



## ***What's new in Issue 4.0?***

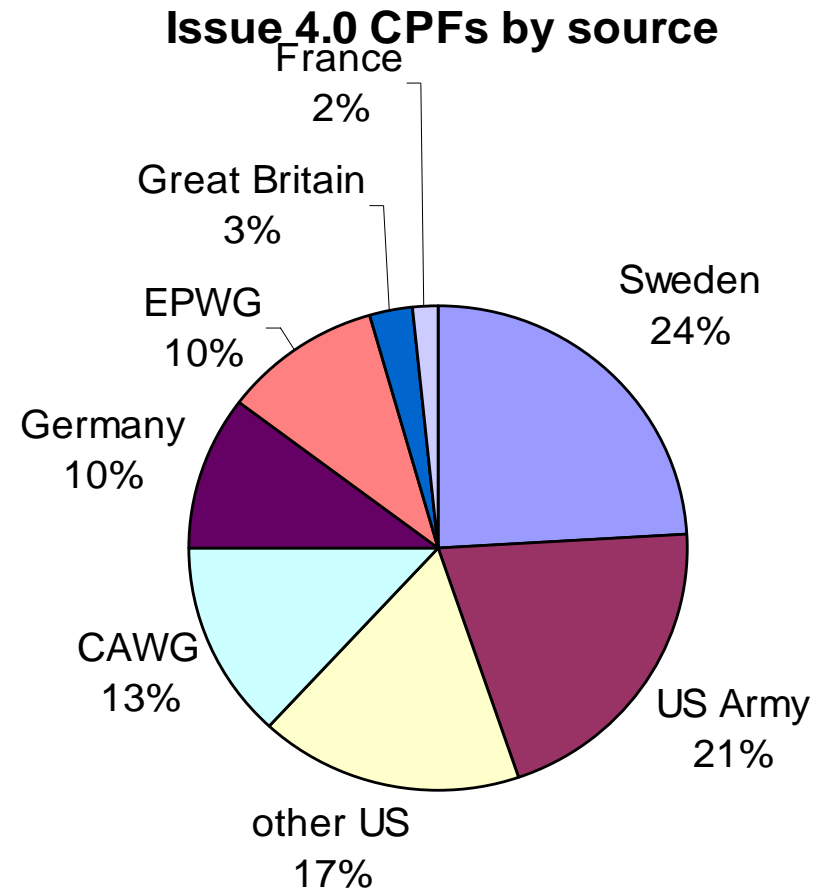
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**2008 ATA e-Business Forum and  
S1000D User Forum  
2008-10-21/23  
Budapest, Hungary**



# Issue 4.0 Scope

- 116 Change Proposals (CPFs)
- This is considered a complete re-issue (no change bars)
- Authoring rules for the specification were widely expanded and enforced
  - Chapter 3 can almost be considered a data dictionary
  - Common structure
    - 1 General
    - 2 Content
    - 3 Business rules
    - 4 Markup sample





# Issue 4.0

## Authoring rules



- Standard structure (chapter 3)
  - Description
  - Markup element
  - Attributes
  - Child elements
  - Business rules decisions
  - Markup example

Acronym term

**Description:** The element `<acronymTerm>` contains the acronym itself and a reference to its definition.

**Markup element:** `<acronymTerm>` (M)

**Attributes:**

- `internalRefId` (O), the target id of the acronym definition to be reused. Refer to [Chap 3.9.5.2.1.2](#)

**Child elements:**

- `<subScript>` (O), the items to be subscripted. Refer to [Para 2.1.10](#)
- `<superScript>` (O), the items to be superscripted. Refer to [Para 2.1.11](#)

**Business rules decisions:**

- None identified

**Markup example:**

The following example shows the coding of an acronym and its reuse by the attribute `internalRefId`:

```
<acronym id="acr-0001">
<acronymTerm>ASD</acronymTerm>
<acronymDefinition>AeroSpace and Defence Industries Association
of Europe</acronymDefinition>
</acronym>
...
<acronymTerm internalRefId="acr-0001">ASD</acronymTerm>
```

# Issue 4.0

## Authoring rules

- Business rules consolidation
  - Business rules are listed in context within the chapter

### Attributes:

- The change attributes must be set as described in [Para 2.3.3](#). The attribute `changeType` must be set to the value `delete`.

### Child elements:

- As described in [Para 2.3.3](#)

### Business rules decisions

Business rules decisions include, but are not limited to, the following:

- marking deletions
- rendering deleted information

### Markup example:

In the example that follows the second sub-step element `<proceduralStep>` and its contained element `<table>` have been deleted.



# Issue 4.0

## Authoring rules



- Business rules consolidation
  - Business rules are consolidated and expanded in paragraph 3

### Business rules decisions

Business rules decisions include, but are not limited to, the following:

**Marking deletions.** The project or the organization must decide if deletions are to be change marked. S1000D strongly recommends that deleted information is physically removed from an up-issued data module, and deleted change markers are not used. If a project decides to mark deletions, the rules given in [Para 2.4](#) must be applied. Refer to [Para 2.5.2](#) and [Para 2.5.3](#).

