



Press release
February 24, 2017

Towards 5G Initiative Welcomes Qualcomm, Shows Fast Results

- First results of the experimental platform on network-based communications showcase improved performance, lower latency
- Qualcomm is the newest member of the “Towards 5G” initiative for direct communication C-V2X technology testing
- Demonstration available during Mobile World Congress 2017 at the Orange booth, Hall 3, Stand D10



Ericsson (NASDAQ: ERIC), Orange and PSA Group have taken a significant step towards the realization of 5G technology for connected vehicles after conducting field trials to test advanced applications in France.

The initial phase of testing demonstrated Cellular V2X (C-V2X) capabilities on the evolution towards 5G in a real environment over two use cases dedicated to the connected vehicles: “see through” between two connected vehicles on a road, and “emergency vehicle approaching,” aiming at notifying drivers when an emergency vehicle is nearby in real-time.

These two use cases, currently developed and tested in the experimental network, have taken advantage of improved latency, and high throughput performance, using the network-based capabilities of C-V2X to deliver a high-resolution video stream between two vehicles, demonstrating reactivity to show real time event notification.

Advanced network features implemented in a new radio access network (RAN) configured with edge-computing features, allowed improved end-to-end transmission, with an average delay of 17 milliseconds for vehicle-to-network-to-vehicle (V2N2V) communications. This is in comparison to the 30-60 millisecond results measured in today’s LTE networks, and at a vehicle speed of 100 km/h. These results were obtained on the 2.6 GHz frequency band, delivering a 100 Mbit/s performance. [Video of the results](#)



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The next steps of the “Towards 5G” initiative will focus on:

- Implementing a dedicated network slice to prioritize intelligent transportation system (ITS) vehicular traffic and show improved isolation while experiencing other mobile broadband traffic in the vehicle
- Using direct communication features of C-V2X to test vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I) and vehicle-to-pedestrian (V2P) capabilities, while assessing the enhanced performance brought by C-V2X Release 14 with regards to direct communication range, latency and reliability.
- The “Towards 5G” initiative members will help to develop new use cases to assess how C-V2X with 5G NR features will be designed to support advanced applications, including traffic flow optimization, improved safety and automated driving.

To support direct communications testing, the “Towards 5G” initiative looks forward to welcoming Qualcomm Incorporated (NASDAQ: QCOM), as a new member.

“We are pleased to join PSA, Orange and Ericsson in the ‘Towards 5G’ initiative,” said Nakul Duggal, vice president, product management, automotive, Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated. “Cellular-V2X R14 and its strong evolution towards 5G, using both network-based and direct communications, has great potential in helping achieve our common vision for safer, highly connected and smarter transportation.”

C-V2X technology, as defined in the 3rd Generation Partnership Project (3GPP) Release 14 specifications, is expected to support safety and other enhanced use cases. Subsequent releases of the 3GPP specifications, including 5G New Radio (NR), are expected to evolve both network and direct communications to enable advanced use cases to support autonomous driving.



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Discover more about the “Towards 5G” initiative during Mobile World Congress in Barcelona, February 27 – March 2.

NOTES TO EDITORS

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Ericsson is a world leader in communications technology and services with headquarters in Stockholm, Sweden. Our organization consists of more than 111,000 experts who have provided customers in 180 countries with solutions and services since 1876. Together we are building a more connected future where anyone and any industry is empowered to reach their full potential. Net sales in 2016 were SEK 222.6 billion (USD 24.5 billion). Ericsson is listed on NASDAQ OMX stock exchange in Stockholm and the NASDAQ in New York. Read more on www.ericsson.com.

About Orange

Orange is one of the world's leading telecommunications operators with sales of 40,9 billion euros in 2016 and 155,000 employees worldwide at 31 December 2016, including 95,000 employees in France. Present in 29 countries, the Group has a total customer base of 263 million customers worldwide at 31 December 2016, including 202 million mobile customers and 18 million fixed broadband customers. Orange is also a leading provider of global IT and telecommunication services to multinational companies, under the brand Orange Business Services. In March 2015, the Group presented its new strategic plan “Essentials2020” which places customer experience at the heart of its strategy with the aim of allowing them to benefit fully from the digital universe and the power of its new generation networks. Orange is listed on Euronext Paris (symbol ORA) and on the New York Stock Exchange (symbol ORAN). For more information on the internet and on your mobile: www.orange.com, www.orange-business.com or to follow us on Twitter: @orangegrouppr.

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About PSA Group

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With sales and revenue of €54 billion in 2015, the PSA Group designs unique automotive experiences and delivers mobility solutions that provide freedom and enjoyment to customers around the world. The Group leverages the models from its three brands, Peugeot, Citroën and DS, as well as a wide array of mobility and smart services from its Free2Move brand, to meet the evolving needs and expectations of automobile users. [The french automobile manufacturer](#) PSA is the European leader in terms of CO₂ emissions, with average emissions of 102.4 grams of CO₂ per kilometre in 2016, and an early innovator in the field of autonomous and connected cars, with 1.8 million such vehicles worldwide. It is also involved in financing activities through Banque PSA Finance and in automotive equipment via Faurecia. Find out more at groupe-psa.com/en.

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About Qualcomm Incorporated

Qualcomm's technologies powered the smartphone revolution and connected billions of people. We pioneered 3G and 4G – and now we are leading the way to 5G and a new era of intelligent, connected devices. Our products are revolutionizing industries, including automotive, computing, IoT, healthcare and data center, and are allowing millions of devices to connect with each other in ways never before imagined. Qualcomm Incorporated includes our licensing business, QTL, and the vast majority of our patent portfolio. Qualcomm Technologies, Inc., a subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, all of our engineering, research and development functions, and all of our products and services businesses, including, our QCT semiconductor business. For more information, visit Qualcomm's website, OnQ blog, Twitter and Facebook pages.

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