

The journey from 5G towards 6G

Abstract: This talk will give an overview of the journey from 5G towards 6G evolution. The 5G has been built across three main application verticals namely, Enhanced Mobile Broadband (eMBB), Massive Machine Type Communications (mMTC) and Ultra-reliable Low Latency Communications (URLLC) as defined by ITU. To support these verticals, 5G has defined the following enablers: Massive MIMO, millimeter wave, cloudification of network infrastructure, network softwarisation and automation, network slicing and edge cloud computing. It is expected that 5G will provide flexibility in terms of openness, mobility, programmability and agility and robustness in terms of scalability, security and reliability in standardized manner. The journey towards 6G will describe the limitations of 5G technologies. Such journey includes smooth integration and interworking of Non-Terrestrial Networking technologies (NTN) with network architectures, use of Reconfigurable Intelligent Surfaces (RIS), evolution on virtualization technologies and use of AI to manage and optimize network resources, reduce energy consumption, and facilitate automation and orchestration and identify security threats and vulnerabilities. The talk will give an overview of 6G initiatives at both regional (e.g. one6G, 5G-PPP) and national (e.g. 6GFinlad, UKTIN) level.