Case Study

Automated data generation and validation for a CAD/BIM library

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Challenge

Our customer offers a versatile product range of various built-in parts worldwide. Their customers can navigate through the various products on an online platform and view detailed descriptions of the individual fixtures. Likewise, the products including the respective attributes can be exported in various degrees of detail and integrated into the CAD/BIM software. The products offered differ in their availability and designation depending on the country product program. The product information is available in different data formats and therefore requires a complex manual process to enter it into the online application.

Due to the complexities of data maintenance, a solution is to be developed to automatically generate the CAD/BIM library data while ensuring that the data entered is consistent, accurate and complete. Such a solution provides construction planners with access to the complete and most up-to-date dataset at all times.

Approach

For the automated generation of the library, the available products in the current database of the respective country product program are retrieved and enriched with additional product information from the database using product identifiers and automatically extracted material identifiers.

This includes specific information such as the dimensions of the products. The product details are captured by our technical solution and validated with the enriched data. Based on the individual product details, product groups are generated automatically, which are used for structuring the products.

This is initially divided into the respective product families. These have different models, each of which is divided into individual types. Further groups are created based on specific item characteristics. Finally, the products are arranged and sorted in a tree structure based on all groups.

With the generated results, updates of the CAD/BIM libraries can be performed efficiently. Quality assurance plays a crucial role in this process, which is why the procedure provides indications regarding data quality and possible deficiencies.

In this way, incomplete, inconsistent or invalid product information becomes apparent to the subject matter experts and potential sources of error are avoided.

Result

The implemented software solution automatically generates and validates the data for the application using the existing database. In the process, the product overview is individually adapted for the various country product programs and prepared for the visualization. Through this data-driven process, the construction planners always have up-to-date and correct information regarding the available products.

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