

Temporal ADE for CityGML

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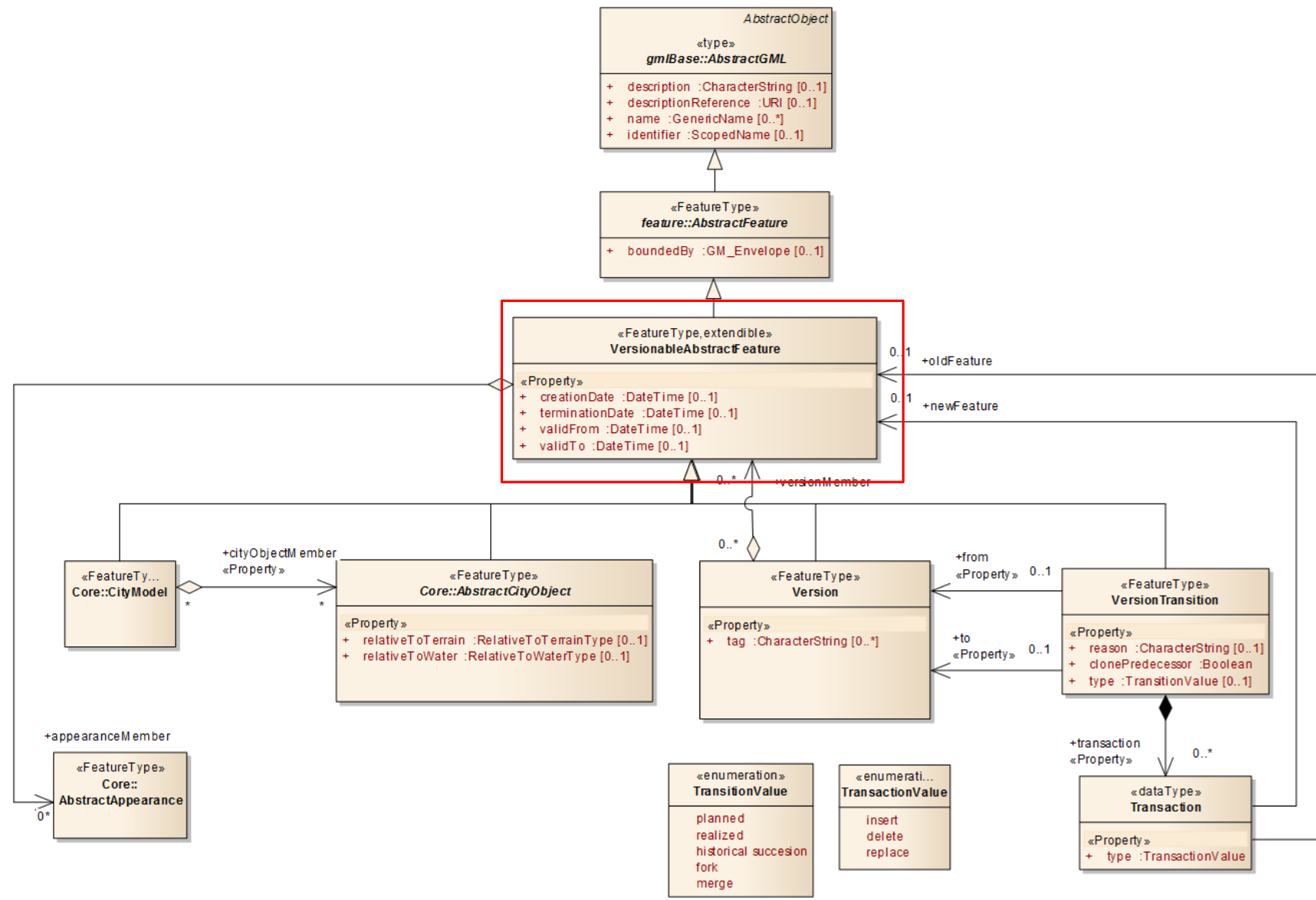
CityGML, WP06
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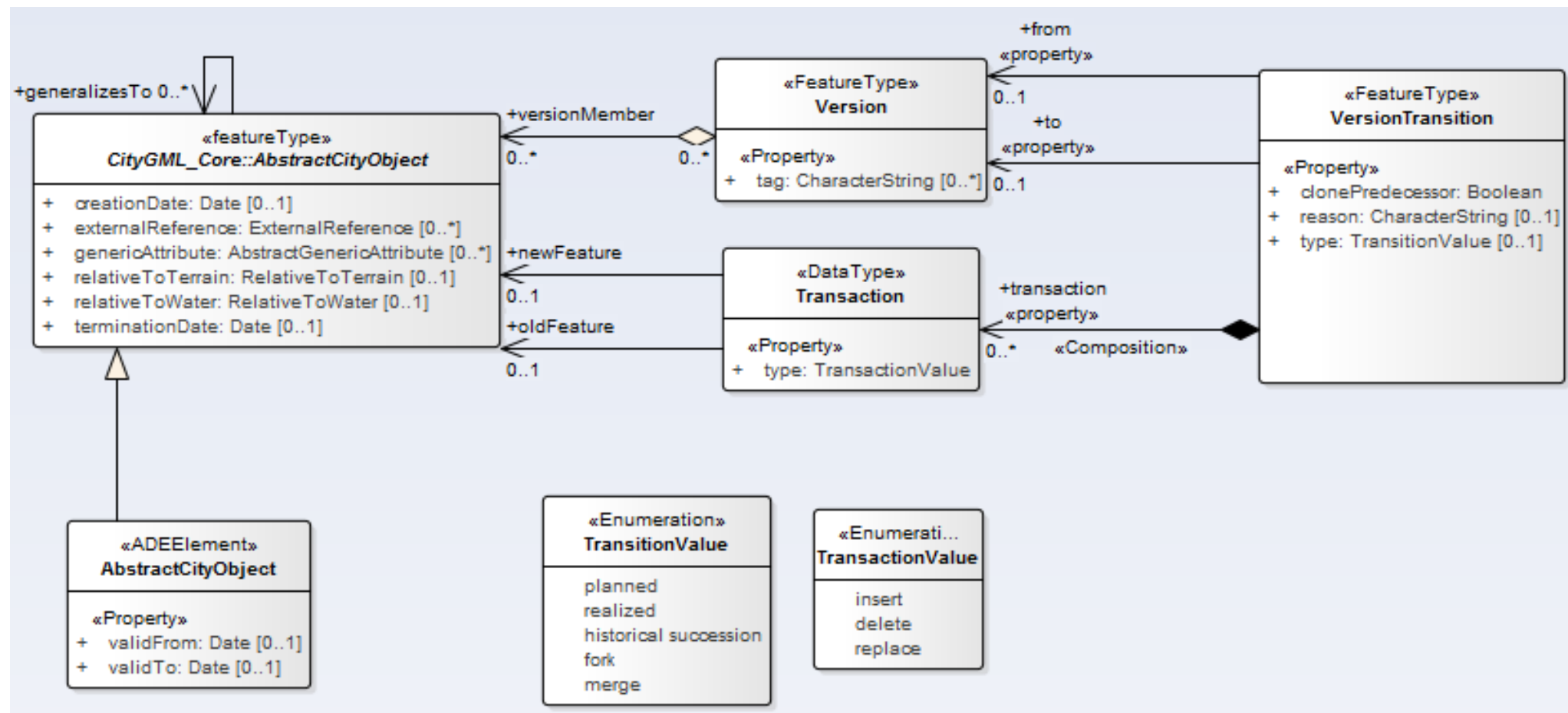
Goal: Create an ADE for history and version management in CityGML

