Keynote 2
Trends and challenges from 5G towards 6G
Aarno Pärssinen, University of Oulu

Abstract: Commercial ramp up of fifth generation wireless communications is on-going with the set of new requirements from latency to bandwidth for new and enhanced applications and services. One of the key new enablers is the adaptation of mmW bands and devices supporting those also for personal use. This has major impact for RF design both in base stations and in mobile devices bringing large scale antenna arrays and related electronics into mass markets.

When industry is highly focused on bringing 5G to market academia is already starting to look visions and technology enablers for the next generation. Academy of Finland 6G Flagship program at University of Oulu focuses on new opportunities from fundamental technologies to trials in this field. In this presentation, the first vision towards next generation radio technologies for communications and sensing is shared and then some key challenges to achieve those will be discussed specifically focusing on radio implementation aspects.

Aarno Pärssinen received the M.Sc., Licentiate in Technology and Doctor of Science degrees in electrical engineering from the Helsinki University of Technology, Finland, in 1995, 1997, and 2000, respectively. In 1996, he was a Research Visitor at the University of California at Santa Barbara. From 2000 to 2011 he was with Nokia Research Center, Helsinki, Finland. During 2009-2011 he served as a member of Nokia CEO Technology Council. From 2011 to 2013, he was at Renesas Mobile Corporation, Helsinki, Finland working as a Distinguished Researcher and RF Research Manager. In 2013 he joined Broadcom, Helsinki, Finland as part of business acquisition and worked as an Associate Technical Director until September 2014. Since September 2014 he has been with University of Oulu, Centre for Wireless Communications, Oulu, Finland where he is currently a Professor. He is currently leading Devices and Circuits research area in 6G flagship program financed by Academy of Finland.

His research interests include wireless systems and transceiver architectures for wireless communications with special emphasis on the RF and analog integrated circuit and system design. He has authored and co-authored one book, two book chapters, more than 100 international journal and conference papers and holds several patents. He is also one of the original contributors to Bluetooth low energy extension, now called as BT LE. He served as a member of the technical program committee of Int. Solid-State Circuits Conference in 2007-2017, chairing the wireless subcommittee in 2014-2017.