

CopITS: The first connected car standard-compliant platform in Qatar and the region

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Given the clear impact that mobility has on economical and social development, the continuous increase in the number of vehicles coupled with the increase in mobility behavior of people are creating new problems and challenges that need to be holistically addressed to ensure safe, sustainable, efficient and environmentally friendly mobility systems. Cooperative Intelligent Transportations Systems (ITS) allow the transportation infrastructure, vehicles and people to be connected wirelessly (through WiFi-like technology, 3G, etc) and contribute to solve these new challenges.

QMIC implemented a Connected Car (CopITS) platform that allows vehicles and road infrastructure to exchange, wirelessly, data packets enabling new cooperative applications for road safety (e.g. accident avoidance application), traffic efficiency (e.g. green light optimization application), and infotainment (e.g. media and data downloading). This platform implements the latest draft of the architecture developed within IEEE and ETSI and incorporates new enhancements in terms of communication protocols and mechanisms, which outperform existing ones by enhancing data transfer for vehicle-to-vehicle (V2V) and vehicle-to-infrastructure scenarios as well as the overall performance of the system. Simulation studies using an integrated communication/traffic simulator have been conducted to investigate important metrics like scalability, efficiency, and resilience of these mechanisms

Implemented system and applications have been successfully tested in-lab and demonstrated during several events in Qatar using a real car (on-board unit) and a traffic light (roadside unit). Moreover, QMIC's Connected Car platform has been successfully tested in 2011 and 2012 Cooperative Mobility Services Interoperability tests by running all mandatory test cases, which demonstrated its interoperability with the implementations of other vendors and its conformance with the standards.

We believe that QMIC's Connected Car platform is an important contribution towards putting Qatar on the world map of the "best connected countries" and being ready to host global events like the football FIFA World Cup 2022.