

Challenges and Possibilities for Wireless IoT Connectivity on the path Beyond 5G

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Abstract

Perhaps the main innovation in 5G wireless systems has been the platform approach to connectivity: using a single system that can flexibly support connections with very diverse requirements. To achieve this, the connectivity space is defined through three generic connectivity types: enhanced Mobile Broadband (eMBB), Ultra-Reliable Low-Latency Communication (URLLC), and massive Machine-Type Communication (mMTC). This talk will provide a perspective on the evolution of the connectivity space, with an emphasis on the Internet of Things (IoT). Specific aspects that will be covered are interaction among different traffic types, timing and reliability requirements, as well as technologies used for supporting diverse types of connectivity, such as access protocols, spectrum usage, and resource allocation. Finally, the talk will provide perspectives on longer-term developments in IoT connectivity that could lead to significant changes in traffic patterns and requirements.

Bio



Petar Popovski is a Professor Aalborg University, where he heads the section on Connectivity. He received his Dipl.-Ing and M. Sc. degrees in communication engineering from the University of Sts. Cyril and Methodius in Skopje and the Ph.D. degree from Aalborg University in 2005. He is a Fellow of the IEEE. He received an ERC Consolidator Grant (2015), the Danish Elite Researcher award (2016), IEEE Fred W. Ellersick prize (2016), IEEE Stephen O. Rice prize (2018), Technical Achievement Award from the IEEE Technical Committee on Smart Grid Communications (2019) and the Danish Telecommunication Prize (2020).

He is currently a Member at Large at the Board of Governors in IEEE Communication Society. Prof. Popovski is a Steering Committee Member of IEEE SmartGridComm and IEEE TRANSACTIONS ON GREEN COMMUNICATIONS AND NETWORKING. He previously served as a Steering Committee Member of the IEEE INTERNET OF THINGS JOURNAL. He is currently an Area Editor of the IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS. Prof. Popovski was the General Chair for IEEE SmartGridComm 2018 and IEEE Communication Theory Workshop 2019. His research interests are in the area of wireless communication and communication theory. He authored the book “Wireless Connectivity: An Intuitive and Fundamental Guide”, published by Wiley in 2020.