Adaptation of the proposed model to comply with ADE mechanisms

- Problem: derive classes from VersionableAbstractFeature not possible in ADEs
- Workaround:
 - add the date attributes of VersionableAbstractFeature to AbstractCityObject
 - Replace the members of the Version and Transaction classes by AbstractCityObjects



Designed ADE Model:



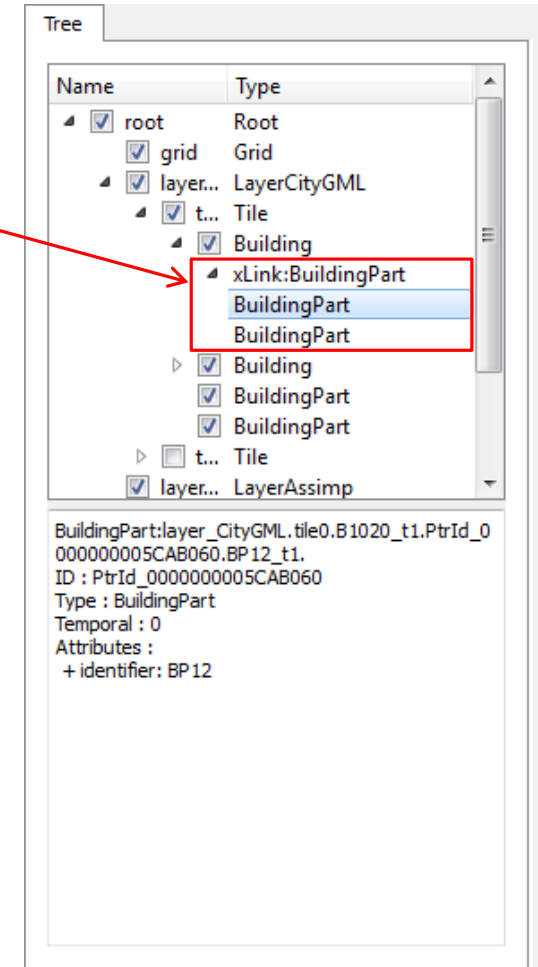
Provide a reference implementation

Using LIRIS' 3D-USE software for visualizing and modifying CityGML based models

What has been done so far:

- Hide or display objects depending of their creationDate and terminationDate
- Support of xLink/xPath references to a group of object by their gml:identifier

```
<cityObjectMember>
  <Building gml:id="B1020_t1">
    <identifier>B1020</identifier>
    <consistsOfBuildingPart>
      <BuildingPart xlink:href="//identifier[text()='BP12']"/>
    </consistsOfBuildingPart>
    <creationDate>2012-08-02</creationDate>
    <terminationDate>2013-10-09</terminationDate>
    <function>Office</function>
  </Building>
</cityObjectMember>
<cityObjectMember>
  <Building gml:id="B1020_t2">
    <identifier>B1020</identifier>
    <consistsOfBuildingPart>
      <BuildingPart xlink:href="//identifier[text()='BP12']"/>
    </consistsOfBuildingPart>
    <creationDate>2013-10-09</creationDate>
    <function>Living</function>
  </Building>
</cityObjectMember>
<cityObjectMember>
  <BuildingPart gml:id="BP12_t1">
    <identifier>BP12</identifier>
    <creationDate>2012-08-02</creationDate>
    <terminationDate>2014-06-03</terminationDate>
    <roofType>Flat</roofType>
  </BuildingPart>
</cityObjectMember>
<cityObjectMember>
  <BuildingPart gml:id="BP12_t3">
    <identifier>BP12</identifier>
    <creationDate>2014-06-03</creationDate>
    <roofType>Saddle</roofType>
