

R&D PROJECT

Title of the project

ICT platform for the management of safe roads and efficient drivers

Acronym

PAVIRE

Content of the project

Nowadays, holistic pavement maintenance management and monitoring platforms (PMMP) are the most suitable solution for the integrated management of road systems. Such solutions allow the design, integration and implementation of a portable, real-time, automated visual inspection system for monitoring and analysing pavement problems, which can be installed in non-specialised vehicles or using road users as potential data providers.

The general objective of the PAVIRE project is the development of an Information Communication Platform (ICT) for the management of safer roads and more efficient drivers (detection of cracks, disintegrations, deformations, potholes in the pavement, types of driving, calculations of consumption and CO2 emissions) based on the use of accelerometers and GPS systems embedded in mobile phones, for the early detection of surface damage to the pavement and reduction of fuel consumption and CO2 emissions of a vehicle.

General objectives

- Conceptual design of a complete solution for managing safer roads and more efficient drivers.
- Development of processing techniques for context recognition from accelerometer data.
- Development of an ICT platform capable of integrating, managing, collecting, storing and processing the data provided by the devices embedded in Smartphones.
- Validation of the platform, both in the laboratory and in an operating environment, to technically evaluate the robustness and functionality of the system, as well as to reflect on the proposed innovation in the workflows.

Results and conclusions

Two field tests have been carried out:

- Test in the works of the B-40 motorway in Viladecavalls, where the first tests of the PAVIRE application were carried out for calibration and eventual updates.
- Test in the Vallvidrera tunnels, where data from different mobile phones were recorded over several passes, thanks to which heat maps were obtained to detect the points of greatest acceleration and braking. For a correct correlation of these data with the IRI of the section analysed, however, it would be necessary to have data with a higher frequency, which would require the use of more sophisticated telephones, which remains as future work.



BUSSINESS AREAS
Infrastructure area
COMSA, S.A.

DURATION
2018-2020

BUDGET
658.643,32€

KEYWORDS

ICT platform, efficient driving, security, road management, pavement

COORDINATOR

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EXTERNAL FUNDING