**Rendering deleted information.** The project or the organization must consider how deleted information is rendered. S1000D recommends that deletions are not rendered and that no change markings appear. Refer to [Para 2.5.2](#) and [Para 2.5.3](#).



# Issue 4.0

## Schema cleanup



### Why

- 20 years of DTD/Schema development
  - No established rules
  - Many developers over the years
- Conversion from SGML to XML in Issue 2.0
  - Straight conversion (for the most part)
  - Did not utilize XML capabilities
- Decision by TPSMG to stop support for SGML and DTDs in Issue 4.0
  - XML Schema only from Issue 4.0 on



# Issue 4.0

## Schema cleanup



### How

- Rules established for maintaining the schemas in the areas of:
  - naming XML objects
  - when to use an element versus an attribute
  - grouping objects into (reusable) groups
  - when redefinitions are allowed
  - element content models
  - use of typing and patterns
  - reference/link structures
  - data dictionary
- The schemas were modified to ensure conformance with the defined rules. The specific changes were fully documented in CPFs
- Harmonized elements between DMs, added element wrappers for easier presentation, renamed elements and attributes and restructured many elements



# Issue 4.0

## Schema cleanup



- Added wrapper for legend items
- Renamed element `<closetxt>` to `<closeRqmts>`
- Restored List of Applicable Publications (LOAP)
- Renamed element `<entfield>` to `<fillinAnswer>`
- Updated text in example elements `<indexValue>` and `<indexLength>`
- Deleted the `<remove>` element from the unary operations table
- Harmonized change markup
- Converted expression operators into attribute types
- Renamed attributes to be context-specific
- Harmonized reference structures
- Harmonized the identification of objects
- Harmonized required item consistency in preliminary requirements
- Added values to attribute `thresholdUnitOfMeasure`



## Issue 4.0



# Identification and status section

- Changed the order of children in element `<dmAddress>`
- Removed element `<age>` and element `<avee>`
- Changed attribute `inWork` from optional to required
- Restricted the definition of `<applic>` in this section to allow only inline referencing using the attribute `applicRefId`
- Added element `<supersedure>`
- Changed use of element `<copyright>` to optional
- Added element `<productSafety>` and attribute `safetyLabel`
- Added the optional element `<logo>`
- Deleted the element `<dmSize>`



# Issue 4.0

## Steps and paragraphs



- Introduced recursive elements (`<proceduralStep>` and `<levelledPara>`)
- Added definition list headers
- Changed narrative to be consistent with schema (titles on descriptive paragraphs and list display)
- Included security attributes on elements which render as paragraphs
- Added new attributes `itemCharacteristic`, `crewStepCondition` and `partCharacteristic` (also affects crew data module)
- Added attribute `keepWithNext`
- Clarified paragraph content per data module type



## Issue 4.0



# Warning, cautions and notes

- Added reusable warnings and cautions collection
- Added new element `<warningAndCautionPara>` to enforce existing narrative
- Changed to display order to optional
- Changed to allow restricted lists in notes



# Issue 4.0 Hotspots



- Added element `<internalRef>` to the element `<catalogSeqNumber>` in order to allow hotspot management in IPD data module



# Issue 4.0

## Process data module



- Included supporting information with dialog (on node)
- Added `<assertion>` to note conditions in state tables
- Added unary operators
- Loosened restrictions on figure placement



# Issue 4.0 References



- Removed attributes `pretext` and `posttext`
- Modified structure and added support for element `<reasonForUpdate>`

## Example

### Status section:

```
<reasonForUpdate id="rfu-001"><simplePara>Torque value updated...
```

### Content section:

```
<proceduralStep reasonForUpdateRefIds="rfu-001"  
  changeType="modify" changeMark="1">Tighten lug nuts to 30 Nm...
```



# Issue 4.0

## Publication module



- Changed `<pmEntryTitle>` to optional
- Added attribute `pmEntryType` with project configurable values



# Issue 4.0

## Information codes



- Added 31 Information Code (IC)s for US Army
- Defined IC 217 - Fill with hydrogen
- Defined IC 227 - Release hydrogen pressure
- Defined IC 236 - Fill with inert gas/inert liquid
- Defined IC 237 - Evacuate
- Defined IC 297 - Change of water
- Defined IC 28, modified IC 800
- Defined IC 961
- Amended and extended description of IC 230



# Issue 4.0

## IPD data module



- Added element `<descrForItem>` and attribute `descrForItemCode`



## Issue 4.0



# Preliminary requirements

- Added support for required technical information, number of personnel required and environmental conditions
- Restructured preliminary requirements, mainly element `<productionMaintData>`
- Added optional element `<shortName>` under element `<supportEquipDescr>`
- Added attribute `unitOfMeasure` to element `<estimatedTime>`



# Issue 4.0

## BREX data module



- Added concept of cascading BREX
- Added pattern value support



## Issue 4.0



# Technical information repository data module

- Added support for physical/functional breakdowns
- Added extra support for organization information
- Added support for reuse of controls and indicators
- Added support for maintenance level



