CityGML 3.0 WP06 – First Teleconference

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Agenda

- Working mode and strategy
- Use cases
- Related Work / Literature
- Scope
- Goals and deliverables
- Timeframe

1. Working mode and strategy

- Review of related work + Use cases (in parallel)
- Compilation of requirements on dynamic feature support
- Methodology & Model development
- Production of examples and discussion of proposal with respect to use cases

2. Use cases

- Strategic energy planning using 3D city models
- Visualising CityGML 3D models with dynamic and time-dependent properties using Cesium WebGL Virtual Globe
- Renewable energy production assessment (e.g. photovoltaics)
- Building energy demand assessment (e.g. heating demand, electrical energy demand)
- Flood modelling and impacts on cities
- Shockwave impact representation on constructions
- Day / night and summer / winter switching of textures

3. Related Work / Literature

- Other standards
  - AIXM
  - CZML
  - SEDRIS
  - SMIL
  - Moving features SWG
  - Temporal DWG
  - ISO 19108:2002 Geographic information --Temporal schema
  - GML 3.2.1 – Concept of Dynamic Features
- Concept from Gilles
- Concept from Marc
- Concept from Hangchao

4. Scope

- What are the topics we should address?
  - Time varying properties and objects
  - Versions
    - in the sense of an object history (chronologically non-overlapping)
    - and/or in the sense of alternative models for the same real-world time
- What is the technical approach?
  - Should our model define an own CityGML module?
  - Should the usage/inclusion of the module imply that all standard CityGML features, properties, and relations would become dynamic?
  - Or would it just allow to define dynamic/time variant attributes in ADEs or other schemas which explicitly refer to the new data types?
  - Should we just add generic dynamic features and generic dynamic attributes?
  - The latter two approaches are least invasive and keep backwards compatibility with CityGML 1.0/2.0

Representation of dynamic data (some aspects)

- Types of dynamic data
  - Numeric (real, integer)
  - String
  - Spatial
- Types of variation
  - Discrete changes
  - Smooth changes
- Expression of complex variation behaviour
  - Periodic patterns
  - Long-term trends
  - Composition / superposition of multiple variation behaviours
- Representation of mathematical formulas
  - MathML

5. Goals and deliverables

- Final deliverables
  - Specification document including
    - Data model in UML
    - Textual explanation
    - XML Schema
    - Test data/examples
    - Use cases
    - Discussion of related work / literature
- Short term deliverable
  - Change request (WP-CR) for WP06
- Scientific paper
- Document/Wiki containing arguments or decisions leading to final specification (e.g. Github or OGC Twiki)

6. Timeframe

- Bi-or three-weekly telephone conferences
  - Presentations by each contributor at every telephone conference
- Face to face meeting in autumn 2014 at TUM
- The Change request (WP-CR) for WP06 should be presented at the September 2014 OGC TC meeting
- Presentation of a first proposal for the December 2014 OGC TC meeting

Discussions

- What is meant by versioning?
- Should we also have a glossary?