ASECAP DAYS
MILANO 2024

Using digital twin LiDAR data for monitoring bridges and retaining walls

Jaka Gorišek, DARS

ORGANIZED BY

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Aiscat

milanoserravalle
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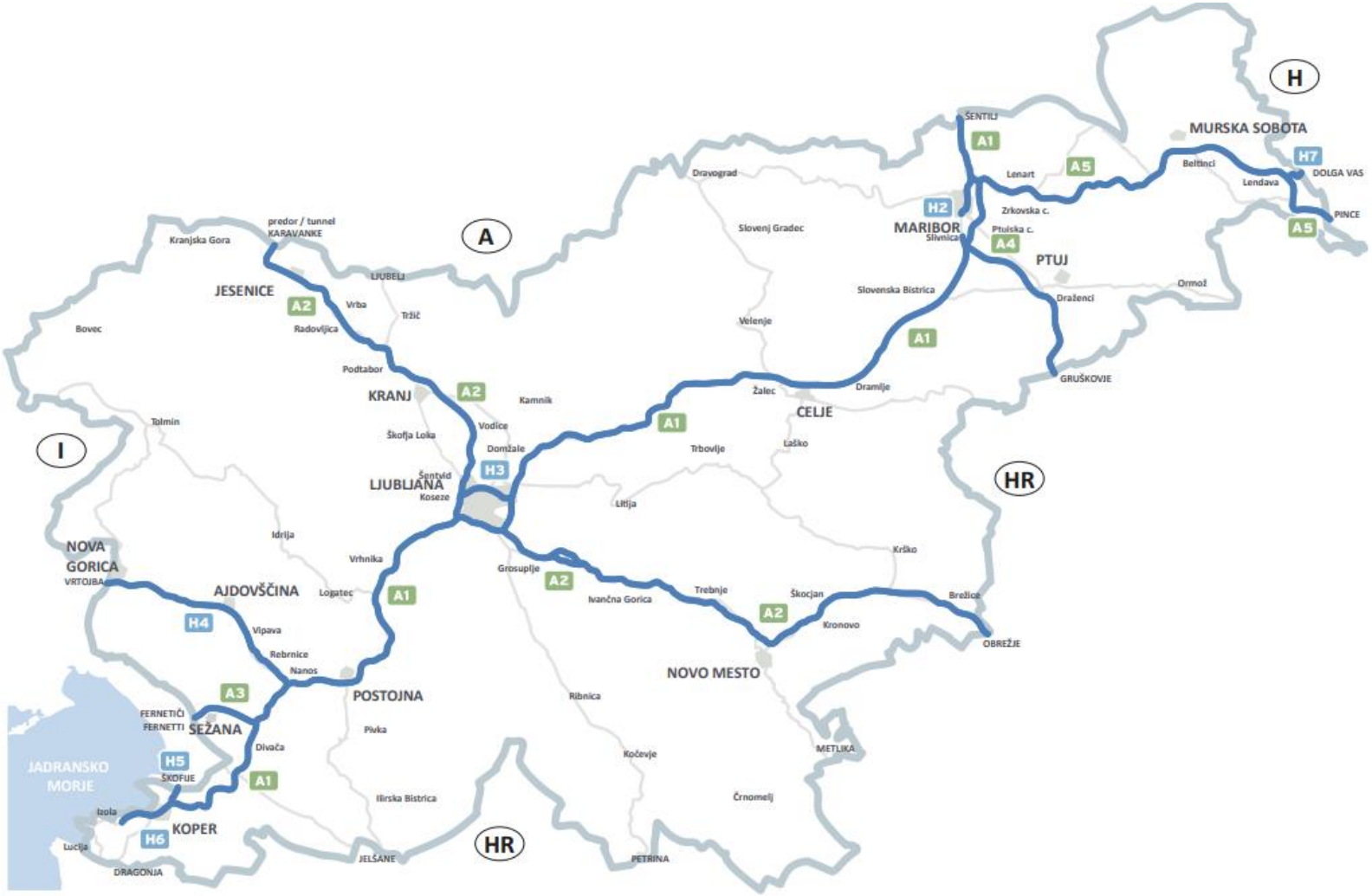
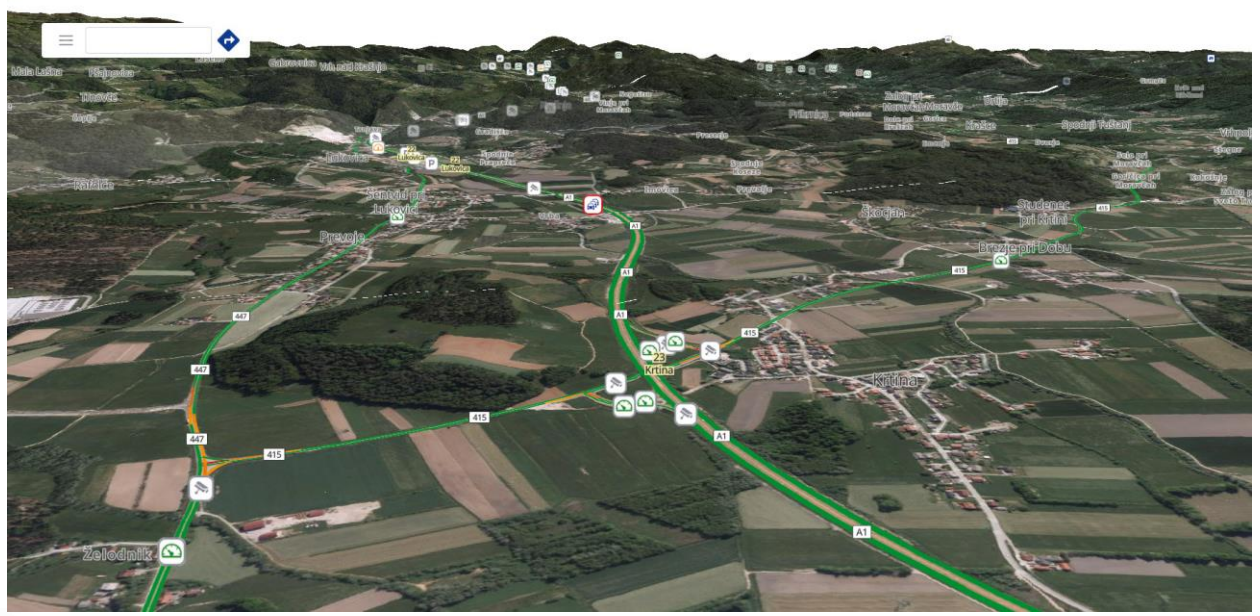
About DARS

