

PRESS RELEASE

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VEDECOM presents 'Marque ta Route' (mark your road), a software programme that maintains road markings

The quality and reliability of road markings will play a key role in the safety of autonomous vehicles following their introduction onto our roads. To prevent the non-detection of road markings, the 'Marque ta Route' project has come up with a range of tools for reliability analysis, and assistance with replacing road signs. The software - a veritable highways management assistant - won the First Prize for Innovation in the Buildings/Public Works/Highways category of the Grand Prix de l'Innovation of the Salon des Maires et des Collectivités Locales.

A software solution for maintaining retro-reflective road markings

Launched in December 2018, the 'Marque ta Route' project is based on the PhD thesis of Maxime Redondin, a researcher at the Institut VEDECOM. This preventive maintenance assistance software for retro-reflective road markings is largely intended to help infrastructure managers better understand the condition of road markings to optimise maintenance operations. A set of algorithms analyses road marking inspections performed with current monitoring tools i.e. tracer vehicles equipped with retro-reflectometers that test the light reflected back by the markings when lit up by a vehicle's dipped beams. 'Marque ta Route' automatically performs a complete analysis of the retro-reflection data of the lane markings, as well as producing fun and publishable maintenance plans.

The right maintenance at the right time at the right price

The 'Marque ta Route' replacement strategy comprises four steps. Firstly, the software creates a database containing all the road infrastructure maintenance information e.g. inspections on lane markings, descriptions of the road network, etc. Lanes are then segmented into strategic maintenance areas, each characterised by the same level of deterioration and lifespan. For each zone, a model of the replacement markings is defined, according to a lifespan strategy (recommendation for a systematic replacement strategy) or a current deterioration strategy (recommendation of a replacement strategy based on the actual deterioration). Finally, the software proposes and compares different preventative replacement strategies for each zone. These plans fully take into account allocated budgets and propose replacement frequencies that offer the best cost savings, and a minimum risk of insufficient maintenance.

Getting ready for autonomous vehicles

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On 22 October 2019, Maxime Redondin won First Prize for Innovation in the Buildings/Public Works/Highways category at the Grand Prix de l'Innovation of the Salon des Maires et des Collectivités Locales. The software addresses the leading concern of all road infrastructure managers: how can we continue to maintain roads when global maintenance budgets are decreasing? The project will then focus on gathering data from autonomous vehicle sensors. These sensors, which have a crucial need for detecting road markings, pave the way for several promising applications. And provide an opportunity for 'Marque ta Route' to go even further by contributing to the future of new forms of mobility.

"Thanks to the research results, we are able to demonstrate our ability to innovate in the broadest sense of the vehicle's perception of the environment," says Philippe Watteau, CEO of de VEDECOM. *"This software already provides some interesting vehicle safety applications based on ADAS, and will be very promising for the future of autonomous vehicles."*

"Our solution relies on a highly original scientific approach based on the classification of data, reliability, maintenance and lifespan," explains Maxime Redondin. *"Our retro-reflective data management software is based on recent scientific results, and also offers road asset management tools."*

About VEDECOM

VEDECOM is an institute for energy transition (ITE) founded on unique cooperation between firms in the automotive and aviation sectors, mobility ecosystem infrastructure and service operators, academic research bodies and Ile-de-France local authorities. The role of VEDECOM is to forge closer ties between academia and industry. The institute helps them to achieve a high standard of innovation in the area of mobility and, in particular, in electric vehicles, autonomous and connected vehicles and shared energy and mobility infrastructure and services. VEDECOM is a part of the French government's PIA future investment plan. Its founding members are Cetim, ESIGELEC, ESTACA, IFPEN, IFSTTAR, PSA Group, Renault Group, Safran, UVSQ and Valeo.

Key figures in 2019 : over 50 members, 3 research areas and 1 training program, 200 employees, 14 R&D projects, 12 European projects, over 300 publications, 37 patents, 24 copyrighted projects, 70 thesis, 1 business subsidiary, VEDECOM Tech, created in February 2017.

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