

## **5G – supporting the transformation of European mobility**

***5G will be more than the next mobile network evolution, it is set to be a real game changer for citizens and industry alike, addressing societal challenges and meeting the connectivity needs of new innovative services and businesses. Compared to previous generations, 5G will provide a significantly improved performance, handling up to a thousand times higher data volume with a similar increase in device density.***

Thanks to this improved performance, 5G will be in a position to deliver enhanced mobile broadband services to support the digital transformation of European industry, including the automotive industry. 5G will also support the deployment of IoT with billions of connected devices over the next decade.

5G will be a key element in an industrial revolution across all sectors, leading towards distributed production management, low-energy processes, cooperative robots, and smart manufacturing and logistics. The transport sector, in particular, will become highly automated and provide new mobility business models for the transportation of persons and goods.

### **C-ITS continuity of service**

Cooperative ITS (C-ITS) in Europe requires continuity of service, so it will be deployed concurrently with future wireless technologies, such as 5G for instance. Continuity of service will prevent vehicles equipped with earlier connectivity technologies from being excluded from the C-ITS eco-system. “Whatever the technology, safety applications will always require guaranteed uninterrupted communication. 5G is a promising mobile communication technology that can provide C-ITS communication. Considering the potential for reducing the number of fatal accidents, Dynniq anticipates the immediate implementation of C-ITS technology,” said Cees de Wijs, CEO of integrated mobility and energy solutions provider Dynniq.

Connected and automated driving concepts address key societal mobility challenges, in particular safety and quality of life in urban and densely-populated areas. Connected vehicles are able to learn from each other to gather and maintain a complete and reliable picture of the driving environment. For instance the presence of other road users, including pedestrians and cyclists, and also new road hazards, dangerous crossings or hidden corners will be made known to the entire fleet thanks to the Internet of Things.

Promoting automated driving with IoT is the main objective of the EU-funded [Autopilot](#) project, coordinated by ITS Congress organiser ERTICO. ERTICO will also participate in the EU-funded 5G-DRIVE Research and Innovation Action, for developing and validating key 5G functionalities and services, including network planning through pre-commercial testbeds for eMBB and V2X services, in collaboration with a twinned Chinese project led by China Mobile.

### **Breakthrough mobility concepts**

“5G will enable the digital transformation of the transport sector towards a global Digital Smart Mobility paradigm, providing breakthrough mobility concepts and new innovative applications and services

matching user needs and societal challenges,” said François Fischer, Senior Manager Connected and Automated Driving at ERTICO.

Automated driving is a safety and time critical application with stringent connectivity requirements, in particular concerning latency. 5G will provide low-latency (<5 ms) connectivity that meets autonomous driving requirements. Fully automated driving will only be possible by providing all connected vehicles with a virtual picture of the driving environment in cloud and edge computing architectures, for which 5G network slicing features will be a major requirement.

Creating and maintaining a reliable virtual representation of the driving environment will also require the collection of data from billions of connected sensors. The challenge of this high density of connected objects will be addressed by 5G’s massive Machine Type Communications (mMTC). Finally, Artificial Intelligence will be the ultimate enabler of driverless vehicles, particularly through deep learning and computer vision.

### **Join the 5G conversation at ITS World Congress**

Reflecting the transformative potential of 5G, a number of sessions at this year’s ITS World Congress are dedicated to this topic. The increased cybersecurity threat that goes hand in hand with the multiple new uses and applications offered by 5G is also dealt with in a number of related sessions.

#### **5G-related sessions**

ES09: Delivering Effective Cooperative, Connected and Automated Mobility (CCAM)  
SIS17: Evolution from Current Automotive Connectivity and its Deployments to 5G and 5G C-V2X  
SIS31: 5G with Satellite – Delivering Resilience and Reach  
SIS55: Fusion of Road Infrastructure and Vehicle Sensor Data for Automated Driving  
NS9: 5G /G5 Opportunities and Telecom Connections with C-ITS

At the congress, ERTICO will also host an informal workshop with a focus on: 5G for Automated Mobility.

#### **Cybersecurity-related sessions**

ES11: Enhancing Cybersecurity & Resilience of Transport Infrastructure  
SIS10: Assessing Next Generation Technologies for Emerging Future Transportation Environments  
SIS36: ICT Serving Automated Road Transport  
SIS60: Cybersecurity For Public-Facing ITS Systems

To take part in the 5G and cybersecurity discussion at ITS World Congress, register [here](#). To view the full programme click [here](#), and for more information about the ITS World Congress 2018, please visit [www.itsworldcongress.com](http://www.itsworldcongress.com).