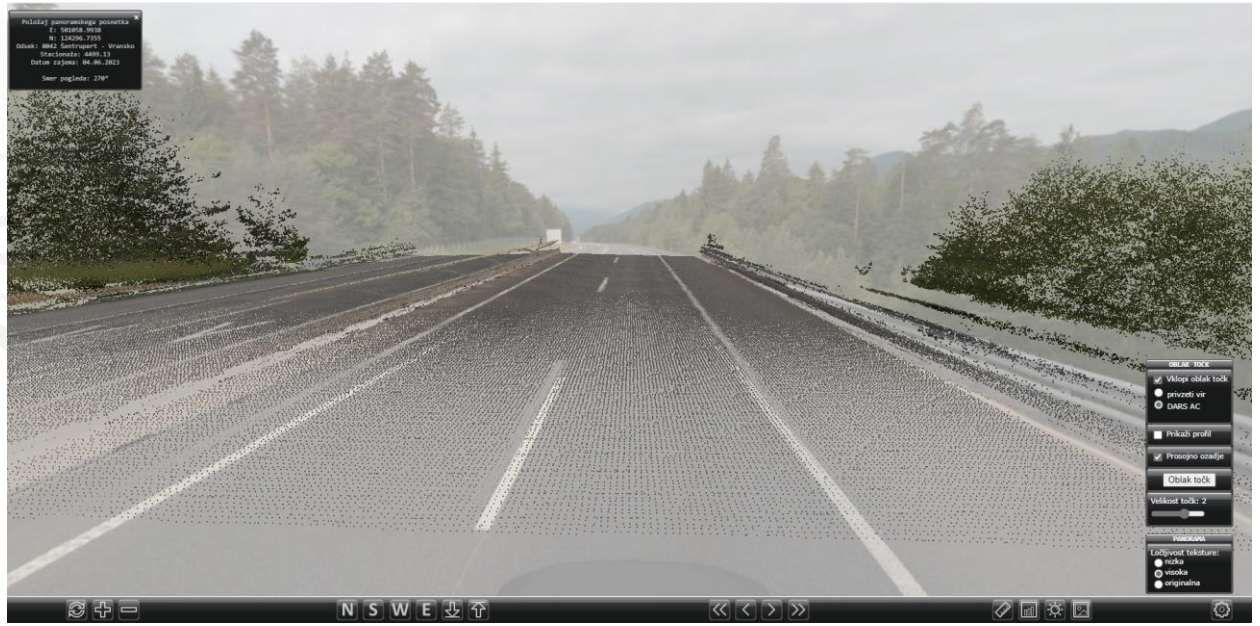
- Tolling, maintenance, road management, investments and reconstructions in Slovenia
- 625km of motorways and expressways
- 421 bridges and viaducts
- 351 geotechnical objects (retaining and supporting walls)



