

SIG3D

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Bericht aus der SIG3D AG Qualität



Dr.-Ing. Egbert Casper

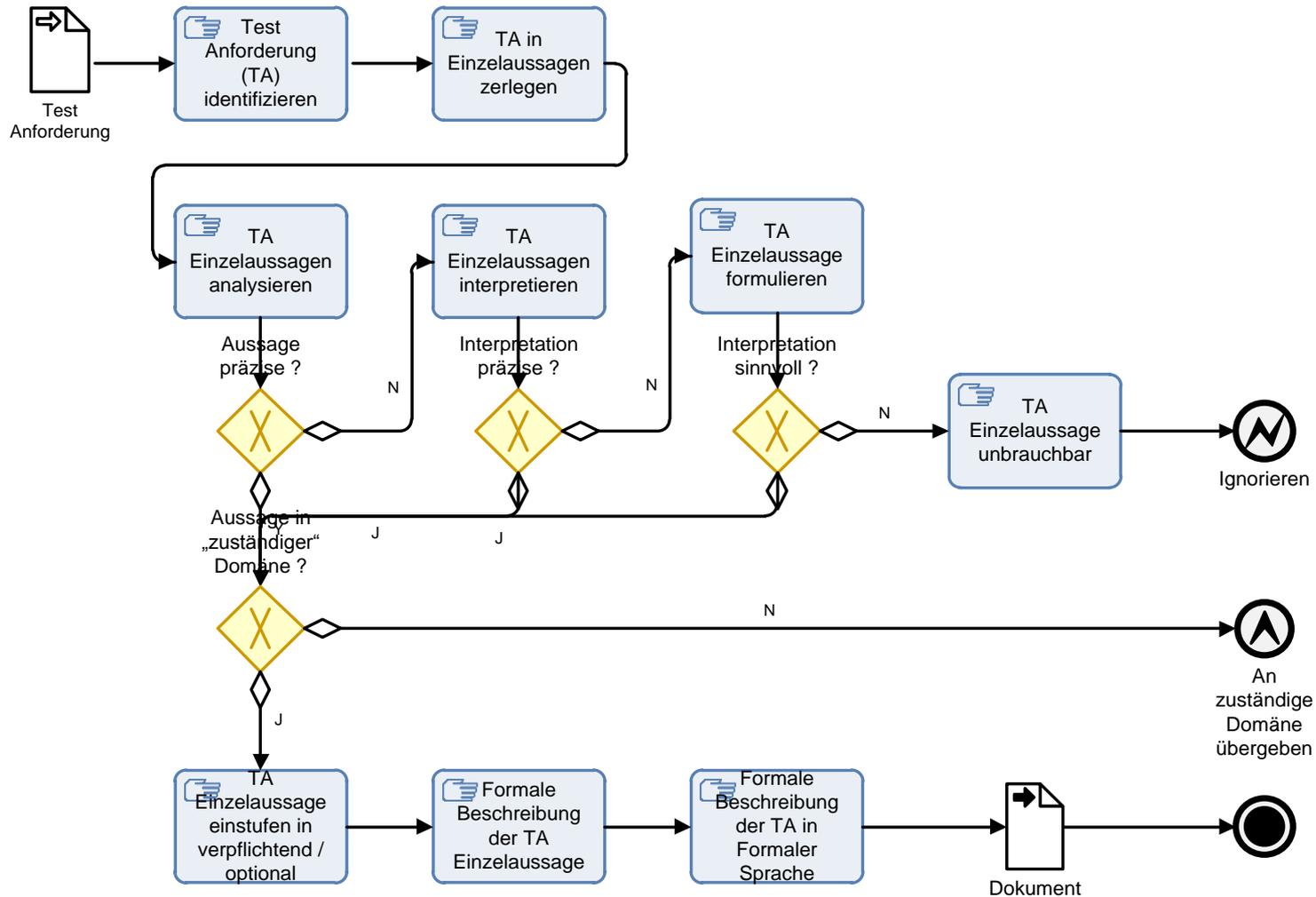


- **Fortführung des Testhandbuchs im Zusammenspiel mit dem OGC CityGML Quality Interoperability Experiment:**
 - **Exp 1: Schema Validität** → **HfT Stuttgart**
 - **Exp 2: Geometrieprüfungen** → **TU Delft**
 - **Exp 3: Semantikprüfungen** → **HfT Stuttgart**
 - **Exp 4: Conformance Requirements** → **SIG3D**
 - **Katalog von Standardtests**
 - **Einarbeitung der Produktspezifikation der AdV**

