

On ultra-reliability and channel characteristics in cluttered industrial environments

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Abstract

Ultra-reliable low latency communication is one of the key application spaces for 5G. In order to simultaneously provide ultra-reliability and low latency, we need to study the channel characteristics and identify challenging situations in the particular user scenarios. In this talk, we build on a recent measurement campaign in a large cleanroom environment performed within the EU project 5G-SMART and discuss channel behavior both at mid-band at 3.7 GHz and at high-band at 28 GHz. We analyze channel hardening effects with massive MIMO at mid-band and angular characteristics at high-band. We look at some critical scenarios and discuss how to support ultra-reliable low latency communication there.

Bio



Fredrik Tufvesson received his Ph.D. in 2000 from Lund University in Sweden. After two years at a startup company, he joined the department of Electrical and Information Technology at Lund University, where he is now professor of radio systems. His main research interest is the interplay between the radio channel and the rest of the communication system with various applications in 5G/B5G systems such as massive MIMO, mm wave communication, vehicular communication and radio based positioning. Fredrik has authored around 100 journal papers and 150 conference papers; he is fellow of the IEEE and his research has been awarded with the Neal Shepherd Memorial Award for the best propagation paper in IEEE Transactions on Vehicular Technology and the IEEE Communications Society best tutorial paper award.