

The European project “ESRIUM” to use and maintain EGNSS-enabled smart road infrastructure launched remotely. The consortium that makes up the “EGNSS-enabled Smart Road Infrastructure Usage and Maintenance for increased energy efficiency and safety on European road networks” (ESRIUM) project came together online to kick-start the project on 12th December 2020. ESRIUM is funded under the programme Horizon 2020 to foster greener and smarter road usage, road maintenance, and increase road safety.

ESRIUM key innovation will be formed by a homogeneous, accurate and recent digital map of road surface damage and road wear. ESRIUM's core proposition is a data platform, which hosts highly detailed EGNSS-referenced map data of road damage and associated safety risks at centimeter-level resolution. Further addressed as “road wear map”, it will contain unique information, which is of value to multiple stakeholders: road operators will be able to lower the road maintenance effort by optimal planning. Further, road operators will be able to lower road wear and increase traffic safety especially for heavy vehicles.

Considering the market introduction of partly automated truck fleets, the precise track of these vehicles can be adjusted by communicating precise routing recommendations in- and crosslane. Truck fleet operators following these recommendations can receive tolling benefits and increase the general safety for their vehicle fleet. Especially with the increasing levels of autonomy, systems will utilize infrastructure support to handle the requirements of the automated driving task and additional external requests.

In ESRIUM, these opportunities are addressed by utilizing C-ITS infrastructure and EGNSS based localization in planning the trajectories of such automated vehicles. Key to the ESRIUM innovation is a precision localization service, which provides reliable localization information of road damages and of the vehicles using the roads. Considering a European-level business-case, only Galileo may provide such a service in homogeneous quality, even at very remote locations on the European continent. The members from 5 different countries, come from the business and academic community and will work together for the next three years for the replicability and sustainability of project results. Two tasks in ESRIUM at project start for the Logistikum are the use case description and the non-technical user requirement-analysis. With those tasks, the baseline in the project is nailed down and all future actions are based on that use case specifications.

In a later stage of the project, user acceptance evaluation, business model aspects and the impact analysis regarding reducing CO₂-emissions are the core research areas. Necessary steps to be taken are (1) starting with setting-up an appropriate evaluation design, (2) collecting data, e.g. within a test week in Austria (DigiTrans testing area), (3) analyzing gathered data, and (4) coming-up with recommendations for stakeholders to implement ESRIUM research results.

Project Factsheet:

The ESRIUM project is funded by the European Union within the H2020 programme and will run for 36 months (December 2020 – November 2023). The project has a total budget of 3,410,893,75 Euro (European Commission Contribution 3,000,000 Euro) and will be coordinated by JOANNEUM RESEARCH Forschungsgesellschaft mbH

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