

<b>Document Title</b>	TPS_GenericStructureTemplate: Complete Change Documentation 4.3.0 - 4.3.1
<b>Document Owner</b>	AUTOSAR
<b>Document Responsibility</b>	AUTOSAR
<b>Document Identification No</b>	695
<b>Document Status</b>	Final
<b>Part of AUTOSAR Standard</b>	Classic Platform
<b>Part of Standard Release</b>	4.3.1

## Table of Contents

1	TPS_GenericStructureTemplate	3
1.1	Specification Item constr_2515	3
1.2	Specification Item constr_2525	4
1.3	Specification Item constr_2547	7
1.4	Specification Item TPS_GST_00045	9
1.5	Specification Item TPS_GST_00086	11
1.6	Specification Item TPS_GST_00127	12
1.7	Specification Item TPS_GST_00128	14
1.8	Specification Item TPS_GST_00129	15
1.9	Specification Item TPS_GST_00130	17
1.10	Specification Item TPS_GST_00131	18
1.11	Specification Item TPS_GST_00132	20
1.12	Specification Item TPS_GST_00133	21
1.13	Specification Item TPS_GST_00134	23
1.14	Specification Item TPS_GST_00135	25
1.15	Specification Item TPS_GST_00136	26
1.16	Specification Item TPS_GST_00137	28
1.17	Specification Item TPS_GST_00138	29
1.18	Specification Item TPS_GST_00139	31
1.19	Specification Item TPS_GST_00140	32
1.20	Specification Item TPS_GST_00141	34
1.21	Specification Item TPS_GST_00142	36
1.22	Specification Item TPS_GST_00143	37
1.23	Specification Item TPS_GST_00144	39
1.24	Specification Item TPS_GST_00151	40
1.25	Specification Item TPS_GST_00381	42
1.26	Specification Item TPS_GST_00382	44
1.27	Specification Item TPS_GST_00383	46
1.28	Specification Item TPS_GST_00384	47

# 1 TPS\_GenericStructureTemplate

## 1.1 Specification Item constr\_2515

### Trace References:

none

### Content:

Note that it is in the responsibility of the stakeholders to ensure that no conflicting category occurs. If a non empty category is defined for a package, then all sub packages shall have empty category or the same category. See table [REF table\_3a\_RulesCategoriesOfSubPackages]. Additionally, the "Rules for references between elements in packages with specific categories" shall apply. See table [REF table\_3a\_RulesReferencesBetweenElementsPackagesSpecCategories].

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #76216: constr\_2515 is not a constraint

#### Problem description:

1. you don't start a constraint with "please note" ;-).
2. a constraint shall contain a clear rule that can be checked. That rule is hidden in the text of constr\_2515, it shall be made loud and clear.
3. The responsibility for taking care of the constraint is subject to TR\_Methodology, I guess ...

#### Agreed solution:

1. in GST reformulate the constr:

[constr\_2515] Avoid conflicting package categories d Note that it is in the responsibility of the stakeholders to ensure that no conflicting category occurs. c()

to

[constr\_2515] Categories of packages shall not conflict d

If a non empty category is defined for a package, then all sub packages shall have empty category or the same category. See table "Rules for categories of sub packages".

Additionally, the "Rules for references between elements in packages with specific categories" shall apply. See table "Rules for references between elements in

packages with specific categories"  
c()

2. in GST Insert below constr\_2515 the following tables:

"Rules for categories of sub packages" (as defined in attached file "Table that shows conflicting categories of packages 2", sheet "sub package categories"

"Rules for references between elements in packages with specific categories" (as defined in attached file "Table that shows conflicting categories of packages 2", sheet "references between elem pkgs"

3. in GST update TPS\_GST\_00086 with:

[TPS\_GST\_00086] Category of ARPackage d The value of attribute category of an ARPackage can be taken as an indication about the nature of the ARPackage's content.

Certain values of attribute category are standardized by AUTOSAR: STANDARD, BLUEPRINT, EXAMPLE, ICS. For the definition of custom values of attribute category [TPS\_GST\_00016] applies.

–Last change on issue 76216 comment 15–

#### BW-C-Level:

Application	Specification	Bus
4	4	1

## 1.2 Specification Item constr\_2525

#### Trace References:

none

#### Content:

Properties (namely aggregations and , references and primitive attributes) which are not marked as atpSplitable must be all together in one physical file. They must shall not be repeated in the split files unless they are required for proper merging. an attribute which is used as a part of the splitkey. Another special case is handling of atpStructuredComment, see TPS\_GST\_00381.

#### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #67839: TR\_IOAT\_00063: contradiction to constr\_2525?

