

5G for Connected Automated Mobility Across European Borders – Insights from EU H2020 ICT-18 and -53 Projects

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Abstract

Connected and Automated Mobility (CAM) services like Tele-operated Driving, High-Definition (HD) Mapping, and Anticipated Cooperative Collision Avoidance (ACCA) require uninterrupted network connectivity. This is a particular challenge in Europe where national borders can be passed without stopping while Mobile Network Operators (MNOs) usually only serve a single country. Today, vehicles keep the connection to the MNO of the country they come from until the signal is lost and then search and register with an MNO in the country they enter. This causes several minutes of service interruption, which is not acceptable for the aforementioned CAM services. Six Horizon 2020 ICT-18/-53 projects, therefore, conduct research on 5G cross-border/-MNO handover to enable seamless service continuity when crossing borders.

This talk will present the technical 5G solutions to enable service continuity across country borders with networks enhanced by Mobile Edge Computing/Cloud (MEC), end-to-end and predictive QoS, virtualization, and network support for precise positioning. Furthermore, results from the first trials of the 5GCroCo ICT-18 project at the Metz-Merzig-Luxembourg 5G Corridor will be presented.

Bio



Maciej Muehleisen received his Ph.D. on “Voice over LTE” from RWTH Aachen University in 2015 and worked as a group leader for vehicular communication at Hamburg University of Technology (TUHH) from 2012 until 2016, focusing on highly reliable aircraft and maritime networks.

He is with Ericsson Research since 2017 and leads the architecture work package of the EU funded 5GCroCo projects on 5G for CCAM in cross-border environments, where he also serves as deputy Technical Coordinator. As “Industry Verticals Coordination” in the Research Area “Networks”, he is furthermore supporting the technical coordination of Ericsson’s efforts in the Automotive Edge Computing Association (AECC) and 5G Automotive Association (5GAA). His key research interest is in end-to-end design, evaluation, and approval of safety-critical communication services.