

5G-MOBIX

Using 5G to enable Cooperative, Connected and Automated Mobility in European cross-border and urban corridors



Inspiration

At the dawn of a next industrial revolution, the digital transformation from 4G to 5G (i.e. the fifth-generation mobile communication technology) has been largely discussed, and is part of the European Commission's priorities. However, the implementation of this new generation of communication technology requires a strong standardisation that is only possible with the input of practical use cases, technical validation and business impact analysis. The deployment of Cooperative, Connected and Automated Mobility (CCAM) with 5G connectivity represents an important challenge that would enable the European Union, as well as its industrial and academic actors, to open up new market opportunities and make a global impact, while considering the technical and organisational differences between European countries.

Innovation

LIST is involved in the project along with two other Luxembourgish players - University of Luxembourg and Intrasoft International SA - and its role is three-fold. As "Quality Manager" LIST is responsible for assessing the technical and operational quality of 5G-MOBIX to ensure that the project delivers its ambitious results. LIST researchers will develop new mobility and network simulations, particularly studying the impact of road topology on network connectivity with a view to making recommendations on the deployment strategies and the positioning of 5G antennas. With the help of these simulations, LIST will contribute to draw the business impact analysis by assessing the economic and social impacts of the technologies studied in the project, as well as the business models tested in the corridors.

Impact

5G-MOBIX will enable to advance in the technical and commercial validation of 5G in an "extended CCAM" context across Europe. This public-private research shall result in a validated cost/benefit analysis of cross border 5G deployment enabling CCAM along 5G corridors potentially including several operator's domains. Its input will also help to complete the international standardisation of 5G, which is fundamental for industries ranging from automotive to telecommunication, by identifying spectrum and standardisation gaps.

From a national perspective, the applications of such technology will not only bring a number of key benefits to Luxembourg, but will also help to provide a better quality of life for its citizens. The contribution of LIST and its partners to this unprecedented European project will bring to the Grand-Duchy innovative and strategical competencies in the sector of communication technologies, for instance by helping assess the socio-economic impacts of the national rollout of 5G. 5G-MOBIX will collaborate with other European initiatives, in particular 5GCroCo, where POST Luxembourg is involved as project partner. This project will make use of a trial site for connected and autonomous driving between Luxembourg, Germany and France, which has been set up jointly by the Ministry of the Economy and the Ministry of Sustainable Development and Infrastructure in partnership with their French and German counterparts. All these initiatives form the cornerstone of an ambitious [Luxembourgish National initiative](#) to deploy 5G infrastructure across the territory as soon as possible.

Contact

5, avenue des Hauts-Fourneaux
L-4362 Esch-sur-Alzette
phone: +352 275 888 - 1 | LIST.lu

Francesco FERRERO (francesco.ferrero@list.lu)
Dr Sébastien FAYE (sebastien.faye@list.lu)
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