#### Problem description:

This may be lawyer territory, and I'm not sure how this sorts out, but I could see the point that the regulations of constr\_2525 already extend to the case described in TR\_IOAT\_00063 (and thus render TR\_IOAT\_00063 redundant).

Maybe there is a historical background in the definition of TR\_IOAT\_00063 that slips my mind. But I'd like to at least have a discussion about this issue.

**Agreed solution:**

GST:

—

Insert after "These files are merged into one merged model the following sentences:

Properties (aggregations, references and primitive attributes) that have been decorated with the stereotype atpSplitable are called splitable elements.

Properties (aggregations, references and primitive attributes) that have not been decorated with the stereotype atpSplitable are called non splitable elements.

Reformulation of [constr\_2525]:

[constr\_2525] Non splitable elements shall not be repeated. Properties (namely aggregations, references and primitive attributes) which are not marked as atpSplitable shall be contained in one physical file. They shall not be repeated in the split files unless they are an attribute which is used as a part of the splitkey.

IOAT:

—

Reformulate to:

[TR\_IOAT\_00063] AUTOSAR tools SHOULD accept double defined elements as long as their non splitables are non conflicting d

Description:

AUTOSAR tools should load partial models containing double defined elements as long as their non splitable elements are non conflicting.

An AUTOSAR tool should indicate double defined elements with conflicting non splitable elements as error.

Elements are considered as conflicting if the same element is described in different files with different values.

Rational:

Ensure robustness and enable fixing of errors, e.g. violations of [constr\_2525].

–Last change on issue 67839 comment 25–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

- RfC #71982: make Identifiable.AdminData splittable

**Problem description:**

One Use Case: AR-PACKAGE contains AdminData and is splitted over several files. According to [constr\_2525] aggregations that are not atpSplittable shall not be repeated in the split files. BMW would like to have the AdminData for the Package in all files.

**Agreed solution:**

1. update constr\_2525 from:

[constr\_2525] Non splittable elements shall not be repeated d  
Properties (namely aggregations and attributes) which are not marked as  
atpSplittable must be all together in one physical file. They must not be repeated in  
the split files unless they are required for proper merging. c()

to:

constr\_2525] Non splittable elements shall not be repeated  
Properties (namely aggregations and attributes) which are not marked as atp-  
Splittable must be all together in one physical file. They shall not be repeated in the  
split files unless they are an attribute which is used as a part of the splitkey. Another  
special case is handling of atpStructuredComment, see TPS\_GST\_00yxc.

2. Introduce new chapter

2.3.3 StructuredComment Elements (atpStructuredComment)

AUTOSAR supports StructuredComment to provide auxiliary information with  
the goal to create a comment.

[TPS\_GST\_00xyz] atpStructuredComment

Elements marked as atpStructuredComment contain information that have no  
semantics in the model and may be ignored on model level.

[TPS\_GST\_00yxc] Interaction of atpStructuredComment and atpSplitable  
When merging multiple physical files according to 2.3.2 all elements marked as atpStructuredComment and all child elements may be ignored.

AUTOSAR : fileInfoComment (0..1) atpStructuredComment : SDG  
xsd.roleElement = true  
xsd.typeElement = false  
xml.SequenceOffset = -10

Give Use case: e.g. DB export.

Add example:

```
<AUTOSAR>
<FILE-INFO-COMMENT>
<SDGS>
<SDG GID="GENERATION-INFO">
<SD GID="TOOL-VERSION">ToolA.1.2.3</SD>
...
</SDG>
</SDGS>
</FILE-INFO-COMMENT>
<ADMIN-DATA/>
<INTRODUCTION/>
<AR-PACKAGES/>
</AUTOSAR>
–Last change on issue 71982 comment 21–
```

#### BW-C-Level:

Application	Specification	Bus
1	1	1

## 1.3 Specification Item constr\_2547

### Trace References:

none

### Content:

Ordered collections **which are splitable shall be in one partial model as a whole cannot be split**. In other words: In opposite to unordered collections - which can be distributed between partial models - ordered collections can only be placed as a whole in one of

the partial models. Otherwise the merge approach would influence the semantics of the collections.

### **RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #74047: Ordered collection

#### **Problem description:**

The constr\_2547 "Ordered collections cannot be split into partial models" talks about ordered collection but there is no description of how these can be identified.

Sure, we use the target-end qualifier "ordered" for this purpose, but the document nowhere mentions this, as far as I can see. And I guess that the GST would be the correct place to document this aspect.

Also, what exactly is the meaning of "Ordered collections which are splittable shall be in one partial model as a whole"?

