

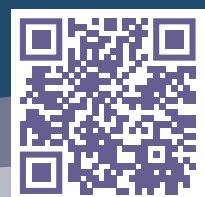
OMICRON bridge retrofitting solutions

The EU-funded OMICRON project developed a key bridge retrofitting solution: a modular hybrid bridge, supported by digital models. This has the following expected impacts:

- ↘ 5% reduction in volume of people in dangerous zones in road maintenance areas
- ↘ 30% reduction in traffic disturbances caused by bridge retrofitting works
- ↗ 30% increase in circularity of bridges

The solution is at TRL 7.

To read more about OMICRON activities, solutions, benefits and the relevant contact partners, turn the page or visit the OMICRON website.



Modular hybrid bridges

This enhanced modular and hybrid solution for bridge overpasses focuses mainly on highway overpasses. It uses pre-fabricated elements. It improves on the advantages of hybrid bridges, through the modularity of its components and an optimised design and construction process, and aims to become the standard methodology in the context of road infrastructures. The steel parts can also be re-used for other bridges after decommissioning.

The solution is as automated as possible: both regarding the pre-manufacture of the beams as well as their assembly on the bridge. This solution leads to fast construction time and less traffic disruptions.

Key value: Enhanced bridge design: optimised construction performance, (time and safety compared to traditional concrete solutions) of bridge overpasses. Increased industrialisation of bridge construction by introducing enhanced processes in the bridge component production pipeline.

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Bridge digital model

Building information modelling (BIM) provides a digital representation of physical and functional characteristics of bridges or other road assets. It enables collaboration between teams during the lifespan of and works on the asset.

A BIM model that will enable the virtual demonstration of alternative bridge overpass constructions supports OMICRON's modular hybrid bridge solution. It provides an evaluation tool for the integration and monitoring of design alterations and allows the capture and dynamic management of interactions between parts. Furthermore, it facilitates evaluation and decision making about construction procedures, both in the design stage and while construction is ongoing. This is important, as each construction working plan is exclusive to a specific project.

Key value: Enhanced bridge design: able to showcase differences between hybrid and traditional solutions.

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