Digital Twin

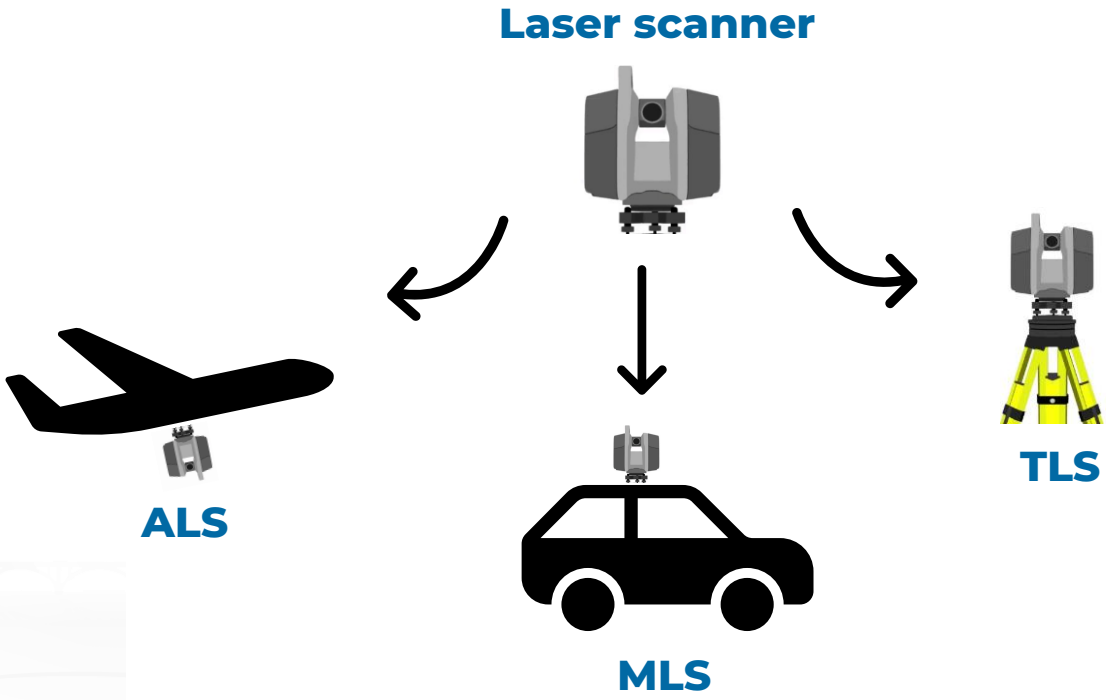
- Central spatial-geographical information system
- Data from infrastructure, equipment, real-estate, traffic, etc. DBs
- Online viewing, measuring, querries, data sharing





LIDAR data

- Light Detection and Ranging
- Highly accurate 3D pointclouds – georeferenced
- Captured different ways
- Basis for reconstructions, planning, simulations, online measurements …