## Issue 4.0



# Schedule data module

- Added element `<maintAllocation>`
- Added element `<commonInfo>` (also added to procedural data module and fault data module)
- Changed element `<fec>` to `<sourceType>`. Added project configurable tables for source criticality and source type code attributes
- Modified `<task>` element to include `<taskTitle>`, `<taskDescr>` and `<taskMarker>`
- Added support for airplane tasks
- Harmonized the values for attribute `limitTypeValue` in schema and narrative
- Defined relationship between maintenance requirements



# Issue 4.0



## Checklist data module

Table 1 Preventive Maintenance Checks and Services for Model M2A3/M3A3, Before –Continue

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			<p><b>WARNING</b></p> <p>Hydraulic fluid is poisonous and can be absorbed through your skin. Never service hydraulic system when fluid is hot or under pressure. Avoid skin contact. Wash hands with soap immediately after servicing, and wash off any fluid which comes in contact with skin. If fluid gets into eyes, wash eyes immediately and get medical help.</p> <p>b. Check ramp hydraulic power unit.</p> <ol style="list-style-type: none"> <li>1. Lower ramp (WP 0090).</li> <li>2. Remove ramp hydraulic power unit cover and check sight glass. If fluid level is below ADD mark, add FRH (MIL-H-46170) as needed. Never fill over halfway between ADD and FULL with ramp down. Ramp hydraulic power unit will be overfilled with ramp up.</li> <li>3. Install ramp hydraulic power unit cover.</li> <li>4. Raise ramp (WP 0090).</li> </ol>	
6	Before	Hull Drain Plugs	<p><b>Driver</b></p> <p>a. Check for open or missing front hull drain plug and that bridge plates are fully seated.</p>	Front hull drain plug is missing or bridge plates will not seat.
7	Before	Internal Fire Extinguisher	<p><b>Driver</b></p> <p>a. Check engine compartment fire extinguisher.</p> <ol style="list-style-type: none"> <li>1. Check wire or lead seals on engine compartment fire extinguisher.</li> <li>2. Check that pressure gage on engine compartment fire extinguisher is in green or yellow zone.</li> </ol> <p><b>NOTE</b></p> <p>If engine compartment fire extinguisher is in yellow zone, notify unit maintenance after mission is completed.</p>	<p>Wire or lead seals on engine compartment fire extinguisher are missing, broken or improperly laced.</p> <p>Pressure gage on engine compartment fire extinguisher reads in red zone.</p>

- Added new data module to support checklists
- Limited procedural data
- Not enough to make a data module
- Indicates on what condition the equipment is not ready for use
- Schedule schema does not allow nested tasks

