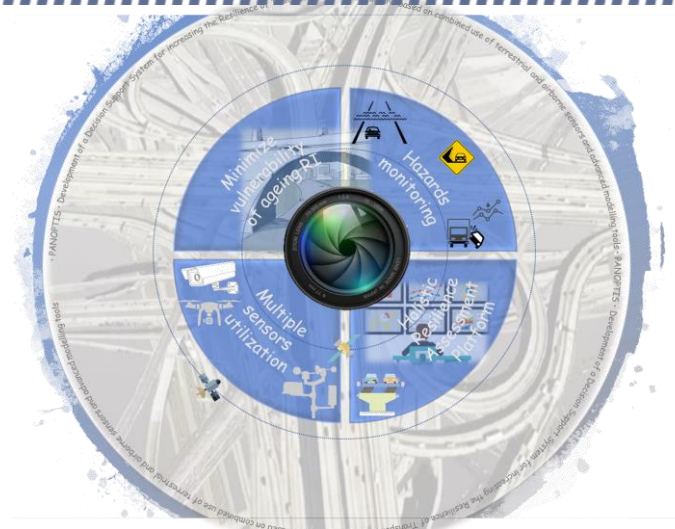
PANOPTIS

Newsletter N° 4 - November 2020

Development of a Decision Support System for increasing the resilience of transportation infrastructures based on combined use of terrestrial and airborne sensors and advanced modelling tools



Continuous monitoring using multimodal sources for Road infrastructures.

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acciona

AIRBUS DEFENCE & SPACE

EGNATIA ODOS A.E.

C4Controls

CORTE

Future Intelligence TELECOM ENGINEERING COMPANY

FMI

hydus

IFSTTAR

SOFiSTiK COMPETENCE CENTER

ARISTOTLE UNIVERSITY OF THESSALONIKI

National Technical University of Athens

UNIVERSITY OF TWENTE. ITC FACULTY OF GEO-INFORMATION SCIENCE AND EARTH OBSERVATION

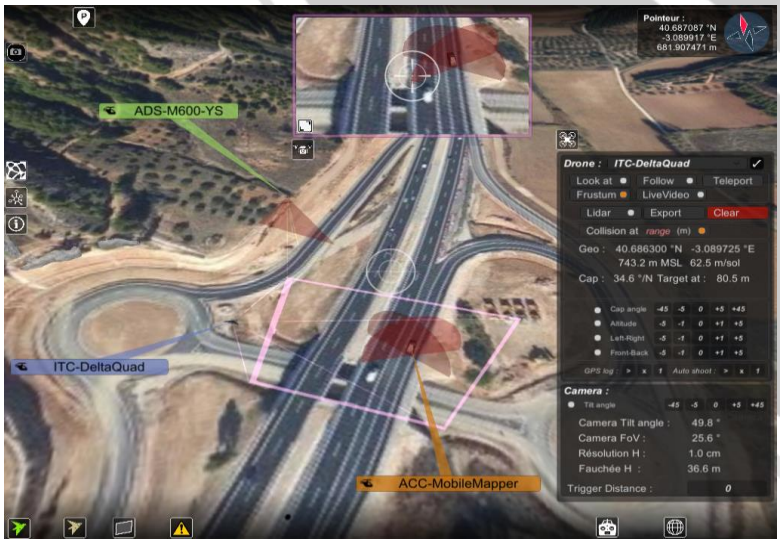
This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No 769129.

A 3D Road Survey management tool

Airbus UAV carrying a YellowScan lidar scanner.

The Acciona's MobileMapper carrying dual laser scanners analyzing the road surface.

Hybrid drone carrying an RGB camera.

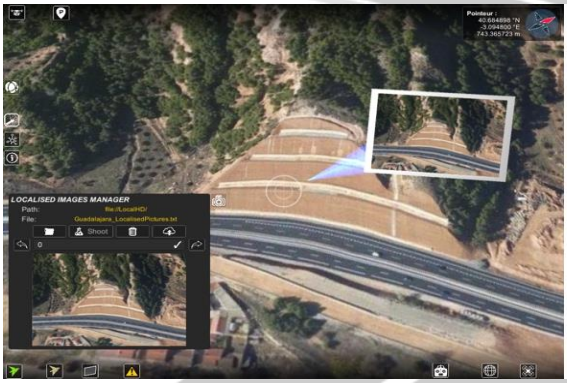


Summarizing:

- Offers a comprehensive 3D view of the survey environment and mission activities
- Defines local missions for the different operators and their means.
- Simulates missions to check consistency including obstacle detection, landscape shadowing effects/inter-visibility, coverage, and many more.
- Pushes these mission details to each operating dedicated system.
- Monitors the mission operation in real time, by following the device GPS/Telemetry in a 3D map of the area, and check for collision risks between systems.
- Displays on accurate 3D location, in real time or after postprocessing, the results/products gathered or generated by the different sub-systems
- Shares the chosen products and associated reports to the Panoptis Head Quarters

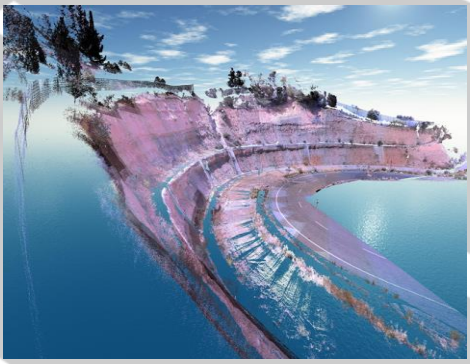
Defects and erosion monitoring on slopes

UAVs can be used to monitor the degradation of slopes, due to weathering, paying attention to loss of stability due to erosion.



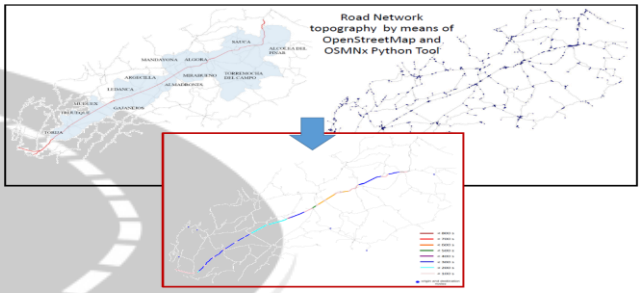
Defects and erosion monitoring on slopes

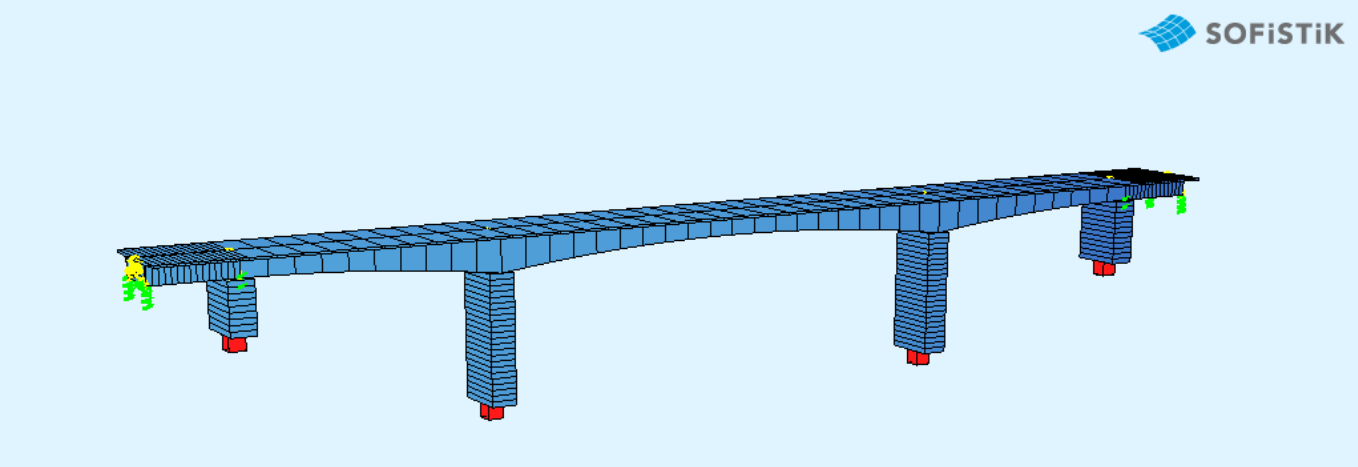
The point clouds generated by LIDAR mobile mapping are currently used for detailed digitalization of the road and/or its road assets.



Complex network analysis for RI

Complex network analysis assesses the performance of the road infrastructure-network and road vulnerability with the implement of graph theory.





Multi-Hazard Vulnerability Modules (MHVMs) are defined and used within the Holistic Risk Assessment Platform (HRAP) of PANOPTIS.

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