This seems like a contradiction in itself because it basically says that ordered collection cannot be split, so there is no point in defining an ordered collection as splittable, right?

—Last change on issue 74047 comment 1—

#### **Agreed solution:**

The constr\_2547 "Ordered collections cannot be split into partial models" shall be reformulate to:

Ordered collections are collection whose order of elements is semantically meaningful. They are flagged as ordered according to the UML specification [link to Uni?ed Modeling Language: Superstructure, Version 2.0, OMG Available Specification, ptc/05-07-04]. Such collections cannot be split. In other words: In opposite to unordered collections - which can be distributed between partial models - ordered collections can only be placed as a whole in one of the partial models. Otherwise the merge approach would influence the semantics of the collections.

Hint: Update link of Uni?ed Modeling Language: Superstructure, Version 2.0, OMG Available Specification, ptc/05-07-04 to <http://www.omg.org/cgi-bin/apps/doc?formal/05-07-04>.

—Last change on issue 74047 comment 1—

#### **BW-C-Level:**



Application	Specification	Bus
1	1	1

- RfC #77615: No formal definition of "order collection"

**Problem description:**

The document mentions the term "ordered collection" multiple times. And there is also a footnote (!) that explains the meaning of ordered in the modeling.

But I was unable to find anything formal that defines the term.

Therefore, I'd wish that there were a specification item that can be quoted that defines the term and explains how it can be implemented in the model.

**Agreed solution:**

1. Reformulate [constr\_2547] Ordered collections cannot be split into partial models  
Ordered collections cannot be split. In other words: In opposite to unordered collections -

which can be distributed between partial models - ordered collections can only be placed as a whole in one of the partial models. Otherwise the merge approach would influence the semantics of the collections.

2. Add below [TPS\_GST\_00046] new TPS\_GST\_0000x Ordered collections:  
Ordered collections (relations with upper multiplicity > 1) are collection whose order of elements is semantically meaningful.

They are flagged as ordered according to the UML specification [6]. This ordering implies that there is a mapping from positive integers to the elements of the set of values.

3. Reformulate note above [constr\_2547]:

Note that «atpSplittable» on ordered collections indicates that the entire collection could be in a partial model.

—Last change on issue 77615 comment 2—

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.4 Specification Item TPS\_GST\_00045

**Trace References:**

none

**Content:**

- Inherited mixed properties are part of the mixed content and can freely be mixed with own mixed properties.
- Inherited properties from classes, which are not `atpMixed` themselves, are not part of the mixed content.
- Attributes (with `xml.attribute` set to true) and inherited **properties** **attributes** are not part of the mixed content.

Note further that in `atpMixedString` there are no inherited properties other than attributes **with** with `xml.attribute` set to true.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #75033: Inherited properties in mixed content

**Problem description:**

TPS\_GST\_00045 states:

Attributes (with `xml.attribute` set to true) and inherited properties are not part of the mixed content. Note further that in `_atpMixedString_` there are no inherited properties other than attributes with `xml.attribute` set to true.

This behavior is not implemented by the schema generator, it doesn't even make sense with some metaclasses, e.g. `BlueprintFormula` is derived from `SwSystemconstDependentFormula` (both are «`atpMixed`») where `BlueprintFormula` simply defines more expressions that can be used in the formula.

–Last change on issue 75033 comment 7–

**Agreed solution:**

Change the content of TPS\_GST\_00045 in such a way that it states:

1. attributes (and inherited attributes) are not part of the mixed content
2. inherited properties from classes, which are not «`atpMixed`» themselves, are not part of the mixed content
3. inherited mixed properties are part of the mixed content and can freely be mixed with own mixed properties

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.5 Specification Item TPS\_GST\_00086

### Trace References:

none

### Content:

Packages have a `ARPackage.category` indicating if the elements in this package are used for reference purposes or if they are used for processing. The standardized values are The value of attribute `Identifiable.category` of an `ARPackage` can be taken as an indication about the nature of the `ARPackage`'s content. Certain values of attribute `Identifiable.category` are standardized by AUTOSAR: STANDARD, BLUEPRINT, EXAMPLE, ICS. For the definition of custom values of attribute `Identifiable.category` TPS\_GST\_00016 applies.

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #76216: `constr_2515` is not a constraint

#### Problem description:

1. you don't start a constraint with "please note" ;-).
2. a constraint shall contain a clear rule that can be checked. That rule is hidden in the text of `constr_2515`, it shall be made loud and clear.
3. The responsibility for taking care of the constraint is subject to TR\_Methodology, I guess ...