AG Qualität – bisher erreichte Ziele im Rahmen des QIE

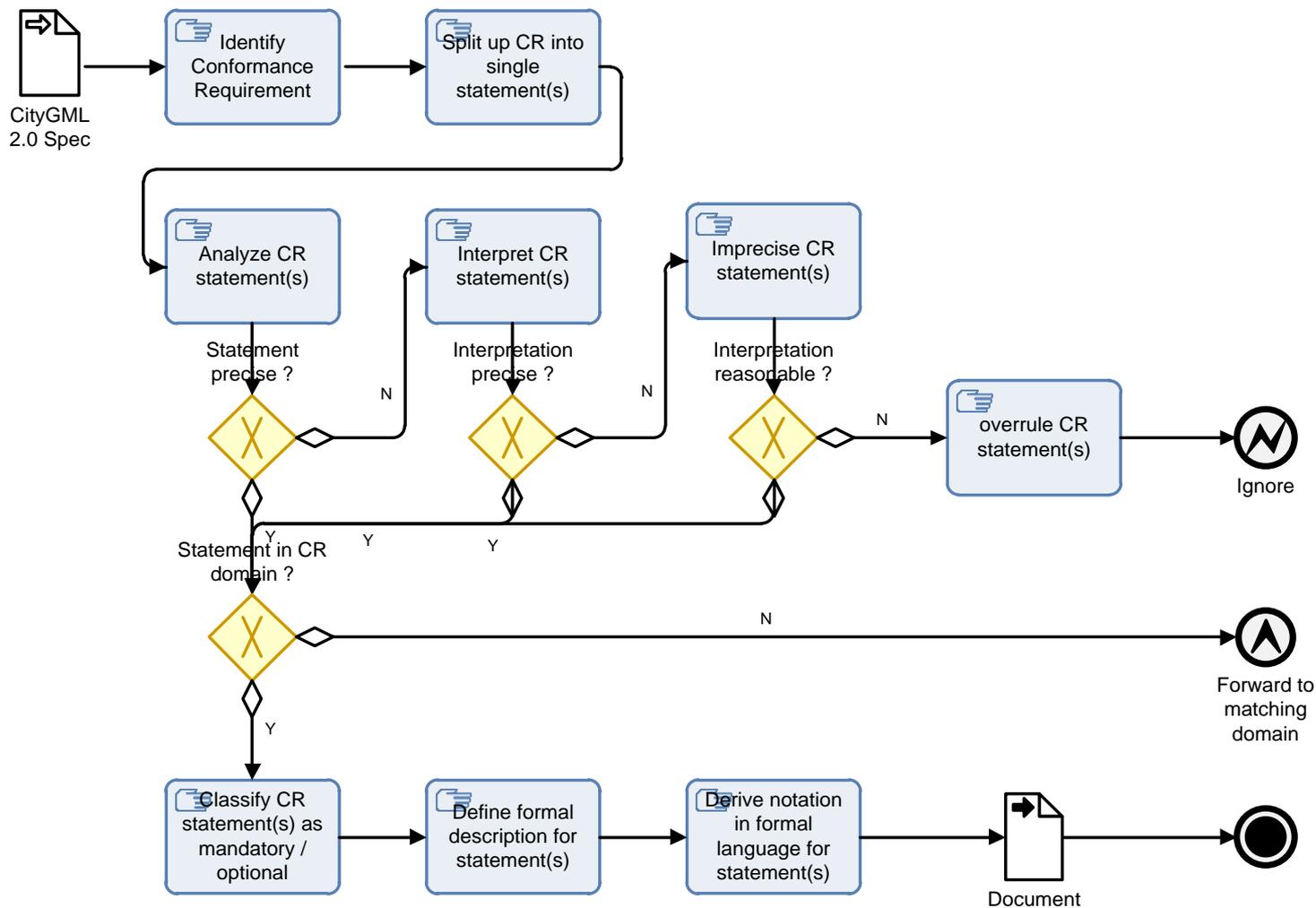
- **Exp 1 – Schema Validierung**
- **Exp 2 – Geometrieprüfung**
 - **Agreement über Art und Umfang der Geometrietests**
 - **Testdaten**
- **Exp 3 - Semantikprüfung**
 - **Zusammenstellung von Tests**
 - **Abgrenzung und Abstimmung mit Exp 4**
- **Exp 4 – Conformance Requirements**
 - ✓ **Identifikation der CityGML Conformance Requirements**
 - ✓ **Agreement über Prozessbeschreibung**
 - ✓ **Agreement über Dokumentation**
 - ✓ **Agreement über formale Sprache**

• Prozessbeschreibung Tests



AG Qualität – Conformance Requirements

• Prozessbeschreibung Conformance Requirements



AG Qualität – Conformance Requirements

- ein Eindruck von der Arbeit der AG (<http://quality.citygmlwiki.org>)