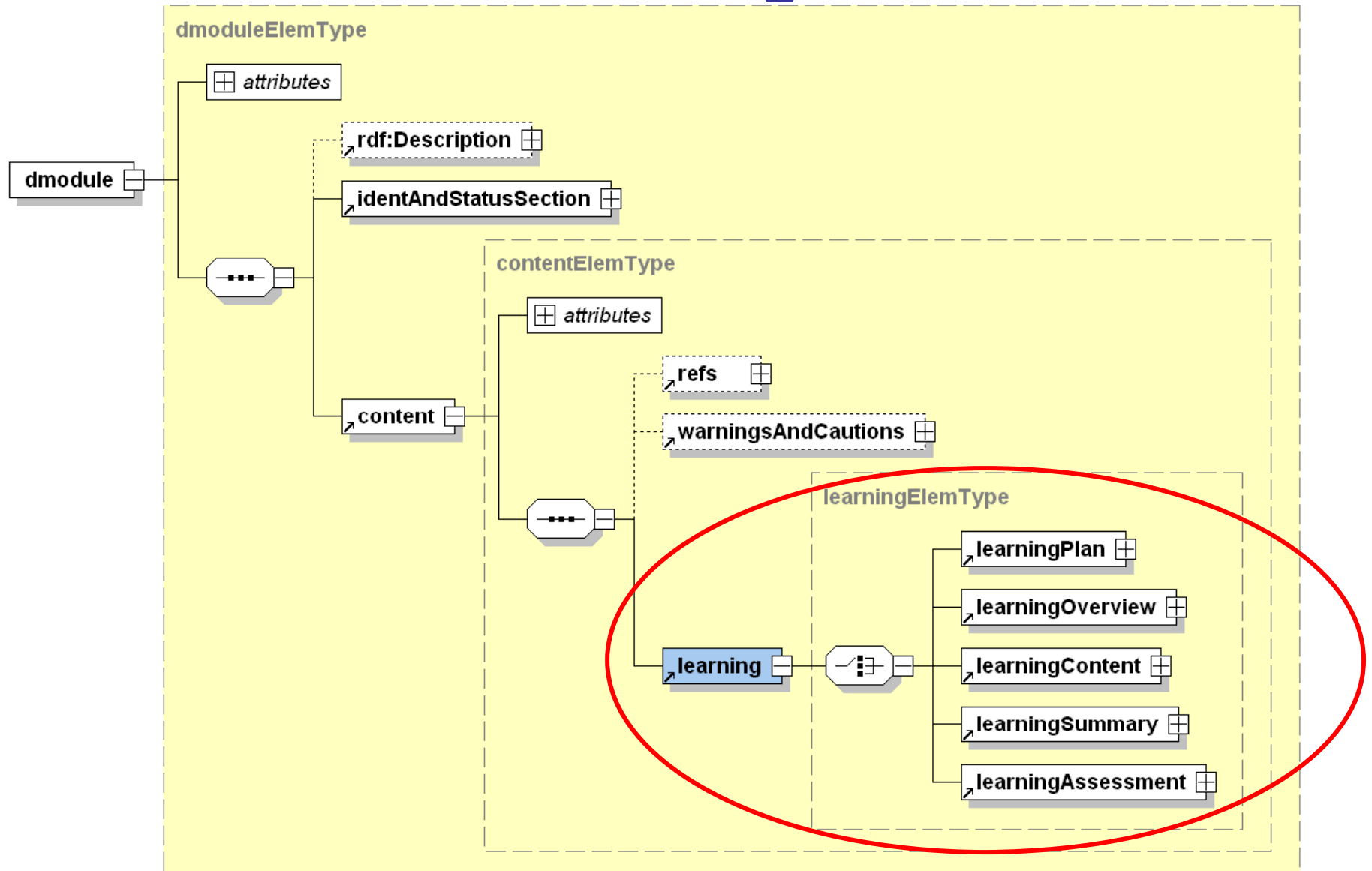


# Issue 4.0 Training

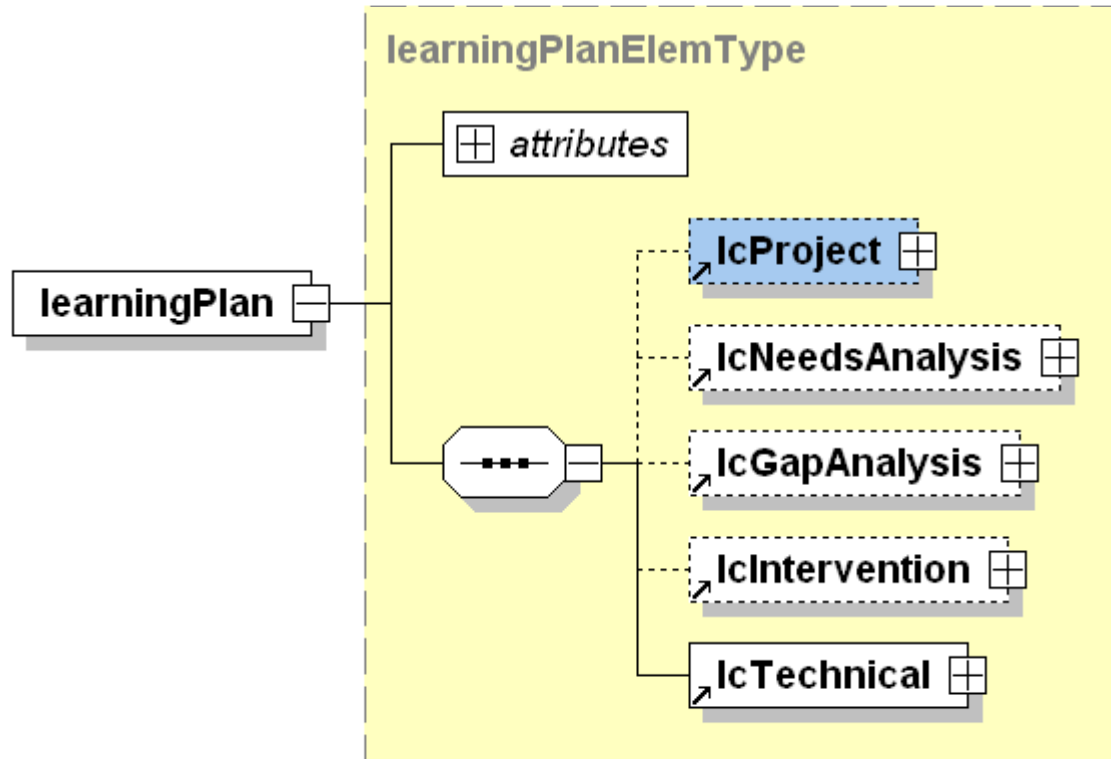


- Added new data modules to support training content
- Added optional learn code attributes to element `<dmCode>`

