AIT Austrian Institute of Technology
Collaboration offer for ICT H2020 calls:

5G Ultra reliable low-latency device-to-device (D2D) communication is strongly demanded in vertical markets like industry 4.0 or intelligent transportation systems (ITS) with applications such as:

(i) Replacement of cable connections to mobile actuators or sensor in industrial cyber physical system (CPS), and
(ii) for the provisioning of redundant sensor information (radar, optical, etc.) for autonomous vehicles to improve road safety.

In both cases harsh radio propagation environments lead to non-stationary fading processes that have a strong impact on the reliability and latency provided by the wireless communication link. The low-latency requirement is an important aspect that is different from other machine-type communications (MTC) link requirements.

Research interest and know how available at AIT in the research group of Thomas Zemen:

(i) Measurement, modelling and emulation of non-stationary multi-node communication channels in the targeted 5G frequency bands
(ii) Low-latency physical layer modulation formats for low packet error rates at short packet lengths (exploiting multiple diversity sources).
(iii) System-level test methodologies using the position of vehicles or machines for wireless control loops (autonomous driving, automation and control in factories).
(iv) SDR testbed implementations (physical layer wave forms and MAC algorithms)
(v) Protocols for low-latency operation in 5G networks (distributed MAC within a local context supervised by the 5G network)

For the above described application context and research topics AIT is interested to join a consortium in the following to calls:

ICT-07-2017 – 5G PPP Research and Validation of critical technologies and systems

Relevant keywords from work program (Strand 1): flexibly adapting to different “vertical” application requirements; extremely diverse set of connected machines and things; experimental testing with “vertical” sectors; novel air interfaces … supporting mission critical M2M communications; carrier grade communications for machine type communications (MTC)

ICT-09-2017 – Networking research beyond 5G

Relevant keywords from work program (Strand 1): excellence notable in the DSP domain; exploiting spectrum above 90GHz, new cooperation networking and protocols, notable in the mobility context; Cooperative networking: opportunistic networks, novel architectures and protocols for routing, latency and caching in complex networks for mobility**.**

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