IDP: mvdXML Configurator

Short Description

Because of the ongoing digitalisation of the construction sector, the collaboration and information exchange processes performed within a building project are in a significant change. The basis for this transformation is the Building Information Modeling (BIM) method, which specifies a model-based collaboration of all shareholders in a construction project. The digital models used here provide geometrical information of the individual components enriched by semantic information. In this way, all the information that is generated and processed during the execution of the construction project can be represented comprehensive and digital.

In BIM-based construction projects, all project participants follow a model-based approach, thus incorporating, managing and exchanging their information with the help of such digital models. Various guidelines implement a federated model approach, which means, that model authors are only responsible for a domain-specific sub-model according to their task, position, and discipline. To enable a software vendor independent data exchange between all project stakeholders the buildingSMART (http://buildingsmart.org/) developed the IFC data standard as well as the MVD concept as a solution for the definition of the data to be exchanged. A Model View Definition (MVD) defines a subset of the IFC schema to describe a specific exchange requirement, which needs to be satisfied for a specified data transfer process step. As a result, for each data transfer point of a construction project, such a requirement and MVD can be defined carefully to ensure a reliable and sustainable information management within the project.

The MVD method represents a powerful and rich tool that can be used to define the data exchange processes precisely, but the handling for non-programmers is challenging. Technically the MVD is an XML schema, which is human-readable but very complexly structured so that in principle only users with in-depth programming knowledge can manipulate the format directly. Therefore, MVD is not yet used extensively in BIM-based projects. Nowadays the exchange schemes are created mainly by domain-specific users with programming knowledge and can then be applied by the users primarily as a black box.

Therefore, the main task is to develop an mvdXML Configurator, which makes the usage of the MVD concept easier for users without profound programming skills. With
this configurator, the creation, modification, and verification should not only be enabled but also be made much easier for users. This task can be solved, for example, with the aid of visualization methods or approaches to visual programming

**Required knowledge**
- C# (alternative Java)
- Experience working with XML
- Experience in dealing with visual programming would be desirable but is not necessary

**Helpful Links**

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