

BRIDGE BEARING - MONITORING

Case Study - ÖBB Hillside Bridge Lower Austria



Starting situation

The more than 100-year-old bridge in Lower Austria is closely monitored by the ÖBB. Due to its hillside location, geological movements are suspected, but with the currently deployed methods, continuous monitoring of potential movements is not feasible.



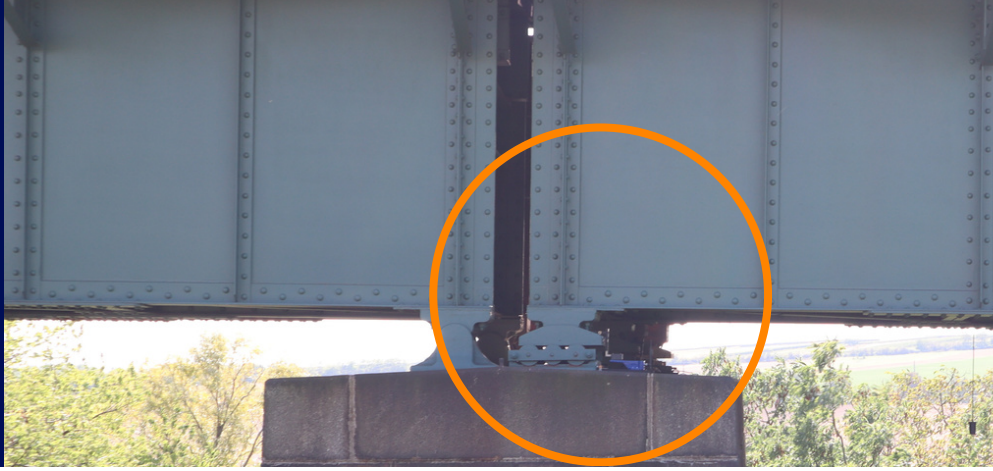
Requirements

Instead of labor-intensive and only temporarily possible on-site inspections by internal staff, a new technical solution for continuous monitoring is to be found. This will allow changes in the bridge, triggered by geological movements in the hillside, to be detected and analyzed in a timely manner, enabling rapid action to be taken if necessary.

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SOLUTION

SuessCo 6D sensors were installed on the bridge bearings. Combined with data from the temperature sensors, the responsible individuals at ÖBB can now permanently monitor changes via a clearly organized dashboard from their desk.



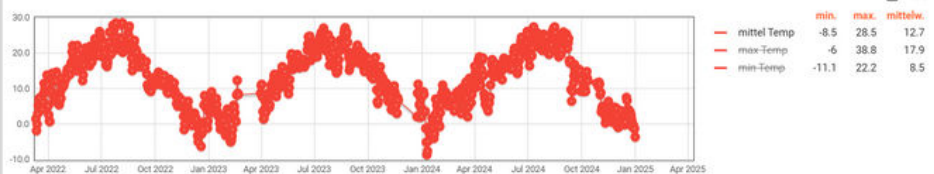
RESULT

-  The bridge's roller bearings are continuously monitored.
-  There is now data from several years.
-  The X-axis shows expected movements, while the Y and Z axes remain stable.
-  The "problem bearing" at the apex of the bridge shows shear movements (green).
-  Based on these findings, appropriate repair measures have been implemented.

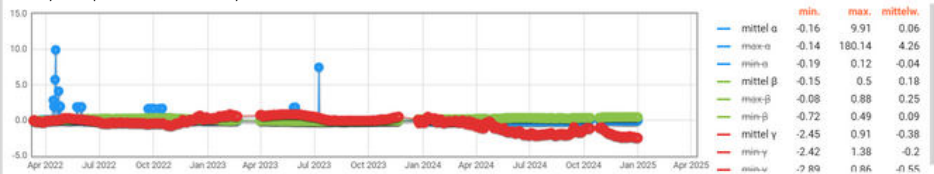
Daily movement summary (mm)



Daily temperature summary (°C)



Daily temperature summary (°)



Data comparison over 3 years



Georg Gotthart
Facility Technician Bridge Construction, ÖBB

"Until now, we have inspected the bridge bearings on-site. With the SuessCo 6D sensors, we always have up-to-date measurement data available. This is our advantage; it saves us costs and ensures higher quality."