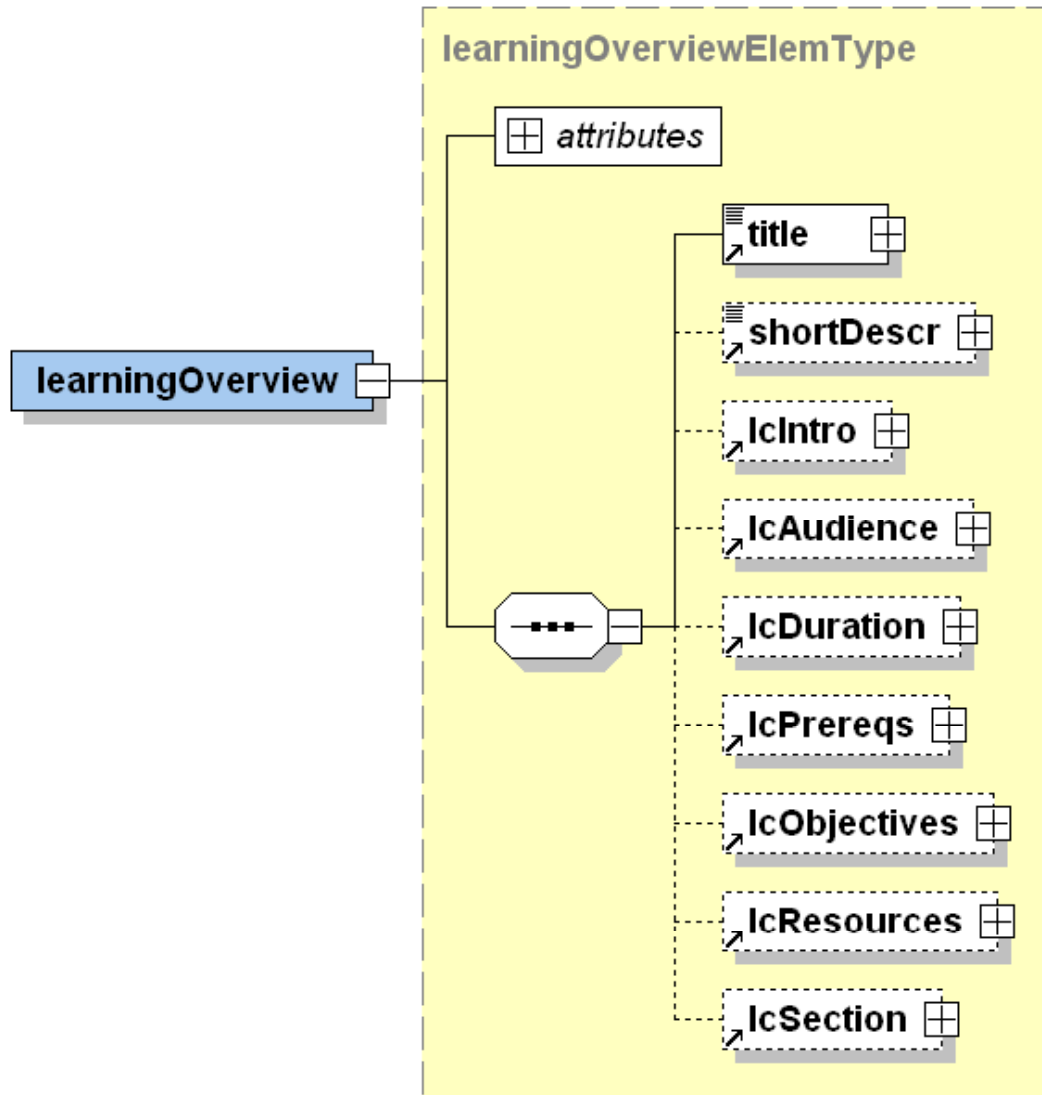
# Issue 4.0 Training



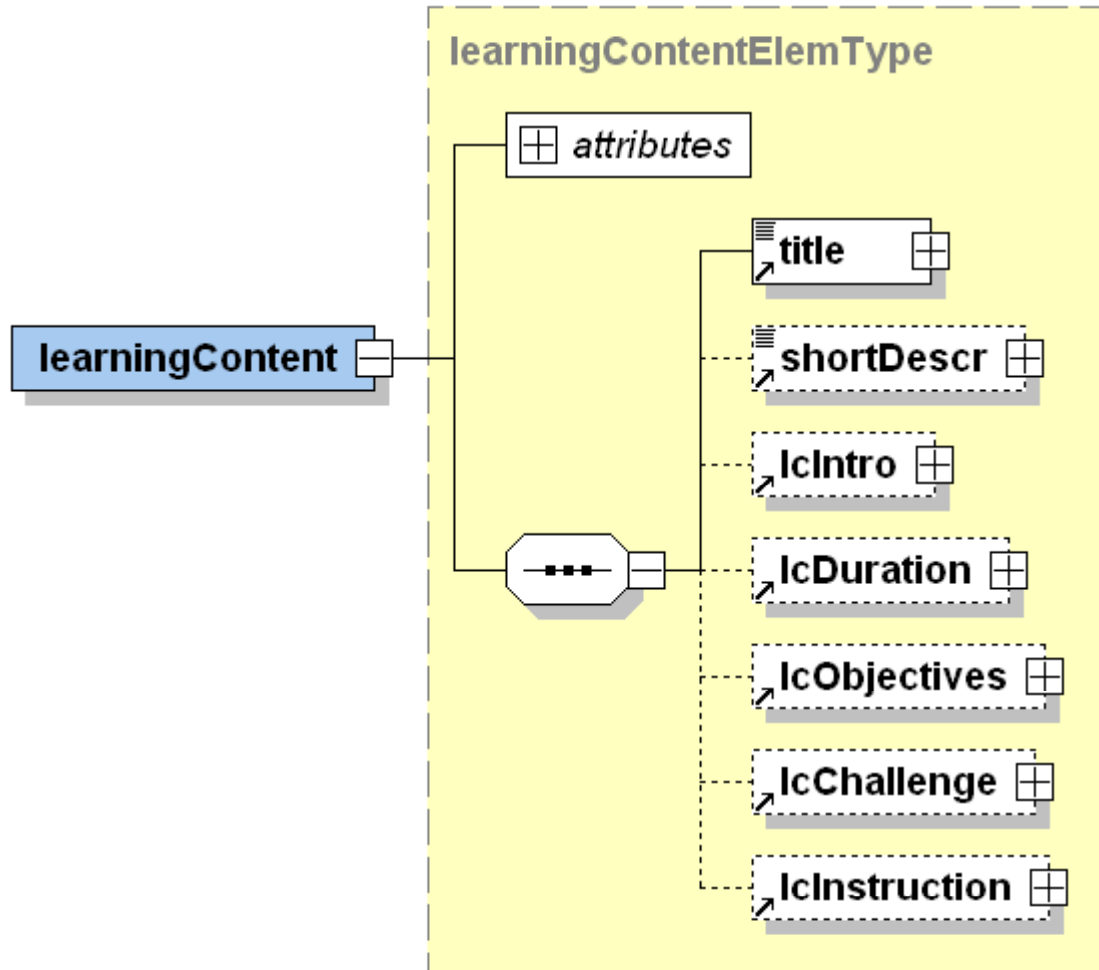
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