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Road Wear Sensor System

Cost-Efficient Pavement Condition Assessment

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The solution

The RWSS (Road Wear Sensor System) is designed for gathering detailed orthoimages and point clouds of road surfaces to inspect them for wear and damage. It is optimized for cost efficient and non-expert operations, such that road operators can regularly and frequently record data of their roads themselves. The georeferenced data provided by the system can be integrated directly into existing GIS and data processing workflows at the operators.

Outputs

- Orthoimages
- 3D point clouds
- GIS layer
- Road wear map

Advantages

- Simultaneous coverage of multiple lanes
- Cost efficient
- Easy setup
- Non-expert usage

Functionality

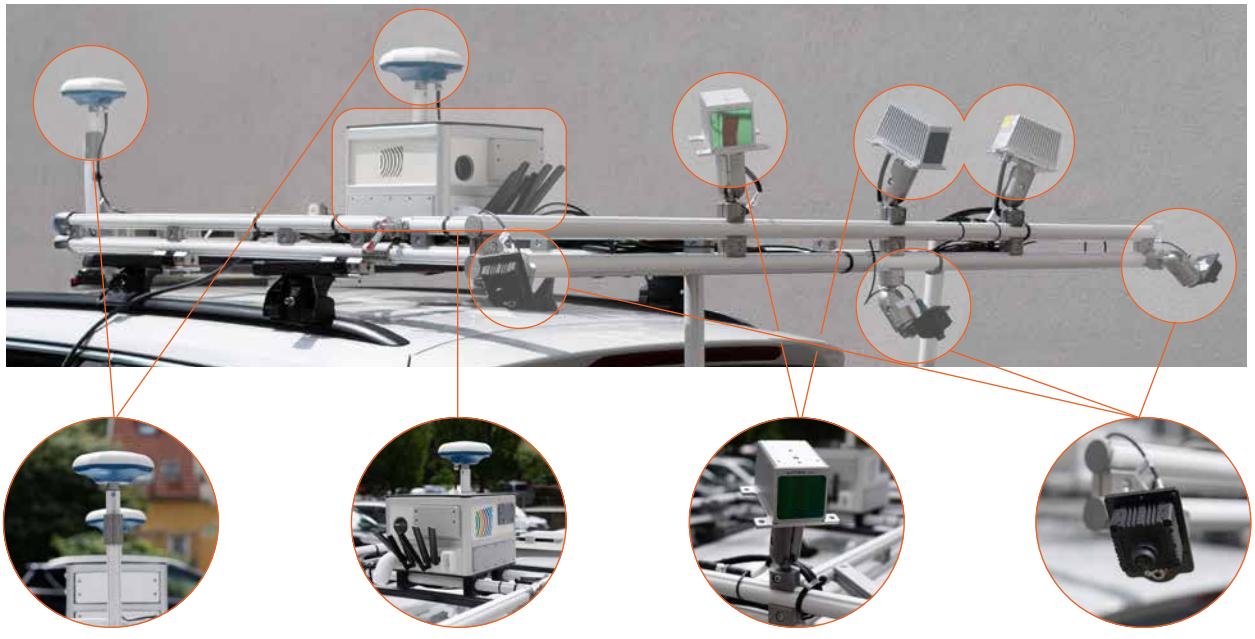
- High accuracy localisation
- High precision 3D model
- Road wear classification

Modules

- Hardware system
- Acquisition software
- Data processing software

The sensor system

- Components
  - Colour cameras covering 3 lanes
  - LiDARs covering 3 lanes
  - High-accuracy GNSS/INS system
  - Processing unit
  - Wi-Fi network
- Features
  - Synchronised sensor system
  - Simultaneous acquisition of 3 lanes
  - Exact georeferencing
  - Web interface



Dual antenna setup | Processing unit | LiDAR scanners | Colour cameras

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Data and Integration

Available Data

- Orthoimages
- Corresponding 3D point clouds
- Road wear features
- Details of segmentation

Presentation

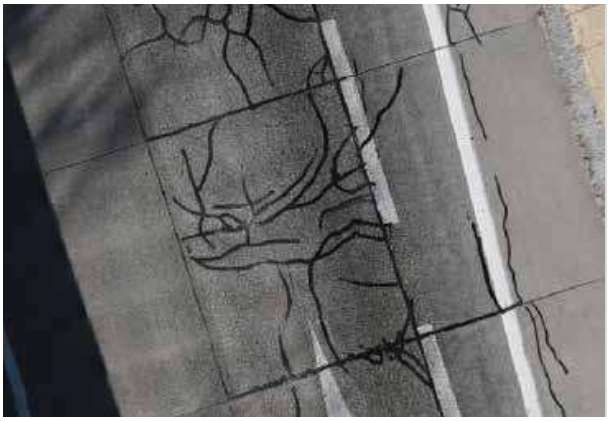
- GIS layer with segmentation results

Architecture

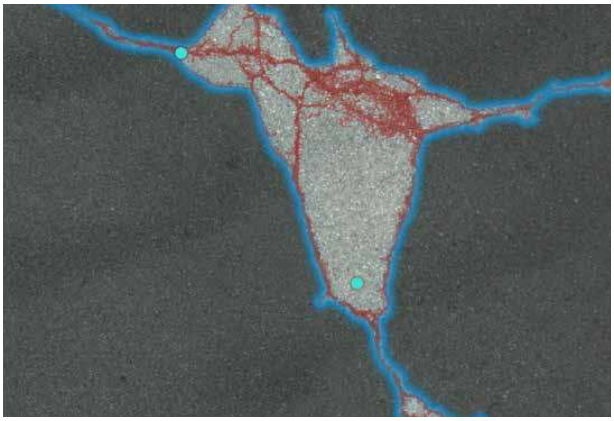
- Web GUI for data acquisition
- Road Wear data management platform
- Road operator interface

Orthoimage

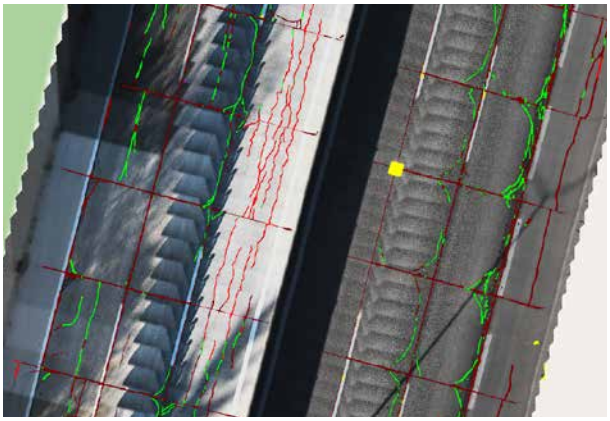
3D point cloud



3 lane orthoimage



Segmentation details



GIS layer

Road operator integration

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Forschungsgesellschaft mbH

DIGITAL
Institue of Digital Technologies

Steyrergasse 17, 8010 Graz

DI Dr. Martina Uray
phone: +43 316 876-17 36

DI Roman Lesjak
phone: +43 316 876-53 18

DI Patrick Luley
phone: +43 316 876-17 79
rwss@joanneum.at

More information