Seite Diskussion Bearbeiten Versionsgeschichte Verschieben Beobachten	
-CO-bldg:BU-001	
Parameter	Value
Req Id	CO-bldg:BU-001
Short Desc	(Building --- BuildingPart)
Citation	<p>(A) If a building only consists of one (homogeneous) part, it shall be represented by the element Building.</p> <p>(B) However, if a building is composed of individual structural segments, it shall be modelled as a Building element having one or more additional BuildingPart elements.</p> <p>(C) Only the geometry and non-spatial properties of the main part of the building should be represented within the aggregating Building element.</p>
Source	CityGML 2.0 10.3.9 (1), p. 78
Interpretation	<p>[I.1] (A) + (B): How to model Building and BuildingPart? Currently the schema allows for a building to be modelled as Building with or without BuildingParts (containing in turn again BuildingParts..), but also a building to be modelled as a BuildingPart containing more BuildingParts and containing more BuildingParts and so on (so no Building super parent..). I think this second case is unwanted and could be resolved in schema by setting multiplicity of the aggregation of BuildingPart to _AbstractBuilding from "*" to "1..*". So that a BuildingPart ALWAYS needs to have a parent, is the parent again a BuildingPart then it in turn should also have AbstractBuilding parent.. this chain is only broken when a Building as top parent is met.</p> <p>[I.2] (A) + (B): Even if this is implemented it is still allowed (by the schema) to model a building as a Building containing BuildingParts which again contain BuildingParts which again contain BuildingParts etc.. Also this Conformance Requirement CO-bldg:BU-001 does not explicitly say that this should not be the case. But maybe this is unwanted and should be enforced.</p> <p>[I.3] (A) + (B): The Comment whether a building is one homogeneous part or composed of structural segments is not formalizable because "homogenous parts" and "structural elements" is unclear terminology which cannot be interpreted by a computer. Only possibility is perhaps by computing the convex hull of Buildings (that do not have BuildingParts) -> if the volume of the convex hull is much larger than the volume of the Building itself, could indicate that it should be modelled as a Building with BuildingParts, see image underneath. This building should be modelled with BuildingParts, the convexhull (or boundingvolume) is much larger than the volume of the building.</p> <p>[I.4] (C): When a Building element contains a BuildingPart element WITH geometry, THEN the building element itself should also have geometry. Geometry means in this case: lodxSolid OR lodXMultiSurface (direct property or over boundedBy).</p>

- ein Eindruck von der Arbeit der AG

[F.1] from [D.1]:

Schema:

Set the multiplicity of the aggregation of BuildingPart to _AbstractBuilding from "*" to "1..*" (Note that the multiplicities on the "not-arrow-side" of an association is not mapped in GML. So changing the UML model in this way would not have any schema effect. However, I understood that in cityGML 3.0 the UML diagram is going to be leading, so its something to take into account for the new version of cityGML).

Schematron:

```
<schema xmlns="http://purl.oclc.org/dsdl/schematron" queryBinding="xslt2">
  <ns uri="http://www.opengis.net/gml" prefix="gml"/>
  <ns uri="http://www.opengis.net/citygml/building/1.0" prefix="bldg"/>
  <pattern>
    <rule context="bldg:BuildingPart">
      <assert test="count(ancestor::bldg:Building) = 1">BuildingPart with id <value-of select="@gml:id"/> has no Building as ancestor</assert>
    </rule>
  </pattern>
</schema>
```

[F.2] from [D.2]: PseudoAlgorithm:

For all (BuildingPart) exist (Building) with (Building\consistsOfBuildingPart == BuildingPart)

Schematron:

```
<schema xmlns="http://purl.oclc.org/dsdl/schematron" queryBinding="xslt2">
  <ns uri="http://www.opengis.net/gml" prefix="gml"/>
  <ns uri="http://www.opengis.net/citygml/building/1.0" prefix="bldg"/>
  <pattern>
    <rule context="bldg:BuildingPart">
      <assert test="count(..../self::bldg:Building) = 1">BuildingPart with id <value-of select="@gml:id"/> has no Building as parent</assert>
    </rule>
  </pattern>
</schema>
```

[F.3] from [D.3]:

Schematron:

AG Qualität – nächste Schritte

- **Sie sind herzlich eingeladen, sich zu beteiligen !**

- **nächste WebSession der AG Qualität / QIE Exp 4:**

07.01.2014 10:00

- **nächstes Live-Meeting des QIE (voraussichtlich Abschlusstreffen):**

26./27.01.2015 beim BKG in Frankfurt

... noch Fragen ???

... dann bitte fragen !!!

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