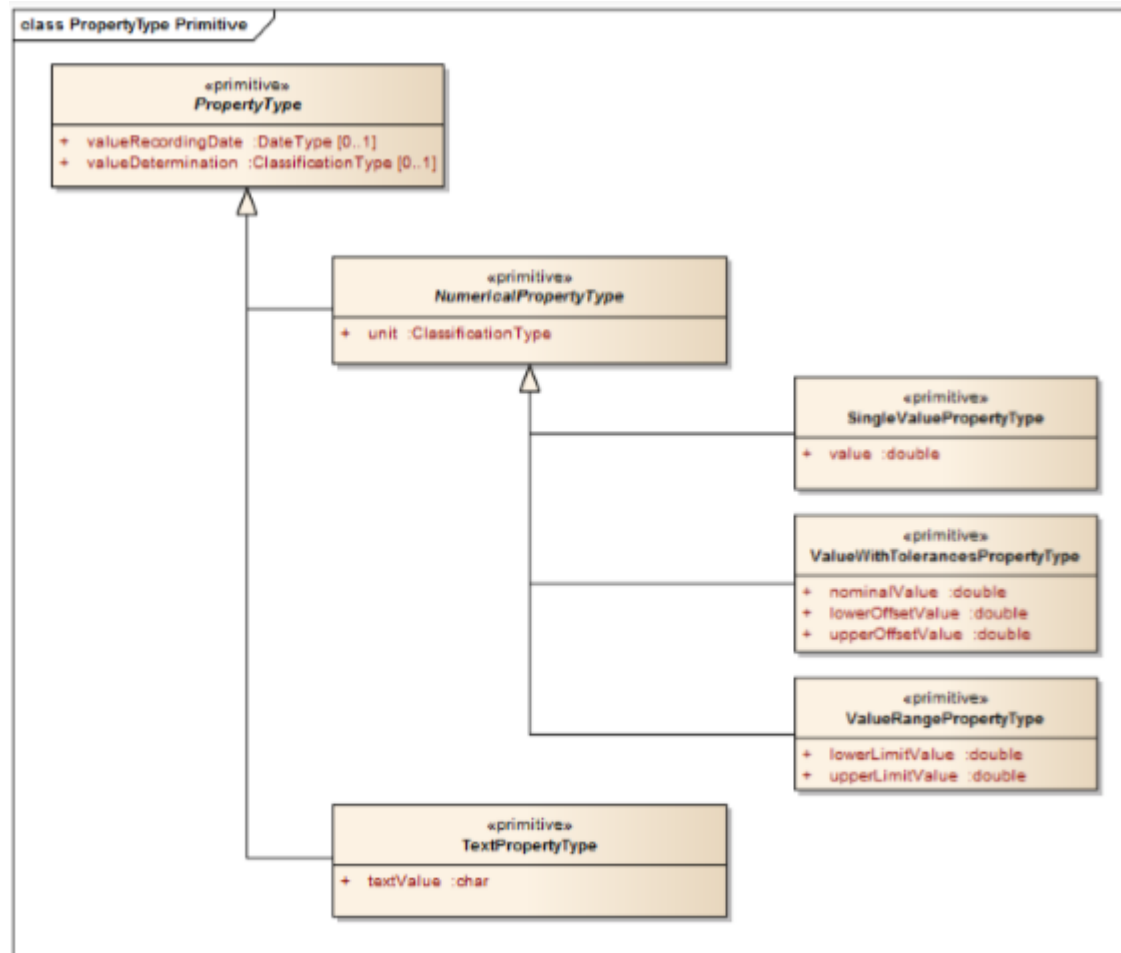
SX005G - ILS specification XML schema implementation guidance

- 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



SX005G – Example of multi-valued property



ICN-B6865-SX002D0017-001-01

Fig 6 PropertyType primitive

A property value may be defined as different types, numeric or text, and these values may be characterized by a date and/or classification and must have a unit, if a numeric property

SX005G – Example of multi-valued property

```

<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>19</value>
  </classProp>
</multiValuedExampleClass>

```

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

SX005G – Example of multi-valued property update

```
<multiValuedExampleClass
  crud="U">
  <classId>
    <id>1</id>
  </classId>
  <classProp>
    <date>2016-10-15</date>
    <vdtm>MEA</vdtm>
    <unit>FH</unit>
    <value>20</value>
  </classProp>
</multiValuedExampleClass>
```

This update (crud code="U") message defines the intent to update the specific property value of 19, characterized by:

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

to the value of 20.

SX005G – Example of multi-valued property

```

<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>

```

The resultant dataset
after the update message
would be

Thank you
for your attention!

Questions?