#### Agreed solution:

1. in GST reformulate the `constr`:

[`constr_2515`] Avoid conflicting package categories d Note that it is in the responsibility of the stakeholders to ensure that no conflicting category occurs. c()

to

[`constr_2515`] Categories of packages shall not conflict d

If a non empty category is defined for a package, then all sub packages shall have empty category or the same category. See table "Rules for categories of sub packages".

Additionally, the "Rules for references between elements in packages with specific categories" shall apply. See table "Rules for references between elements in packages with specific categories"

c()

2. in GST Insert below constr\_2515 the following tables:

"Rules for categories of sub packages" (as defined in attached file "Table that shows conflicting categories of packages 2", sheet "sub package categories")

"Rules for references between elements in packages with specific categories" (as defined in attached file "Table that shows conflicting categories of packages 2", sheet "references between elem pkgs")

3. in GST update TPS\_GST\_00086 with:

[TPS\_GST\_00086] Category of ARPackage d The value of attribute category of an ARPackage can be taken as an indication about the nature of the ARPackage's content.

Certain values of attribute category are standardized by AUTOSAR: STANDARD, BLUEPRINT, EXAMPLE, ICS. For the definition of custom values of attribute category [TPS\_GST\_00016] applies.

—Last change on issue 76216 comment 15—

**BW-C-Level:**

Application	Specification	Bus
4	4	1

## 1.6 Specification Item TPS\_GST\_00127

**Trace References:**

none

**Content:**

This yields the absolute value of the operand.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77161: Tables in specification documents contain trace items

**Problem description:**

---

Name: Wolf-Hendrik Kaps

Phone: 0711-811-23288

Role: Jg-Tooling member

---

Description/Motivation:

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

### **Agreed solution:**

#### 1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

#### 2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

#### 2.1 GST: add these constraints

=====

#### 3. CP\_Tool\_Scripts

=====

- \* let latexinstatiaator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

### **BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.7 Specification Item TPS\_GST\_00128

### Trace References:

none

### Content:

This yields the natural logarithm (base e) of the **argument**.

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #77161: Tables in specification documents contain trace items

#### Problem description:

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

#### Description/Motivation:

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

#### Agreed solution:

##### 1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

## 2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

### 2.1 GST: add these constraints

=====

## 3. CP\_Tool\_Scripts

=====

- \* let latexinstatiator complain about Figures in Traceable
- \* note: tha table in traceable violates the schema and is flagged already
- \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

### BW-C-Level:

Application	Specification	Bus
1	1	1

## 1.8 Specification Item TPS\_GST\_00129

### Trace References:

none

### Content:

This yields the logarithm base 10 - **Provided** provided for A2L 1.6.

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #77161: Tables in specification documents contain trace items

### Problem description:

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

Description/Motivation:

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

—Last change on issue 77161 comment 3—

**Agreed solution:**

1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

2.1 GST: add these constraints

=====

3. CP\_Tool\_Scripts

=====



- \* let latexinstantiator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.9 Specification Item TPS\_GST\_00130

**Trace References:**

none

**Content:**

This yields the square root - **Provided** **provided** for A2L 1.6.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77161: Tables in specification documents contain trace items

**Problem description:**

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

**Description/Motivation:**

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

**Agreed solution:**

## 1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

## 2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

### 2.1 GST: add these constraints

=====

## 3. CP\_Tool\_Scripts

=====

- \* let latexinstatiator complain about Figures in Traceable
- \* note: tha table in traceable violates the schema and is flagged already
- \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

### BW-C-Level:

Application	Specification	Bus
1	1	1

## 1.10 Specification Item TPS\_GST\_00131

### Trace References:

none

### Content:

This yields sinus - **Provided** provided for A2L 1.6.

## RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #77161: Tables in specification documents contain trace items

### Problem description:

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

### Description/Motivation:

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

### Agreed solution:

#### 1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

#### 2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

#### 2.1 GST: add these constraints

=====

### 3. CP\_Tool\_Scripts

=====

- \* let latexinstantiator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.11 Specification Item TPS\_GST\_00132

**Trace References:**

none

**Content:**

This yields arcus sinus - **Provided** **provided** for A2L 1.6.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77161: Tables in specification documents contain trace items

**Problem description:**

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

**Description/Motivation:**

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

#### Agreed solution:

##### 1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

##### 2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

##### 2.1 GST: add these constraints

=====

##### 3. CP\_Tool\_Scripts

=====

- \* let latexinstatiaator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

#### BW-C-Level:

Application	Specification	Bus
1	1	1

## 1.12 Specification Item TPS\_GST\_00133

#### Trace References:

none

**Content:**

This yields cosinus - **Provided** **provided** for A2L 1.6.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77161: Tables in specification documents contain trace items

