Fraunhofer IIS demonstrates 5G solutions for Industrial IoT at Mobile World Congress 2018

Erlangen, Germany/Barcelona, Spain: Fraunhofer Institute for Integrated Circuits IIS will present its latest mobile communication developments towards 5G at the Mobile World Congress, February 26 to March 1, 2018, in Barcelona, Spain. Live demonstrations will show how advancements in positioning and low-latency communication are accelerating industrial processes.

Wireless low-latency communication and high-precision positioning will enhance flexibility in industrial production processes. Moreover, industrial and especially production environments pose demanding requirements on reliability, latency, and positioning accuracy needed for seamless interaction between machines. The upcoming mobile communication standard 5G addresses these enhanced requirements.

Fraunhofer IIS is currently prototyping low-latency and high-precision positioning systems for legacy LTE and future 5G New Radio (NR). Two selected Industrial IoT live demonstrations can be seen at Mobile World Congress 2018, hall 7, booth 7G31:

**Low-latency communication**

Ultra-Reliable and Low-Latency Communication (URLLC) is a key enabler for seamless wireless interaction between machines in time-critical applications.

At the Mobile World Congress 2018 Fraunhofer IIS shows a low-latency demo for a visual inspection use case. The transmission system, which triggers the inspection cameras, is realized twofold: via a low-latency connection using the new LTE technology with shortened Transmission Time Intervals (LTE sTTI) and via a standard Wi-Fi connection for direct comparison. Visitors will experience a visual inspection scenario in a production process and the benefits of LTE sTTI for industrial use cases. The technology is able to provide reduced end-to-end latencies and a low variance in latency (jitter).

**High-precision positioning**

5G positioning will enhance the prevalent 4G positioning performance by introducing new technologies and features to overcome current limitations. This includes measures such as utilizing larger bandwidth to improve time resolution, taking advantage of dense deployments and introducing new advanced processing techniques.
At the Mobile World Congress Fraunhofer IIS demonstrates the achievable performance by exploiting these features in an Uplink TDOA architecture set-up as a dense indoor deployment. Visitors will be able to experience a logistics scenario via live stream from the Test and Application Center L.I.N.K. in Nürnberg, Germany, where an automated guided vehicle (AGV) and logistic workers are equipped with user equipment (UE). While the AGV is delivering the parts to assembly stations, the high-precision positioning output is shown as an overlay on the video stream from the factory floor.