Minutes CityGML 3.0 WP 03 face-to-face meeting - draft

Date: 09.07.2014
Start: 10:30 a. m.
End: 5:00 p. m. r
Host: Gerhard Gröger, University of Bonn

Participants: physically: Benner, Biljecki, Casper, Donaubauer, Dörschlag, Geerling, Gröger, Häfele, Kohlhaas, Kraut, Rönsdorf, Trakas
by phone/Web: Drinkwater, Ebbinghaus, Ki-Joune Li, Klimke, Nagel

Minutes: Donaubauer, Gröger

Agenda Item 1: General aim / purpose of LoD concept (Assessment of quality, multiple representations, ...)

- Presentation by Andreas Donaubauer on "Thoughts about CityGML 3.0 WP03 - the Reviewer's Perspective" (see annex 1). Discussion:
    - Gerhard Gröger: The presentation says that "It will be of great importance to prove precisely that the weaknesses we describe will be solved completely". The word "Completely" is too strong, we cannot assure this.
    - Claus Nagel: Support for the idea of a strong focus on user requirements, but the questions asked in this presentation should not be asked at the very end of the discussion. The reviewer should get involved in the debate continuously.
    - Philip Biljecki: What is the role of the reviewer? Does he decide upon the proposals discussed by the group? Gerhard Gröger: No, the reviewer does not decide. Andreas Donaubauer: The reviewer should help to formulate proposals which are likely to be accepted by the OGC.
    - Gerhard Gröger: The presentation states that first of all, use cases shall be collected in order to answer the question "Which problems are solved by the new / modified LoD concept?". We therefore should not start the discussion on the aspects covered by the LoD concept until use cases are collected. However, the new concept should also cover future use cases which currently do not exist. In preparation for the next meeting, all participants shall collect descriptions of use cases (for which LoD are relevant).

Agenda Item 2: Deficits of the current LoD concept

- Presentation by Gerhard Gröger. The slides have been modified according to the outcome of the discussion. Annex 2 contains the modified slides.
- Discussion: LOD label does not specify whether a feature is included in data set or not. But one can inspect the data set in order to answer this question. Or meta data can be used.
- Discussion: That currently openings are not available in LoD2 can be a strength of the concept (simplicity) (Donaubauer)
- Texture/Material should be considered in the LoD concept (Biljecki),
- Accuracy Information should not be related to the LOD concept (Biljecki)

Agenda Item 3: Proposals for modifying the LoD concept

- **Discussion following the presentation by Ki-Joune Li (see annex 3):**
  - It is an open question whether a future version of IndoorGML will have an LoD concept. If LoDs should be integrated, it has to be a very flexible concept, not as fixed as currently in CityGML.
  - The interface between IndoorGML and CityGML is defined by references pointing from IndoorGML objects to CityGML objects (e.g. rooms).
  - We could take the possibilities of IndoorGML as requirements for a new / modified CityGML LoD concept (e.g. LoD0 representations of rooms)
  - Answers to the question by Ki-Joune (last slide) from a CityGML perspective: Consider LoD as a Level of Map Generalization?
    - Simplification: yes
    - Collapse: yes
    - Different levels of elimination/inclusion: in principle, but no rules for automation
    - Different levels of classification: in principle, but no rules for automation
    - One can interpret the CityGML LoD concept as map generalization, but one does not have to (e.g. buildings in a lower level of detail need not be derived from buildings in a higher level of detail but they could be. The generalization could then be indicated by the association “generalizesTo”

- **Discussion following the presentation by Claus Nagel (see annex 4):**
  - Support for this proposal by Jürgen Ebbinghaus and Volker Kraut
  - Critical remarks by Joachim Benner and Karl-Heinz Häfele:
    - The approach is similar to the IFC approach. KIT has made the experience that without any restriction, this cannot be handled. Claus Nagel: it can be handled by creating profiles. The standard itself should not be restrictive.
    - The name of feature types might be misleading when the proposed LoD concept is applied. E.g. LoD0 WallSurface is no longer a surface but a line. Claus Nagel: renaming of feature type should be discussed individually
    - What is the LoD1 representation of a RoofSurface?
    - Why are the LoDs called LoD 0,1,2,3? In IFC there is an arbitrary number. Claus Nagel: it is because existing data can be mapped to that fully automatically.
  - Critical remark by Gerhard Gröger: An LoD3 Building according to the proposed LoD concept is different from a current LoD3 Building. Claus Nagel: A profile can be defined which exactly corresponds to the definition of a current LoD3 Building.
  - Question by Ki-Joune Li: Concept has nothing to do with accuracy? E.g. a room with coarse geometry might conflict with the outer shell of the building? Claus Nagel: the accuracy of the geometry should be modeled as metadata. If an application cannot handle rooms conflicting with the outer shell of the building, then this must be defined by a profile instead of restricting this on the level of the CityGML standard.

- **Presentations by Filip Biljecki and Joachim Benner/Karl-Heinz Häfele** were re-scheduled for the next meeting as we ran out of time

Agenda Item 4: First Discussion

As the discussion took place immediately after the presentation of each proposal, the documentation can be found under agenda item 4.

Next Meeting:

- Web Session
- Monday, 28th of July, 2 pm - 4 pm (UTC+2) (Result of doodle poll after meeting)
- In preparation, all participants should collect uses cases for which LoD are relevant

Annex:

1. Presentation slides Thomas Kolbe / Andreas Donaubauer
2. Presentation slides Gerhard Gröger
3. Presentation slides Ki-Joune Li
4. Presentation slides Claus Nagel