**Problem description:**

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

**Description/Motivation:**

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

**Agreed solution:****1. Affected Documents**

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

**2. Word2arxml and latex2arxml which is used by checkDocumentSource**

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

2.1 GST: add these constraints

=====

3. CP\_Tool\_Scripts

=====

- \* let latexinstantiator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.13 Specification Item TPS\_GST\_00134

**Trace References:**

none

**Content:**

This yields arcus cosinus - **Provided** **provided** for A2L 1.6.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77161: Tables in specification documents contain trace items

**Problem description:**

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

Description/Motivation:

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error

and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

### Agreed solution:

#### 1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

#### 2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

#### 2.1 GST: add these constraints

=====

#### 3. CP\_Tool\_Scripts

=====

- \* let latexinstatiaator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

### BW-C-Level:

Application	Specification	Bus
1	1	1



## 1.14 Specification Item TPS\_GST\_00135

### Trace References:

none

### Content:

This yields sinus hyperbolicus - **Provided** **provided** for A2L 1.6.

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #77161: Tables in specification documents contain trace items

#### Problem description:

---

Name: Wolf-Hendrik Kaps

Phone: 0711-811-23288

Role: Jg-Tooling member

---

#### Description/Motivation:

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

#### Agreed solution:

##### 1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

##### 2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

2.1 GST: add these constraints

=====

3. CP\_Tool\_Scripts

=====

- \* let latexinstatiator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

#### BW-C-Level:

Application	Specification	Bus
1	1	1

## 1.15 Specification Item TPS\_GST\_00136

### Trace References:

none

### Content:

This yields cosinus hyperbolicus - **Provided** **provided** for A2L 1.6.

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #77161: Tables in specification documents contain trace items

#### Problem description:

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

**Description/Motivation:**

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

**Agreed solution:****1. Affected Documents**

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

**2. Word2arxml and latex2arxml which is used by checkDocumentSource**

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

**2.1 GST: add these constraints**

=====

**3. CP\_Tool\_Scripts**

=====

- \* let latexinstatiaator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

**1.16 Specification Item TPS\_GST\_00137****Trace References:**

none

**Content:**

This yields tangens - **Provided** **provided** for A2L 1.6.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77161: Tables in specification documents contain trace items

**Problem description:**

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

**Description/Motivation:**

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

**Agreed solution:**

1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)

2. move Tables and figures out of the Traceable

2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

2.1 GST: add these constraints

=====

3. CP\_Tool\_Scripts

=====

- \* let latexinstantiator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.17 Specification Item TPS\_GST\_00138

**Trace References:**

none

**Content:**

This yields arcus tangens - **Provided** provided for A2L 1.6.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77161: Tables in specification documents contain trace items

**Problem description:**

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

**Description/Motivation:**

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

**Agreed solution:****1. Affected Documents**

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

**2. Word2arxml and latex2arxml which is used by checkDocumentSource**

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

**2.1 GST: add these constraints**

=====

**3. CP\_Tool\_Scripts**

=====

- \* let latexinstantiator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.18 Specification Item TPS\_GST\_00139

**Trace References:**

none

**Content:**

This yields tangens hyperbolicus - **Provided** provided for A2L 1.6.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77161: Tables in specification documents contain trace items

**Problem description:**

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

**Description/Motivation:**

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

**Agreed solution:**

## 1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

## 2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

## 2.1 GST: add these constraints

=====

## 3. CP\_Tool\_Scripts

=====

- \* let latexinstatiaator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

**1.19 Specification Item TPS\_GST\_00140****Trace References:**

none

**Content:**



This yields exponential function (base e).

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #77161: Tables in specification documents contain trace items

#### Problem description:

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

#### Description/Motivation:

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

#### Agreed solution:

##### 1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

##### 2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

2.1 GST: add these constraints

=====

3. CP\_Tool\_Scripts

=====

- \* let latexinstantiator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.20 Specification Item TPS\_GST\_00141

**Trace References:**

none

**Content:**

This checks whether the reference given as the argument is defined.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77161: Tables in specification documents contain trace items

**Problem description:**

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

**Description/Motivation:**

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to

elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables  
(77206, 74860)

–Last change on issue 77161 comment 3–

### Agreed solution:

#### 1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

#### 2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized  
here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

#### 2.1 GST: add these constraints

=====

#### 3. CP\_Tool\_Scripts

=====

- \* let latexinstatiaator complain about Figures in Traceable
- \* note: tha table in traceable violates the schema and is flagged already
- \* let latexinstantiator complain about traceable in tables

–Last change on issue 77161 comment 7–

### BW-C-Level:

Application	Specification	Bus
1	1	1

## 1.21 Specification Item TPS\_GST\_00142

### Trace References:

none

### Content:

This yields signum, result is one of -1, 0, +1 1.

