

BIMERR

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BIMERR

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no. 820621

Call identifier: LC-EEB-02-2018



BIMERR PROJECT

To reduce the buildings' renovation projects duration/costs and improve their energy efficiency, BIMERR aims to contribute to the digitalisation of the AEC industry by developing and delivering an ICT-enabled Renovation 4.0 toolkit comprising tools to that support AEC stakeholder throughout the energy efficiency renovation process of existing buildings.

BIMERR is striving to ensure 3 key points:

- 1. Interoperability throughout the BIM ecosystem and more specifically between renovation-support and digital building model creation tools.** The main purpose is to ensure that the information among the various tools is exchanged in a semantically and syntactically coherent manner that is compliant to a unified standard that provides a structured definition of renovation-related information;
- 2. Renovation process improvement through innovative methods and tools for:** creation of digital building models (enhanced BIMs) of existing buildings (based on an automated and synergistic manner) and adaptive project-specific and dynamic cost/time optimization of the renovation process & workflow based on the synergy of flexible & realistic process models that enable the systematic investigation of "what-if" scenarios.
- 3. Innovative renovation-support tools for end-users** to overcome obstacles towards the growth and development of building renovation activities by: raising awareness regarding (i) the potential gains in building energy performance, (ii) the reduction of the associated emissions as well as (iii) the minimization of initial and operational costs, by providing easy-to-use tools to the owners/residents for the assessment of renovation options.

PUBLICATIONS

BIMERR Related work was presented in the 38 th International Symposium on Automation and Robotics in Construction (ISARC 2021) and published in the conference proceedings under the title:



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I. The BIMERR Interoperability Framework: Towards BIM Enabled Interoperability in the Construction Sector (Nefeli Bountouni, Fenareti Lampathaki, Spiros Kousouris, Anastasios Tsitsanis, Georgios Vafeiadis, Danai Vergeti)

Abstract: Interoperability is an ever-present challenge for the construction industry despite the intensive research and standardization efforts, including Building Information Modelling (BIM), and Common Data Environments (CDEs). This paper presents the BIMERR Interoperability Framework (BIF), a cloud-based platform aiming to facilitate seamless data integration, leveraging flexible ontology and data model management capabilities combined with flexible querying and retrieval mechanisms, to allow secure collaboration of legacy systems and cuttingedge applications in construction projects. The design principles of the BIF and interactions of any construction tech application with the BIF are elaborated while the perspectives opened up through the demonstration activities in the construction sector summarize this work.

The publication can be accessed through the following [link](#):