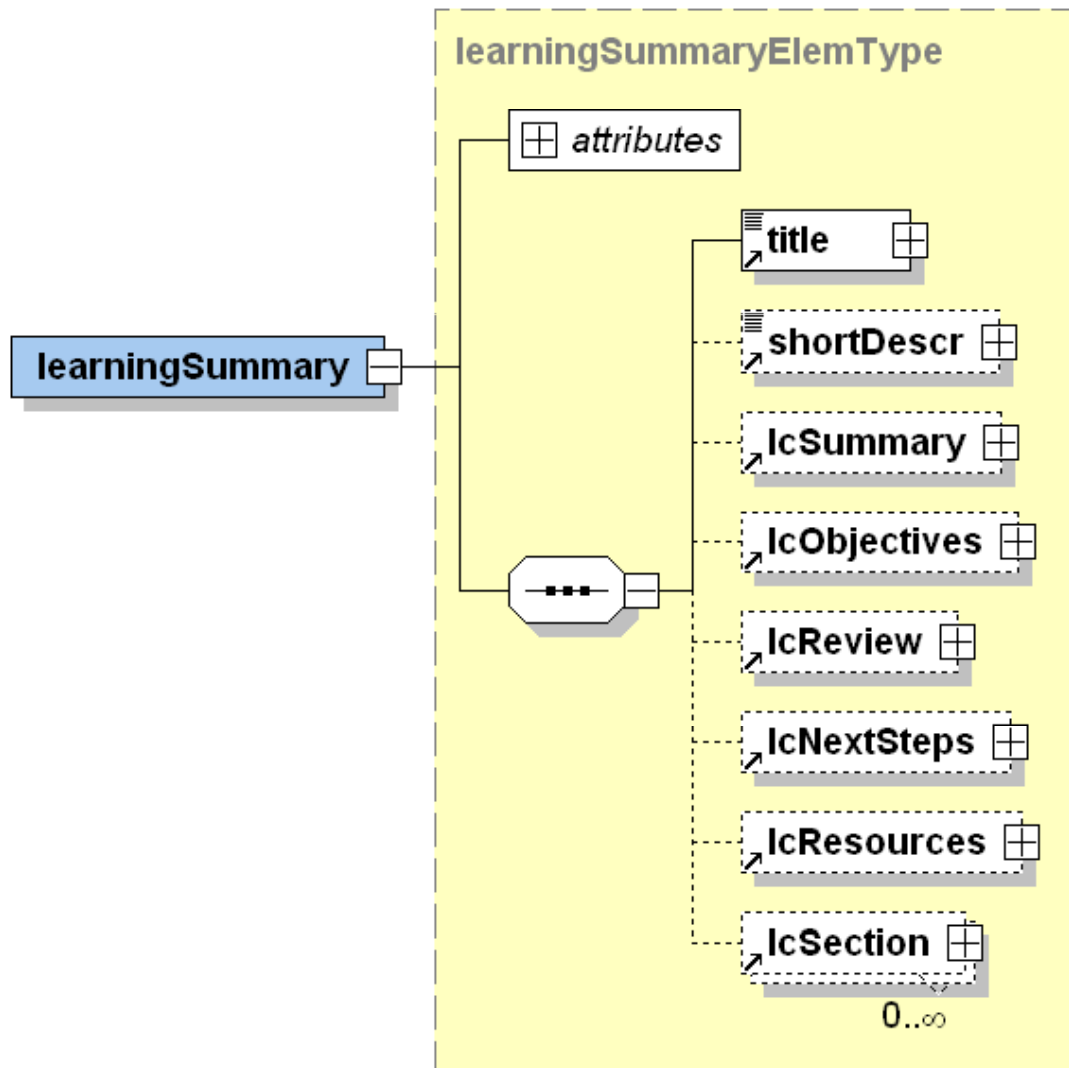
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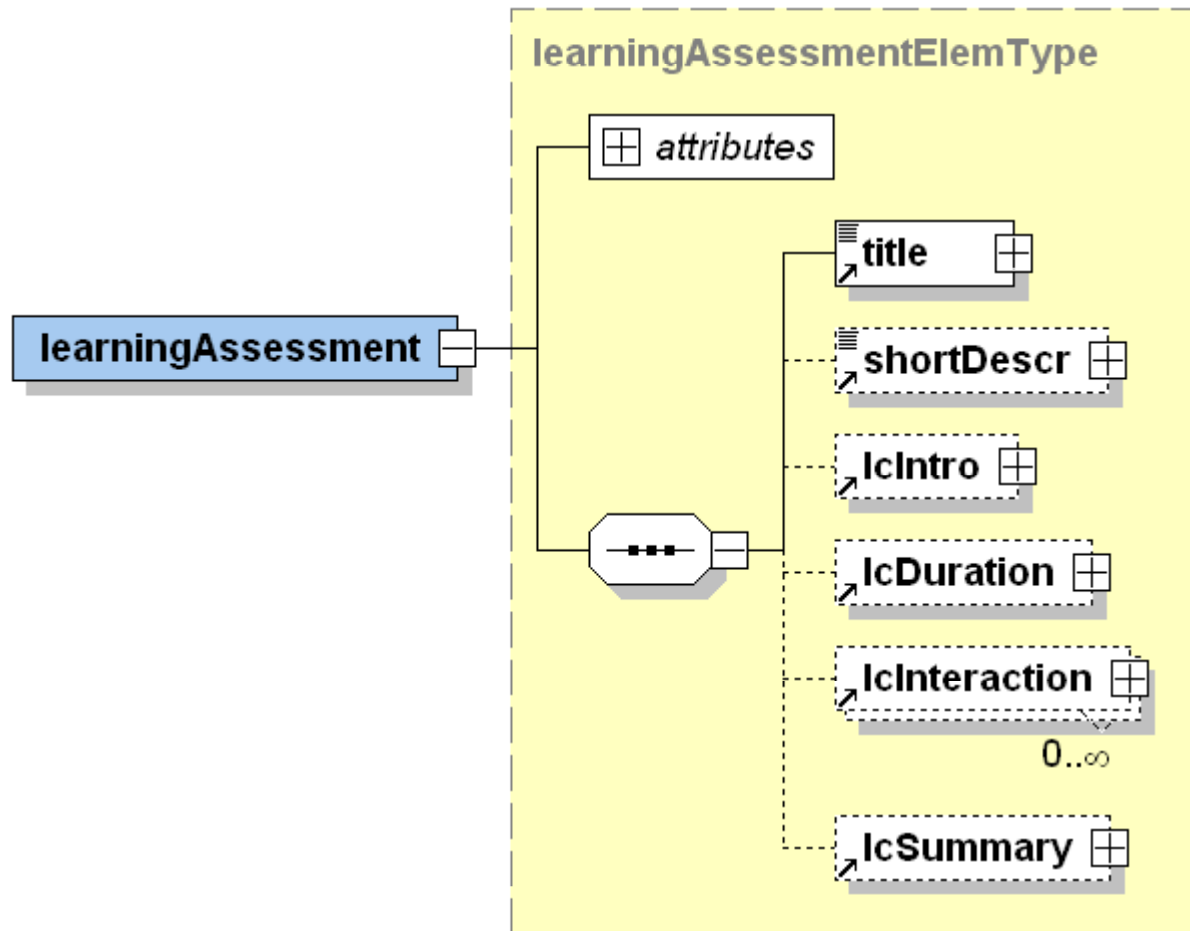
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