

Multi-Purpose Building Models for Switzerland

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SUMMARY

Information about buildings is a key resource in the business processes of a wide range of organisations. Today, in addition to data provided by the private sector such as Google Maps, Google Street View or OpenStreetMap, three different public sector databases are available nationwide in Switzerland. The three "products" - the register of building and dwelling (RBD), the (multi-purpose) cadastral data (CD) and swissBUILDINGS3D - were created with different objectives and the data sets are currently not synchronised and harmonised. Within the framework of a study, the idea of a new product "Official Building CH" was investigated and different variants were elaborated.

International standards such as CityGML for comprehensive city models and Industry Foundation Classes (IFC) in the context of Building Information Modelling (BIM) are widely used in various sectors and could be used as the basis for a future "Official Building CH" database. However, an analysis of various research projects shows that the exchange on the basis of IFC does not generally function loss-free and is associated with manual cleaning. Likewise, no approach has yet proven to be ideal for the transfer from CityGML to IFC or in the opposite direction. Based on the goals of the data inventory and the requirements for a user-friendly data model, the study therefore favours the variant of an independent, neutral model. With this approach, the aforementioned problems in the exchange between the BIM domain and the geodata infrastructure can be eliminated more easily.

For the proposed approach, a data model was developed at the class diagram level. Proposals for geometric modelling, data capture guidelines and proposals for tracking complement these specifications for a harmonised data structure. The data model was checked for plausibility based on various existing buildings. It was also checked that the recently published data model for the 3D

documentation of condominium ownership corresponds to the proposed structures.

Based on the positive feedback from current and potential users of an "Official Building CH " database, the project is to be realised. According to statements by individual organisations, the timing is ideal, as many will be digitising their processes in the coming years and major changes are also imminent in the AV.

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