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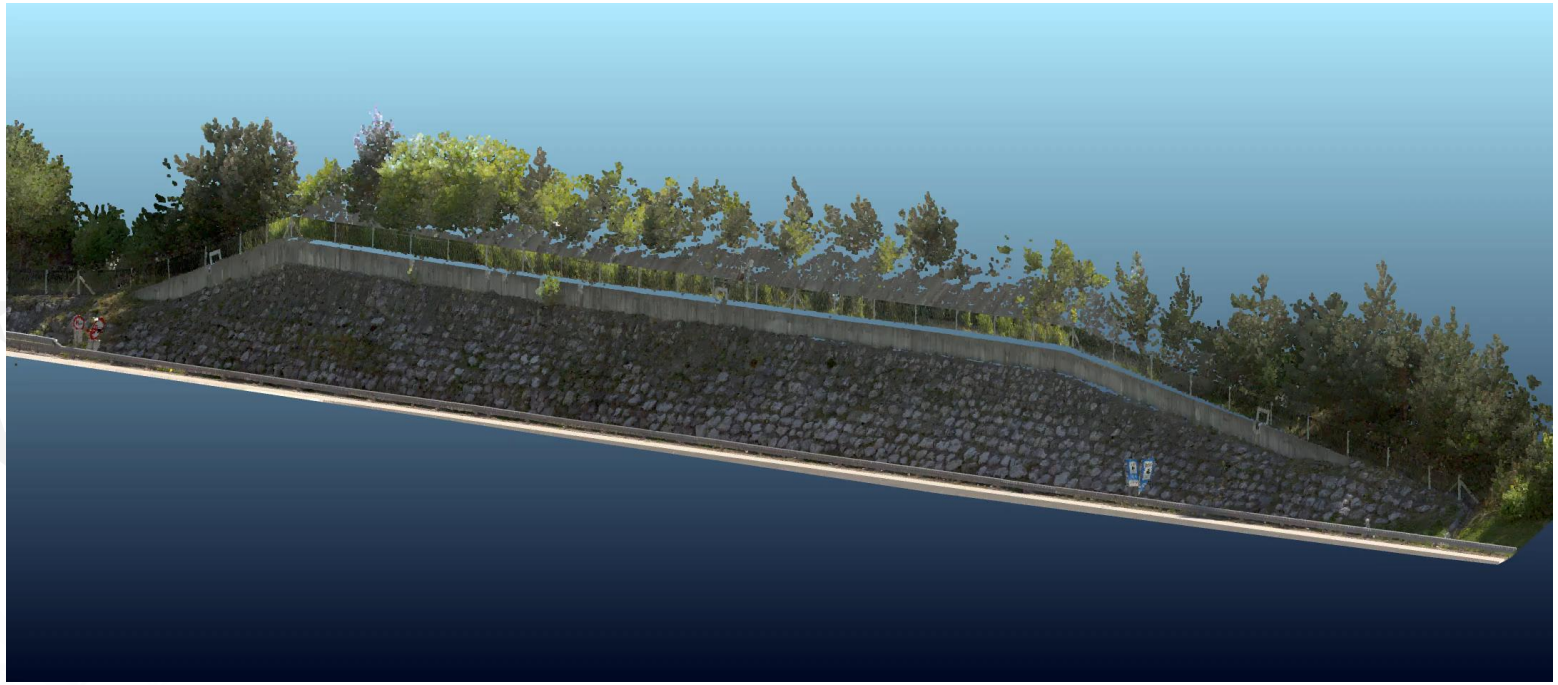
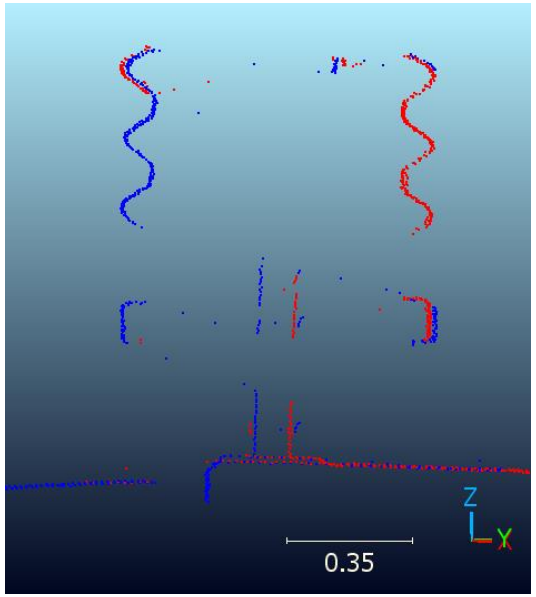
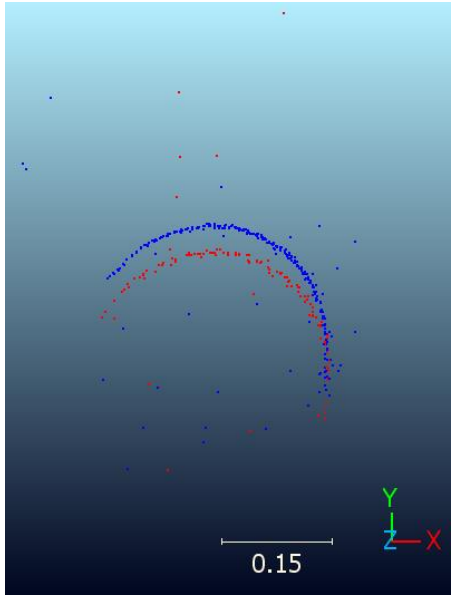
LIDAR based monitoring