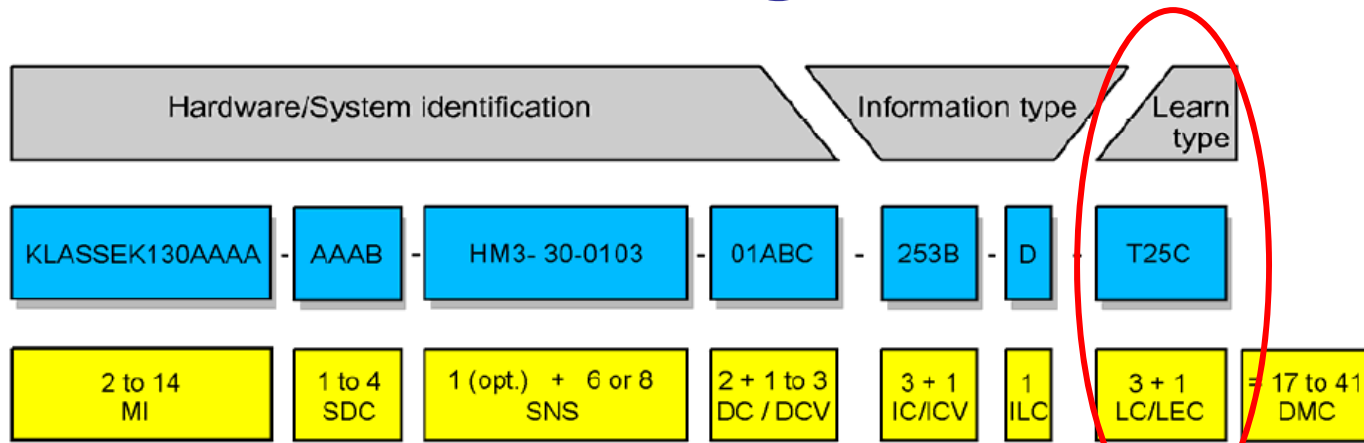
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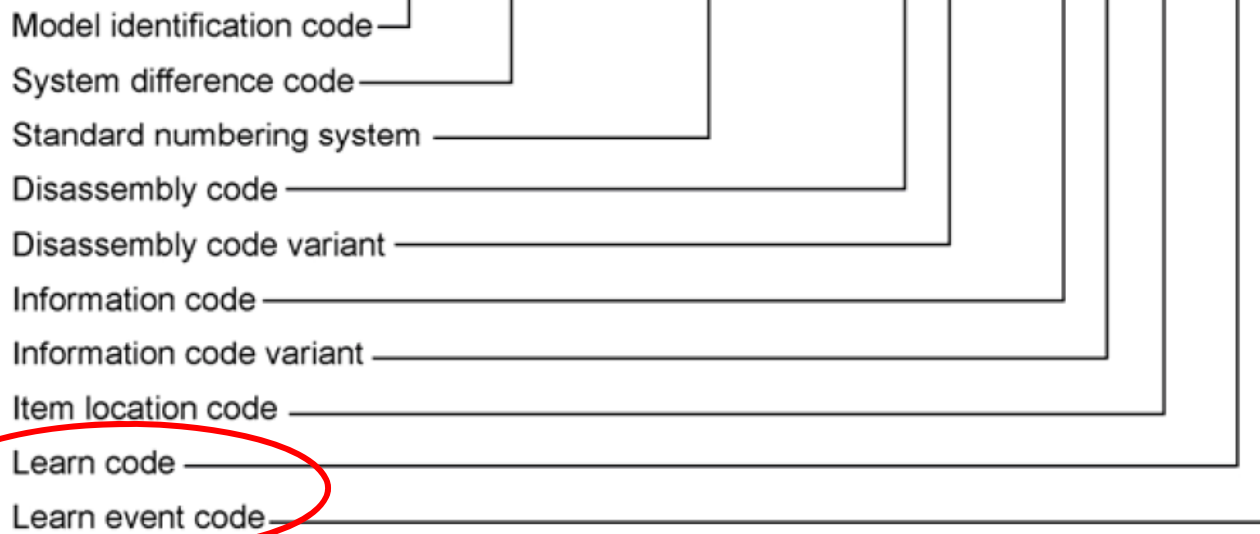


