

MTA-BME MOMENTUM - NEW GENERATION OF STEEL BRIDGES RESEARCH GROUP

BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS (BME)



About the Research Group



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HORIZON-CL4-2024-TWIN-TRANSITION-01-12: Enhanced assessment, intervention and repair of civil engineering infrastructure (RIA) ||

Partner seeks Consortium

We can contribute to the following tasks as described in the Topic:

- 1) Develop new technologies and solutions that facilitate timely identification of maintenance and repair issues in existing civil engineering infrastructure. Examples may include structural weaknesses, unacceptable deformation and fatigue, issues related to moisture including mould growth and corrosion, the effects of weathering and of weather-related events, faults in technical systems, leaks of water or chemicals, or other issues.
- 2) Develop new solutions to monitor and to quickly and accurately analyze and assess the need for intervention, for example via digital twin and simulation technology.
- 3) Build on existing standards or contribute to standardization. Interoperability for data sharing should be addressed.

What we can bring to the consortium:

- Comprehensive research is conducted by the research group using advanced numerical simulations of steel and steel-concrete composite structures.
- Our department has outstanding experience in measurements and monitoring systems, cooperation with Hungarian industrial partners in installing monitoring systems could be an additional contribution to the project.
- Experience and knowledge in detailed risk assessment and digital twin of civil engineering infrastructures.
- High-quality infrastructure: structural laboratory for performing large-scale measurements and material tests, ANSYS APDL and Workbench simulation environments, qualified project management staff at university level
- Strong collaboration with the main participants of the Hungarian bridge engineering industry, experience in joint projects
- Collaboration with European standardization bodies (CEN/TC 250/SC3/ WG5, WG13 and WG22 committees) and European Convention for Constructional Steelwork (ECCS).





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With its regular high-ranking positions (between 200 and 800) BME is among the top universities (2-6%) globally. At the university's 8 faculties and 76 departments, there are 1,200 lecturers teaching 5,000 subjects and 10,000 courses each semester. In the H2020 Framework Programme BME has ranked #1 among the Hungarian institutions with 67 funded projects. The University is an active member of the European Engineering Learning Innovation and Science Alliance (EELISA) European University, the CESAER association of universities of science and technology and the European University Association.

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