

## **Edge Computing Support for V2X Communications on 5G Technology**

Vehicles and transportation systems are essential parts of the today society, being driving factors for the development of vehicular networks and associated services. The vehicular-to-everything (V2X) concept comprises several communication modes such as: vehicle-to-vehicle (V2V), vehicle-to-pedestrian (V2P), vehicle-to-road infrastructure (V2R/V2I), and vehicle-to-network (V2N) (as defined in 3GPP documents). An extension of V2X is Internet of Vehicles (IoV), seen as a global network which includes V2X. The IoV objectives include vehicles driving services but also others - like vehicle traffic management in urban or country areas, automobile production, entertainment services, road infrastructure construction and repair, etc.

The fifth generation 5G technology is a strong candidate to support the IoV/V2X communications and services. 5G offers highly flexible and programmable end-to-end communication, networking, and computing infrastructures achieving high performance (throughput, latency, reliability, capacity, and mobility). 5G network slicing (with logical, and mutually isolated networks sharing the same physical infrastructure) can serve different classes of applications. Dedicated 5G slices can be constructed for V2X use cases, to meet their special requirements (e.g., low latency, high reliability, security, throughput, mobility). However, the high dynamicity of the environment and the complexity of V2X services, ask for edge-oriented computing infrastructures.

This keynote presentation provides an overview on edge computing support for V2X/IoV communications and especially the integration of Multi-access Edge Computing (MEC) in the 5G systems including and slice - based architectures.