- Comparing LIDAR pointclouds captured in different years for the same location
- Data verification and adjustment
- Pointcloud modelling
- Model comparison







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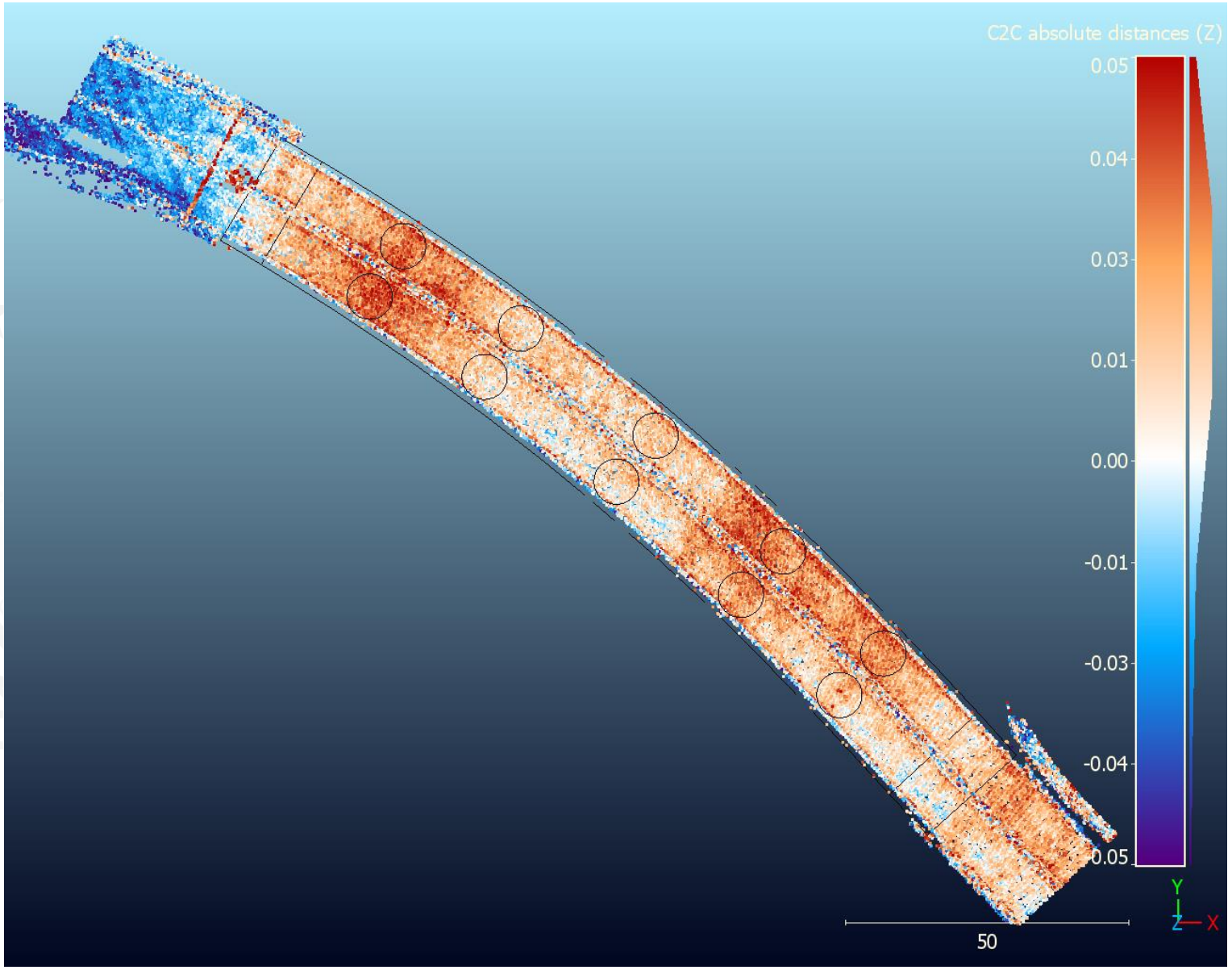