# Issue 4.0 Training



**DMC: 41 characters**

XXXXXXXXXXXXXXXX - YYYY - YY-YY-YYYY - YYYY - YYYY - Y - YYYY





# Issue 4.0

## Comment data module



- Loosened restrictions on module use



# Issue 4.0

## Miscellaneous



- Clarified the use of "Not given" vs. "NOT GIVEN"
- Repeated information regarding extended or qualified information name
- Changed CSN presentation
- Changed conflicting names so that schemas and specification coincide
- Loosened drawing reference requirements, language consistency, and consistency for specific information code use in paragraphs
- Changed foldout restrictions for paper
- Loosened restriction on the use of "End of data module"
- Increased flexibility for standard of measurement
- Added support for double-column presentation
- Loosened restrictions on minimum font size
- Loosened restrictions on page number presentation



# Issue 4.0

## Miscellaneous



- Modified ICN for human readability
- Loosened restrictions on illustration heights
- Changed wording from "self-standing" to "self-contained"
- Included support for submarine zoning
- Loosened restrictions on LOAP
- Inserted missing range narrative for attribute `installLocationType`
- Amended Yes/No dialog options
- Added support for business rule categories and layers
- Defined paper sizes more accurately
- Corrected data module code example
- Corrected table explanation



# Issue 4.0

## Miscellaneous



- Included technical information repository data module in `<dmRef>` usage exceptions
- Deleted maintenance plan definitions
- Harmonized the use of "must"
- Modified CPF process
- Harmonized the term "multimedia" to permit generic use
- Corrected narrative references to multimedia
- Corrected several typographical errors
- Modified content to be more human-readable
- Harmonized the use of various terms
- Harmonized the use of the attribute `issueType` with the narrative
- Included a 37-character data module code example
- Corrected referenced International Electrotechnical Commission (IEC) Publication



Questions?