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #77161: Tables in specification documents contain trace items

#### Problem description:

---

Name: Wolf-Hendrik Kaps

Phone: 0711-811-23288

Role: Jg-Tooling member

---

#### Description/Motivation:

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

#### Agreed solution:

##### 1. Affected Documents

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

##### 2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

2.1 GST: add these constraints

=====

3. CP\_Tool\_Scripts

=====

- \* let latexinstatiator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

#### **BW-C-Level:**

Application	Specification	Bus
1	1	1

## **1.22 Specification Item TPS\_GST\_00143**

### **Trace References:**

none

### **Content:**

This finds the maximum value of the arguments.

### **RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77161: Tables in specification documents contain trace items

#### **Problem description:**

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

**Description/Motivation:**

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

**Agreed solution:****1. Affected Documents**

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)
2. move Tables and figures out of the Traceable

**2. Word2arxml and latex2arxml which is used by checkDocumentSource**

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

**2.1 GST: add these constraints**

=====

**3. CP\_Tool\_Scripts**

=====

- \* let latexinstatiaator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.23 Specification Item TPS\_GST\_00144

**Trace References:**

none

**Content:**

This finds the minimum value of the arguments.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #77161: Tables in specification documents contain trace items

**Problem description:**

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: Jg-Tooling member

---

**Description/Motivation:**

Some specification documents contain tables which include trace items. E.g. SWS\_Com, table in 7.12.1 Development Errors, SWS\_Rte, Table 5.4: RTE Error and Status values.

As discussed in tooling session we should extend ValidateARXML routine to elicit trace items inside tables.

Further on we shall ensure that tracebles do not contain figures and tables (77206, 74860)

–Last change on issue 77161 comment 3–

**Agreed solution:****1. Affected Documents**

=====

1. Move the Traceable out of the f\*\*ing tables (see attachment)

## 2. move Tables and figures out of the Traceable

### 2. Word2arxml and latex2arxml which is used by checkDocumentSource

=====

let these scripts complain also requested by 77206, 74860 but summarized here

- \* Tables in Traceable
- \* Traceable in Tables
- \* Figures in Traceable

#### 2.1 GST: add these constraints

=====

### 3. CP\_Tool\_Scripts

=====

- \* let latexinstantiator complain about Figures in Traceable
  - \* note: tha table in traceable violates the schema and is flagged already
  - \* let latexinstantiator complain about traceable in tables
- Last change on issue 77161 comment 7–

#### BW-C-Level:

Application	Specification	Bus
1	1	1

## 1.24 Specification Item TPS\_GST\_00151

### Trace References:

none

### Content:

Specializations of **abstract relations marked as derived are also be marked derived but are not necessarily abstract.** This allows to specify concrete derivations derived relations are derived only if this is explicitly noted. **atpDerived** means an implicit relationship which is not explicitly expressed in the model (e.g. in the **as** element in the xml-schema). Rationale of non abstract specializations of derived relations shall be well documented.



## RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #76519: TPS\_GST\_00151 should be reformulated

### Problem description:

---

Name: Wolf-Hendrik Kaps  
Phone: 0711-811-23288  
Role: GST Document Owner

---

### Description/Motivation:

[TPS\_GST\_00151] Specializations of Derived Relations [ Specializations of abstract relations marked as derived are also be marked derived but are not necessarily abstract. This allows to specify concrete derivations. ]()

We (Tooling Group) interpret this as:

1. Specializations of derived relations are derived only if this is explicitly noted
2. MMT supports to introduce concrete (which means no stereotype `atpDerived`) specializations of derived relations. Even if jg tooling cannot imaging a proper use case.

In consequence, those concrete specializations should be marked as "obsolete" and MMT should raise a warning (# 76503)

3. `atpDerived` means an implicit relationship which is not explicitly expressed in the model (e.g. in the `as` element in the xml-schema)
4. rationale of non abstract specializations of derived relations shall be well documented

TPS\_GST\_00151 should be reformulated:

### Scenario for 2

=====

superclass: base (has stereotype `atpDerived`)

subclass

\* base (no stereotype `atpDerived`) -> this is a concrete and appears in schema

\* bsse (has stereotype `atpDerived`) -> this is still abstract and therefore does not appear in Schema

—Last change on issue 76519 comment 3—

### Agreed solution:

[TPS\_GST\_00151] Specializations of Derived Relations [

Specializations of derived relations are derived only if this is explicitly noted.

atpDerived means an implicit relationship which is not explicitly expressed in the model (e.g. in the as element in the xml-schema).