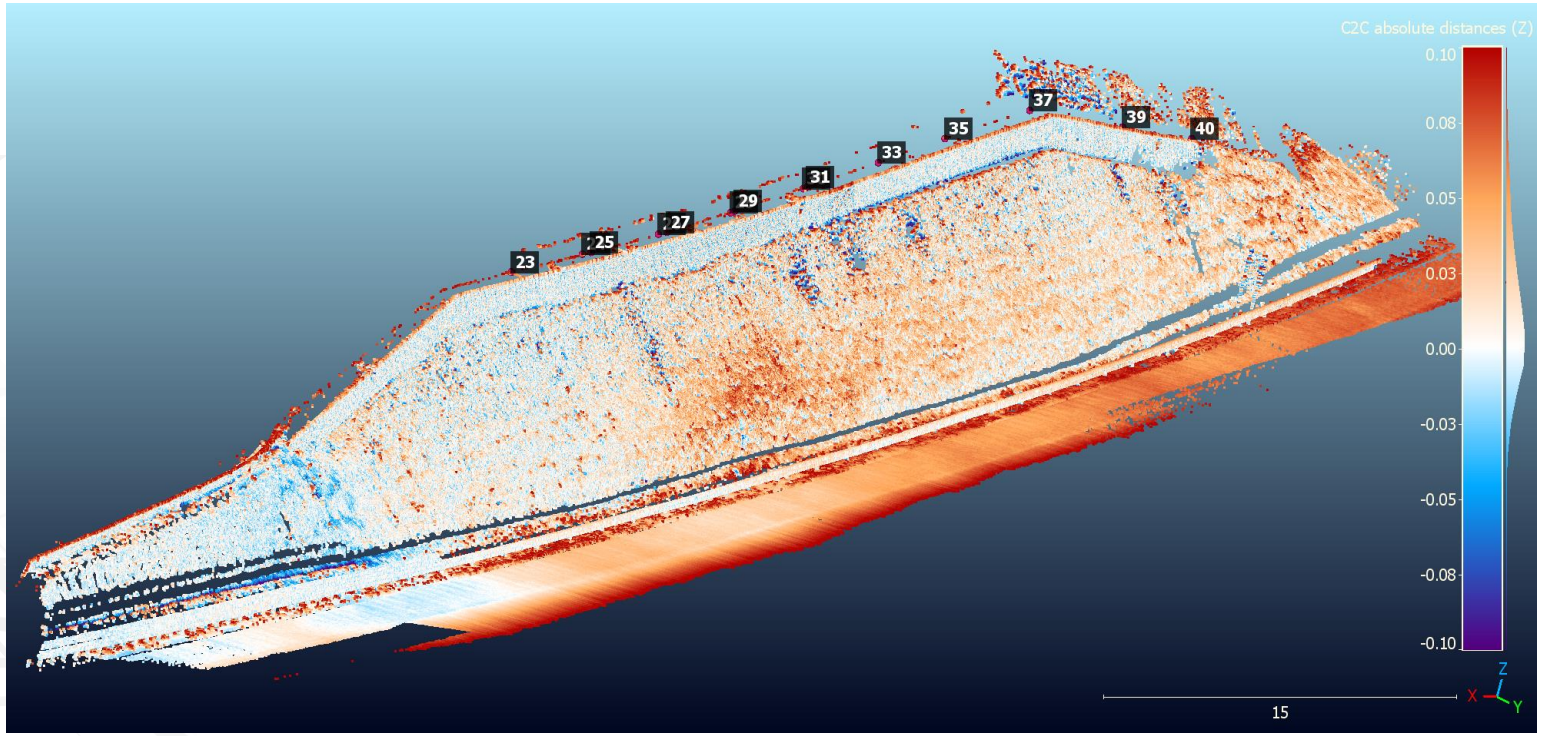
LIDAR based monitoring - bridge

- Bridge Boršt I. on H4 expressway
- Length 153m, constructed in 2006
- Challenging geological area
- Annual monitoring
- Successfull detection of horizontal and vertical movements of the structure



