

# CityGML 3.0 Versioning Module: Basic Versioning Example

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Findable



Accessible



Interoperable



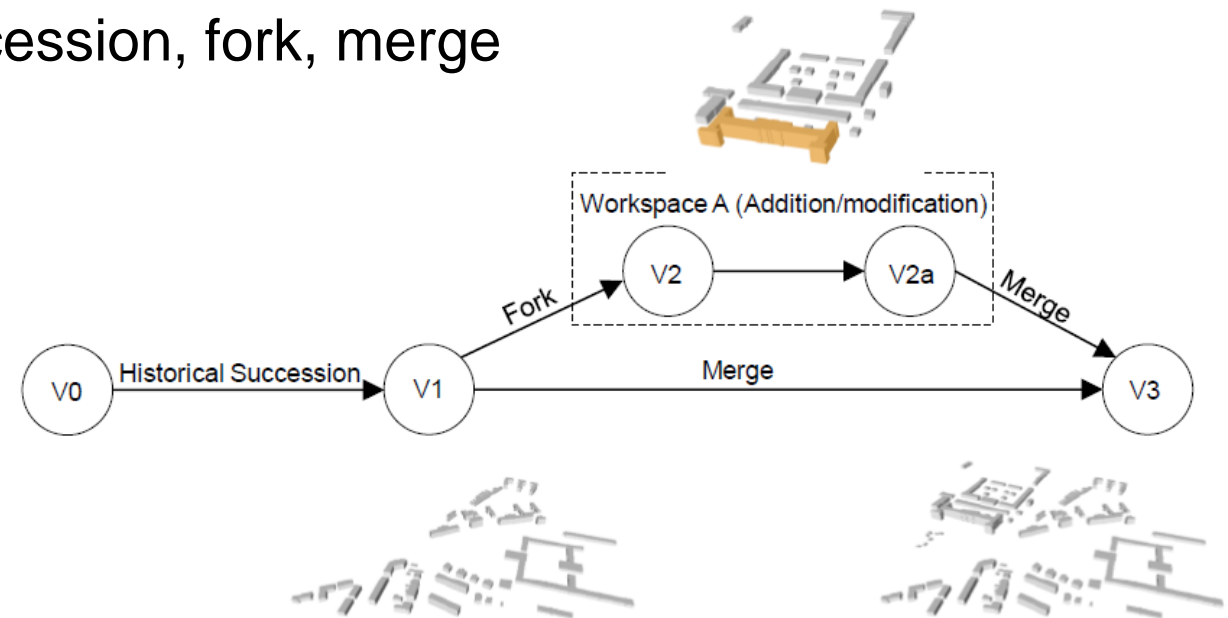
Reusable



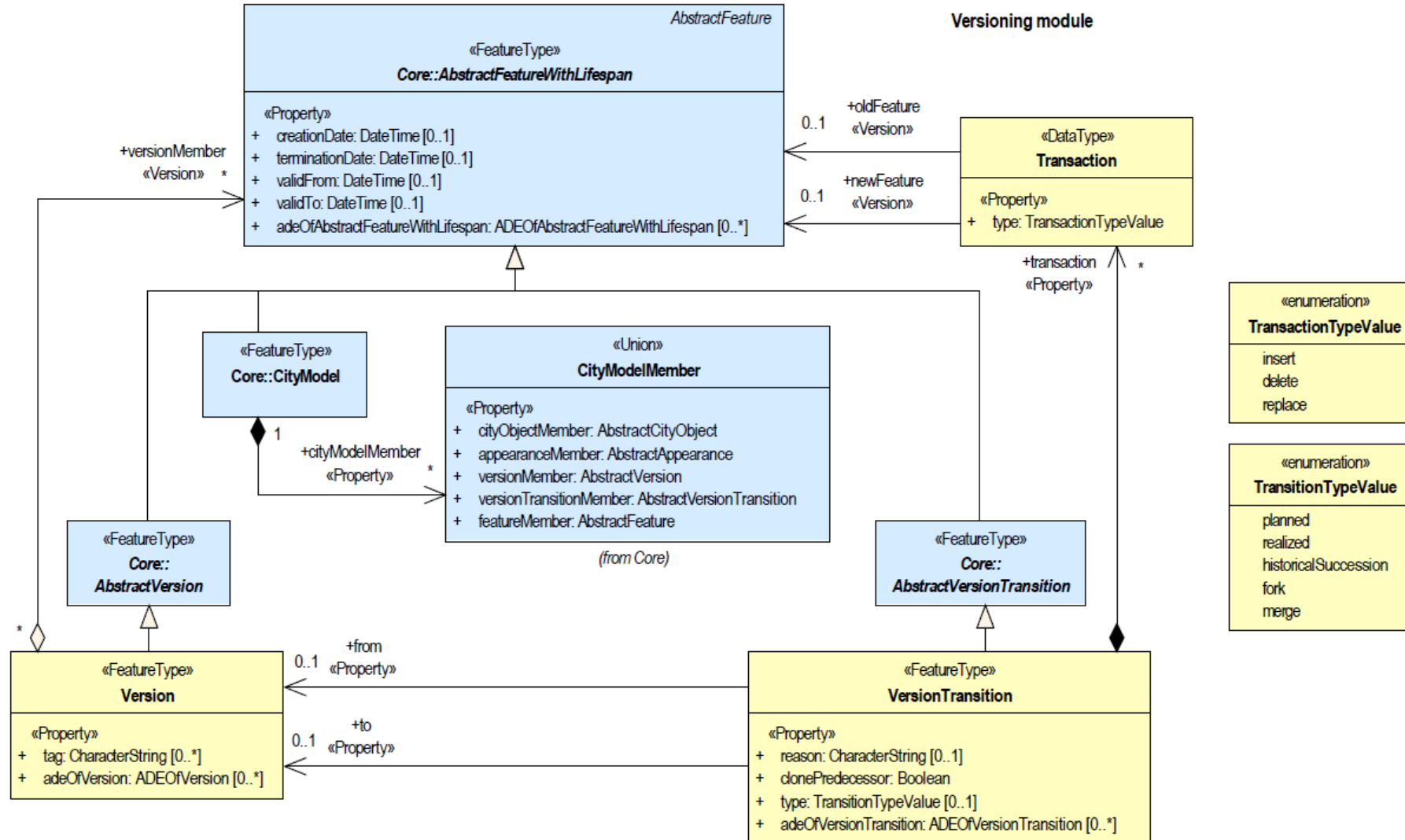
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- **Version** - used to explicitly define named states of the 3D city model and denote all the specific versions of objects belonging to such states.
- **VersionTransition** - allows to explicitly link different versions of the 3D city model by describing the reason of change and the modifications applied
  - Types: planned, realized, historical succession, fork, merge
- **Transaction** - a modification of the city model by the creation, termination, or replacement of a specific city object
  - Types: insert, delete, or replace



