

5th World Congress and Exhibition on

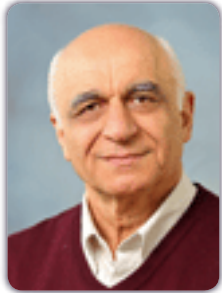
CONSTRUCTION AND STEEL STRUCTURE

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World Congress on

CONCRETE STRUCTURES & CONCRETE TECHNOLOGY

October 05-06, 2018 | Los Angeles, USA



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A semantic approach to building lifecycle information integration

Building projects use a variety of software tools and information sources to support the design, construction, maintenance, and operation activities. Each specialty area in the building industry uses software tools specifically designed for its functions and store data in proprietary formats that cannot be easily integrated with data generated in other areas. However, there are natural connections among various building processes that require data integration across various specialty areas and software applications. Efficient execution of various building processes requires seamless and fluid communication of data among applications used in the project lifecycle. In recent years, the Semantic Web technology has emerged as a viable approach for structuring, interrelating, and publishing information. In the Semantic Web approach, a common vocabulary is defined for the information in a domain. The common vocabulary includes machine-interpretable definitions of various concepts in the domain and the relations among them. Creating an explicit common vocabulary for a domain provides a common understanding of the structure of the domain information for users of the information. The paper discusses a modular approach for developing vocabularies for various building domain data and discusses custom vocabularies developed for design, cost, and schedule domains in building construction. The paper presents a case study that demonstrates the application of the Semantic Web technology for aggregating design, cost, and schedule information to answer queries or as input data to other applications.

Biography

Saeed Karshenas is a professor of civil engineering at Marquette University in Milwaukee, Wisconsin, USA. He has published over 60 papers in refereed journals and conferences. His current research is focused on building information modeling and semantic representation of building data.

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