LIDAR based monitoring – retaining wall

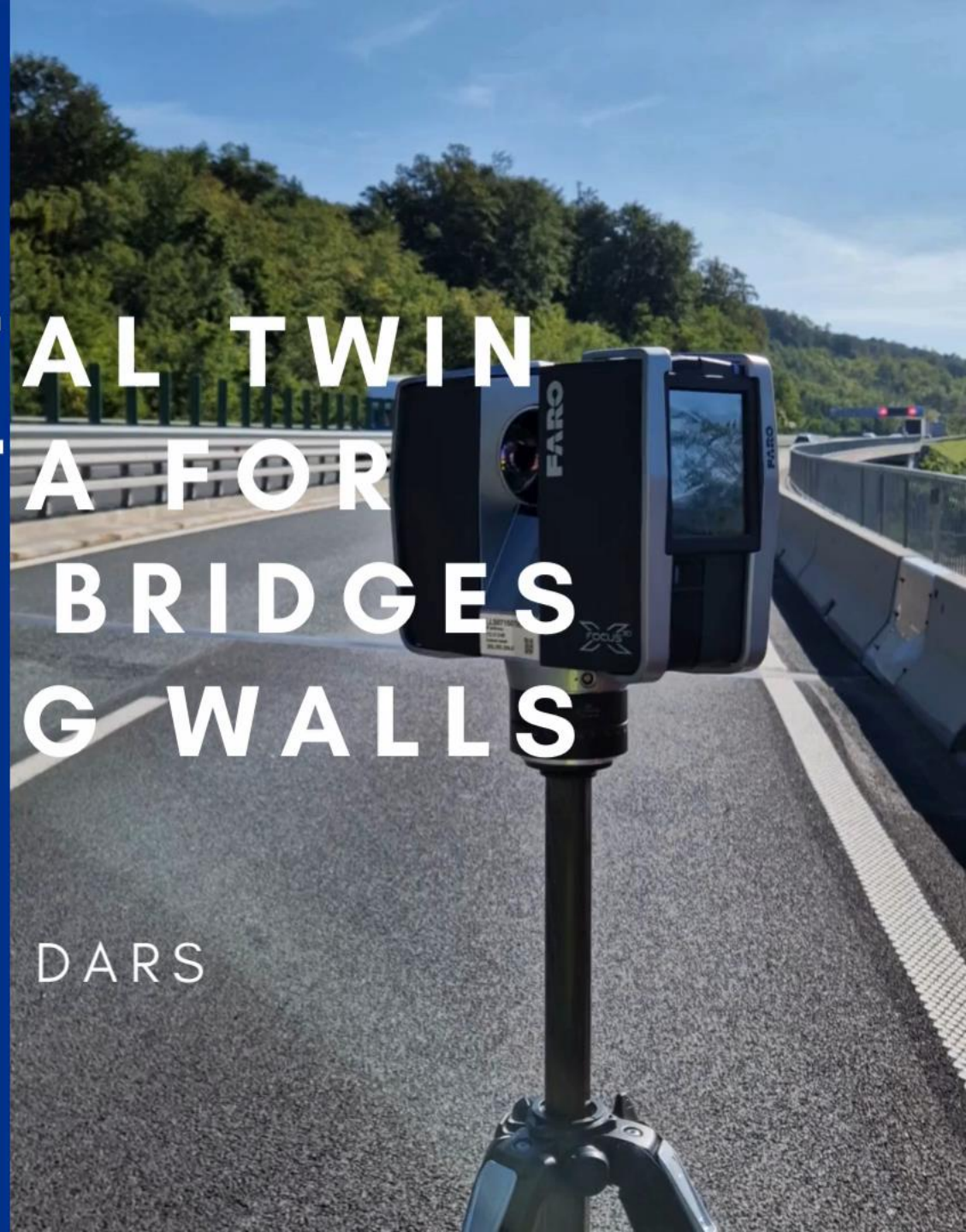
- Retaining wall Županov hrib on A1 motorway
- Length 234m, constructed in 1997
- Annual monitoring from 2008
- Successfull detection of horizontal and vertical movements of the structure



DARS

USING DIGITAL TWIN LIDAR DATA FOR MONITORING BRIDGES AND RETAINING WALLS

Jaka Gorisek, DARS



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THANK YOU

GRAZIE

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