Rationale of non abstract specializations of derived relations shall be well documented. ]()

–Last change on issue 76519 comment 3–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.25 Specification Item TPS\_GST\_00381

**Trace References:**

none

**Content:**

Elements marked as atpStructuredComment contain information that have no semantics in the model and may be ignored on model level.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #71982: make Identifiable.AdminData splittable

**Problem description:**

One Use Case: AR-PACKAGE contains AdminData and is splitted over several files. According to [constr\_2525] aggregations that are not atpSplittable shall not be repeated in the split files. BMW would like to have the AdminData for the Package in all files.

**Agreed solution:**

1. update constr\_2525 from:

[constr\_2525] Non splittable elements shall not be repeated d Properties (namely aggregations and attributes) which are not marked as atpSplittable must be all together in one physical ?le. They must not be repeated in the split ?les unless they are required for proper merging. c()

to:

constr\_2525] Non splittable elements shall not be repeated

Properties (namely aggregations and attributes) which are not marked as atp-Splittable must be all together in one physical file. They shall not be repeated in the split files unless they are an attribute which is used as a part of the splitkey. Another special case is handling of atpStructuredComment, see TPS\_GST\_00yxc.

## 2. Introduce new chapter

### 2.3.3 StructuredComment Elements (atpStructuredComment)

AUTOSAR supports StructuredComment to provide auxiliary information with the goal to create a comment.

[TPS\_GST\_00xyz] atpStructuredComment

Elements marked as atpStructuredComment contain information that have no semantics in the model and may be ignored on model level.

[TPS\_GST\_00yxc] Interaction of atpStructuredComment and atpSplittable

When merging multiple physical files according to 2.3.2 all elements marked as atpStructuredComment and all child elements may be ignored.

AUTOSAR : fileInfoComment (0..1) atpStructuredComment : SDG

xsd.roleElement = true

xsd.typeElement = false

xml.SequenceOffset = -10

Give Use case: e.g. DB export.

Add example:

```
<AUTOSAR>
<FILE-INFO-COMMENT>
<SDGS>
<SDG GID="GENERATION-INFO">
<SD GID="TOOL-VERSION">ToolA.1.2.3</SD>
...
</SDG>
</SDGS>
</FILE-INFO-COMMENT>
<ADMIN-DATA/>
<INTRODUCTION/>
<AR-PACKAGES/>
```

&lt;/AUTOSAR&gt;

–Last change on issue 71982 comment 21–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.26 Specification Item TPS\_GST\_00382

**Trace References:**

none

**Content:**

When merging multiple physical files according to [REF chap\_3a\_SplitableElements] all elements marked as `atpStructuredComment` and all child elements may be ignored.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #71982: make `Identifiable.AdminData` splitable

**Problem description:**

One Use Case: AR-PACKAGE contains `AdminData` and is splitted over several files. According to [constr\_2525] aggregations that are not `atpSplitable` shall not be repeated in the split files. BMW would like to have the `AdminData` for the Package in all files.

**Agreed solution:**

1. update `constr_2525` from:

[constr\_2525] Non splitable elements shall not be repeated d Properties (namely aggregations and attributes) which are not marked as `atpSplitable` must be all together in one physical ?le. They must not be repeated in the split ?les unless they are required for proper merging. c()

to:

`constr_2525`] Non splitable elements shall not be repeated Properties (namely aggregations and attributes) which are not marked as `atp-Splitable` must be all together in one physical file. They shall not be repeated in the split files unless they are an attribute which is used as a part of the splitkey. Another special case is handling of `atpStructuredComment`, see `TPS_GST_00yxc`.

## 2. Introduce new chapter

### 2.3.3 StructuredComment Elements (atpStructuredComment)

AUTOSAR supports StructuredComment to provide auxiliary information with the goal to create a comment.

[TPS\_GST\_00xyz] atpStructuredComment

Elements marked as atpStructuredComment contain information that have no semantics in the model and may be ignored on model level.

[TPS\_GST\_00yxc] Interaction of atpStructuredComment and atpSplitable

When merging multiple physical files according to 2.3.2 all elements marked as atpStructuredComment and all child elements may be ignored.

AUTOSAR : fileInfoComment (0..1) atpStructuredComment : SDG

xsd.roleElement = true

xsd.typeElement = false

xml.SequenceOffset = -10

Give Use case: e.g. DB export.