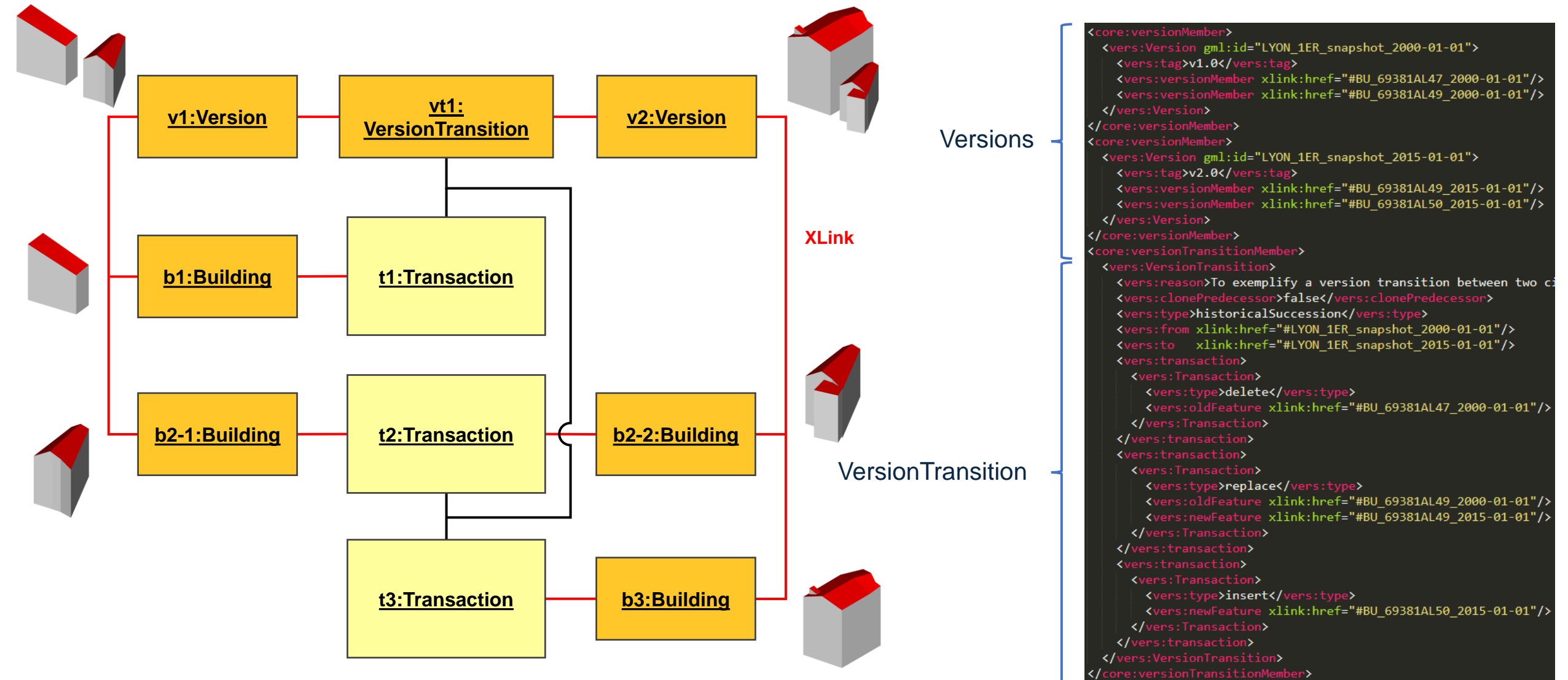
# Versioning module: UML Diagram



# Versioning module: Example Versioning Graph

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45 : 87  
FEB - 05 - 3254  
167 - 78 - 804





- Identifier best practices

- Use *gml:identifier* as a static or major id to identify a city object represented across different versions.
  - This id should be associated with a codeSpace.
- Use *gml:id* as a unique minor id. Appending a datetime or timestamp can be an effective way to create unique ids from existing *gml:ids*

```
<core:cityObjectMember>  
  <bldg:Building gml:id="BU_69381AL50_2000-01-01T00-00-00">  
    <gml:identifier codeSpace="https://data.grandlyon.com/">BU_69381AL50</gml:identifier>  
    <gml:name>Building A</gml:name>
```