INFORMATION AND QUERY IN BIM

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Abstract

Most of today's BIM technologies, which enable the creation and maintenance of digital models of buildings throughout their lifetime, treat information as a set of structured data. This approach resulted in numerous standards and technologies aimed at the completeness and quality of the information model itself. If we pay attention to the fact that the first papers that formulated the mathematical theory of information inextricably link information with communication, we will see that the party receiving the message represents a key part in the understanding of information. What's more, information does not exist without the receiving party. All information models represent only a source of information, not information. In order to ensure that the end user receives the desired information, it is necessary to find ways to represent the end user needs and define ways to query the BIM model in accordance with them.

Querying IFC file is not an easy task. Parsing directly file format is a problem due to the structure of the STEP file. To overcome these limitations, other representations based on XML, RDF and OWL formats have been developed. Second approach is to use a database management system (DBMS) to access and query information. Since IFC format is full of relationships the graph database is effective solution.

The paper analyzes the existing solutions for the representation of the IFC format through databases and Linked data technologies and determines the ways in which they can be connected with the existing technologies for the representation of information requirements.

Keywords

Information, BIM, Query, Information requirements.

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