Add example:

```
<AUTOSAR>
<FILE-INFO-COMMENT>
<SDGS>
<SDG GID="GENERATION-INFO">
<SD GID="TOOL-VERSION">ToolA.1.2.3</SD>
...
</SDG>
</SDGS>
</FILE-INFO-COMMENT>
<ADMIN-DATA/>
<INTRODUCTION/>
<AR-PACKAGES/>
</AUTOSAR>
–Last change on issue 71982 comment 21–
```

#### BW-C-Level:

Application	Specification	Bus
1	1	1

## 1.27 Specification Item TPS\_GST\_00383

### Trace References:

none

### Content:

Ordered collections (relations with upper multiplicity > 1) are collection whose order of elements is semantically meaningful. They are flagged as ordered according to the UML specification UML. This ordering implies that there is a mapping from positive integers to the elements of the set of values.

### RfCs affecting this spec item between releases 4.3.0 and 4.3.1:

- RfC #77615: No formal definition of "order collection"

#### Problem description:

The document mentions the term "ordered collection" multiple times. And there is also a footnote (!) that explains the meaning of ordered in the modeling.

But I was unable to find anything formal that defines the term.

Therefore, I'd wish that there were a specification item that can be quoted that defines the term and explains how it can be implemented in the model.

#### Agreed solution:

1. Reformulate [constr\_2547] Ordered collections cannot be split into partial models  
Ordered collections cannot be split. In other words: In opposite to unordered collections -

which can be distributed between partial models - ordered collections can only be placed as a whole in one of the partial models. Otherwise the merge approach would influence the semantics of the collections.

2. Add below [TPS\_GST\_00046] new TPS\_GST\_0000x Ordered collections:

Ordered collections (relations with upper multiplicity > 1) are collection whose order of elements is semantically meaningful.

They are flagged as ordered according to the UML specification [6]. This ordering implies that there is a mapping from positive integers to the elements of the set of values.

3. Reformulate note above [constr\_2547]:

Note that «atpSplittable» on ordered collections indicates that the entire collection

could be in a partial model.

–Last change on issue 77615 comment 2–

**BW-C-Level:**

Application	Specification	Bus
1	1	1

## 1.28 Specification Item TPS\_GST\_00384

**Trace References:**

none

**Content:**

During the variant handling model transformation some connectors from the metaclasses participating in the variant handling pattern to other metaclasses are created. Those other metaclasses either exist already in the annotated metamodel or they are created during the transformation. The already existing metaclasses are the following:

- VariationPoint (for Property Set Pattern, Aggregation Pattern, and Association Pattern)
- {Type}ValueVariationPoint (for Attribute Value Pattern: {Type} as stated in TPS\_GST\_00205)
- AbstractEnumerationValueVariationPoint (for Attribute Value Pattern)

During the transformation these metaclasses are connected by naming convention i.e. need to be found by their class name in the annotated metamodel. Therefore the transformation relies on the existence and uniqueness (by class name) of these metaclasses.

**RfCs affecting this spec item between releases 4.3.0 and 4.3.1:**

- RfC #53752: [optimizing] AttributeValueVariationPoints should not be hardwired in MMT

**Problem description:**

The connection between a AttributeValueVariation point and the corresponding invariant type is

\* hardwired in MMT

\* done based on naming conventions

This is a maintenance problem.

–Last change on issue 53752 comment 11–

### Agreed solution:

MMT

===

- 1) Remove the hardwired list in MMT.
- 2) Instead let MMT find the respective ValueVariationPoint class by using the name pattern specified in [TPS\_GST\_00205]. If such class is not found then such a attribute does not support variation and MMT shall raise an error.

GST

===

Add to chapter 7.1.10:

[TPS\_GST\_XXXX1] Naming conventions in variant handling patterns |\_  
During the variant handling model transformation some connectors from the metaclasses participating in the variant handling pattern to other metaclasses are created. Those other metaclasses either exist already in the annotated metamodel or they are created during the transformation.

The already existing metaclasses are the following:

- \* VariationPoint (for Property Set Pattern, Aggregation Pattern, and Association Pattern)
- \* TypeValueVariationPoint (for Attribute Value Pattern: Type as stated in [TPS\_GST\_00205])
- \* AbstractEnumerationValueVariationPoint (for Attribute Value Pattern)

During the transformation these metaclasses are connected by naming convention i.e. need to be found by their class name in the annotated metamodel. Therefore the transformation relies on the existence and uniqueness (by class name) of these metaclasses.

|\_

–Last change on issue 53752 comment 17–

### BW-C-Level:

Application	Specification	Bus
1	1	1