  </BuildingPart>
</cityObjectMember>
```



Currently working on:

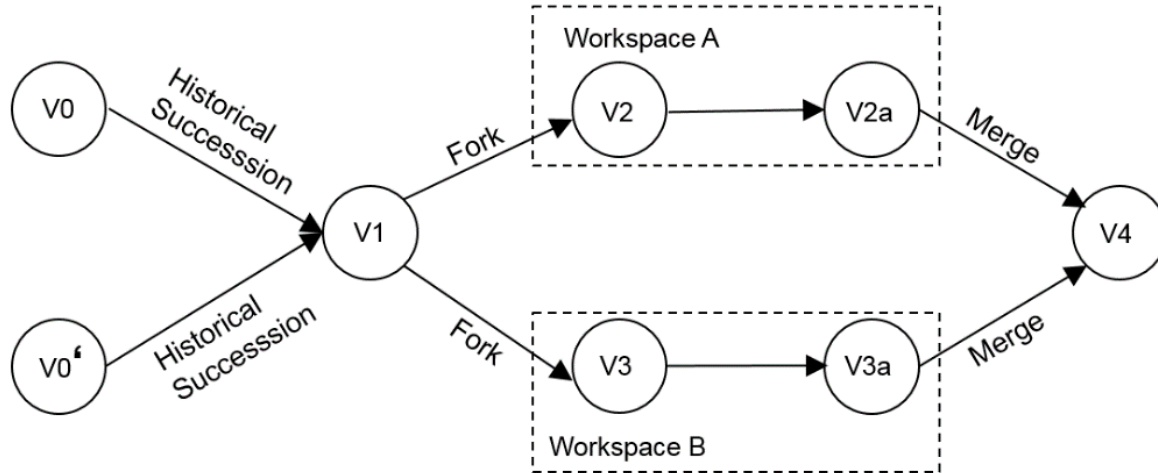
- Management of Versions and VersionTransitions
 - Creation of a test file using Versions
(but with no example to base it on)
 - Parsing and data structure of Versions and Transitions
almost completed

```
<temp:Version gml:id="v0">
  <temp:tag>Version 0</temp:tag>
  <temp:versionMember>
    <bldg:Building xlink:href="//*[@id='bldg_bldg1-0']"/>
  </temp:versionMember>
  <temp:versionMember>
    <bldg:Building xlink:href="//*[@id='bldg_bldg2-0']"/>
  </temp:versionMember>
</temp:Version>
<temp:Version gml:id="v1a">
  <temp:tag>Version 1a</temp:tag>
  <temp:versionMember>
    <bldg:Building xlink:href="//*[@id='bldg_bldg1-1']"/>
  </temp:versionMember>
  <temp:versionMember>
    <bldg:Building xlink:href="//*[@id='bldg_bldg2-1']"/>
  </temp:versionMember>
</temp:Version>
<temp:Version gml:id="v1b">
  <temp:tag>Version 1b</temp:tag>
  <temp:versionMember>
    <bldg:Building xlink:href="//*[@id='bldg_bldg1-1b']"/>
  </temp:versionMember>
  <temp:versionMember>
    <bldg:Building xlink:href="//*[@id='bldg_bldg2-1b']"/>
  </temp:versionMember>
</temp:Version>

<temp:VersionTransition gml:id="vt_0-1a">
  <temp:clonePredecessor>false</temp:clonePredecessor>
  <temp:type>fork</temp:type>
  <temp:from>
    <temp:Version xlink:href="//*[@id='v0']"/>
  </temp:from>
  <temp:to>
    <temp:Version xlink:href="//*[@id='v1a']"/>
  </temp:to>
</temp:VersionTransition>

<temp:VersionTransition gml:id="vt_1a-1b">
  <temp:clonePredecessor>false</temp:clonePredecessor>
  <temp:from>
    <temp:Version xlink:href="//*[@id='v1a']"/>
  </temp:from>
  <temp:to>
    <temp:Version xlink:href="//*[@id='v1b']"/>
  </temp:to>
</temp:VersionTransition>
```

Workspaces?



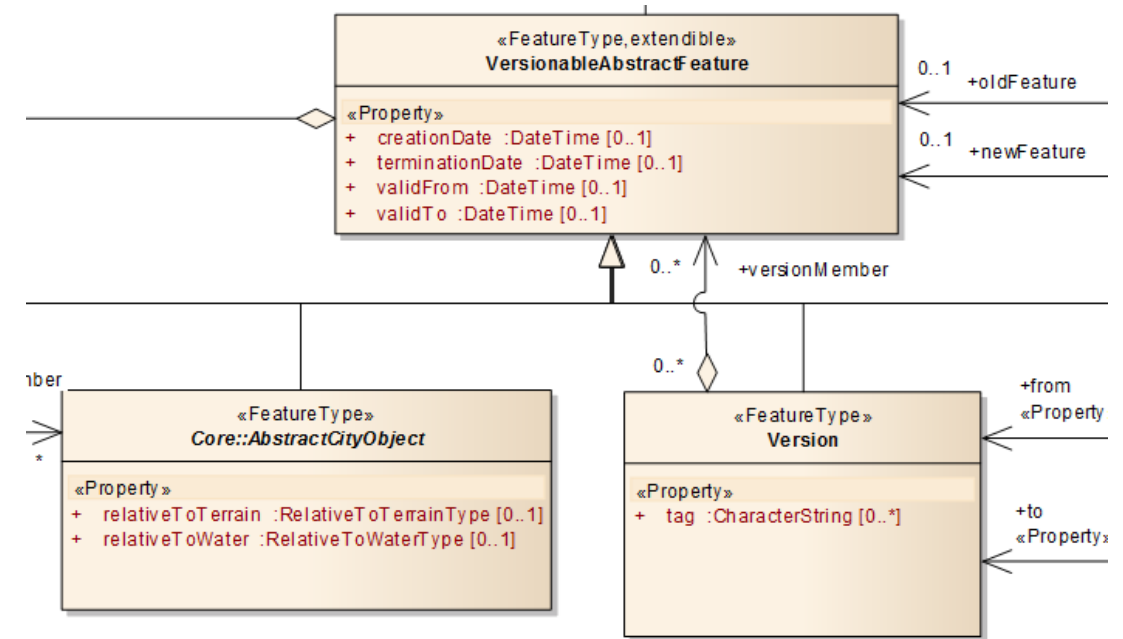
- Sequence of Versions between a « fork » and a « merge » Transition (or a « planned » and a « realized »)
- No explicit existence in the proposed model

If important, shouldn't they be defined explicitly in the CityGML?

Dates in Version class?

In the proposed model, the Version class inherits date members from VersionableAbstractFeature. This is not done in my ADE model.

This could be used to set validity dates for a Version independent of the dates of the version members.



Are Version & VersionTransition members of CityModel?

