

# Session 5

## 5G Standards – IEEE Role?

**Session Chair: Mehmet Ulema**  
**Manhattan College, New York, USA**

**IEEE 5G Summit**  
**Helsinki, Finland**  
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# Speakers

- **Alex Gelman, CTO, NETovations Consulting Group, USA**
  - **The IEEE/ComSoc ecosystem for Innovation and Standardization in 5G-relevant Technologies**
- **Jouni Korhonen, Nordic Semiconductor, Norway**
  - **IEEE 1914 NGFI (XHAUL): building the transport foundation for 5G**
- **Oliver Holland, King's College London, UK**
  - **Thoughts on Standardization of Spectrum Sharing Solutions for 5G**
- **Marja Matinmikko, University of Oulu, Finland**
  - **Micro operator driven 5G ecosystem for local service delivery**

# Dr. Alex Gelman

- **CTO of NETovations, LLC Consulting Group, Princeton, NJ focusing on Competitive Research and Intellectual Property Management**
- **Previously Chief Scientist of Panasonic Research Laboratory based in Princeton NJ, 1998-2007, Managing Industrial Research in Consumer Communications and Networking**
- **Applied Research, Bellcore, 1984-1998. Most Recently Director-Residential Access Architectures Research,**
- **Director of Standardization Programs Development, IEEE ComSoc, 2014-2017**
- **Four terms ComSoc VP, e.g. first elected ComSoc VP-Standards Activities 2012-2013**
- **Initiated ComSoc Standards Board in 2004 and served 2 terms as ComSoc Director of Standards 2006-2009**
- **Member of IEEE-SA Standards Board, 2006-2012**
- **Member of IEEE-SA Board of Governors, 2004-2005**

# Dr. Jouni Korhonen

- **A Principal R&D Engineer with Nordic Semiconductor, where he is focusing on cellular IoT.**
- **Previously, a Distinguished Engineer with Broadcom working on Ethernet-based BS architectures, Ethernet-based Fronthaul networks, and time-sensitive networks.**
- **Instrumental in forming the IEEE P1914.3 Radio over Ethernet Task Force and has been chairing and actively contributing to it from the beginning.**
- **Has been heavily involved with IPv6, DNS and other core network signaling matters in 3GPP.**
- **Held multiple leadership position within IETF and is still an active contributor with 38 published RFCs to date.**
- **Holds 56 granted patents.**
- **His research interests include the Internet at large, IPv6 and 3GPP system architecture evolution.**

# Dr. Oliver Holland

- **A senior researcher at King's College London.**
- **Has an established record of expertise and achievement on topics such as 5G networks and applications, and spectrum and spectrum sharing, among many others.**
- **Recently created and led the team/submission/idea that won the 0.5 MEUR European Commission Collaborative Spectrum Sharing Prize, and has edited two books on the topic of spectrum sharing.**
- **Heavily active in standardization and regulatory work, serving on the leadership in a number of IEEE standards groups including Chairing the IEEE P1918.1 Working Group on the Tactile Internet, and the IEEE Mobile Communication Networks Standards Committee, among others.**
- **Co-authored over 150 publications.**

# Dr. Marja Matinmikko

- **University Researcher and Project Manager at Centre for Wireless Communications (CWC), University of Oulu.**
- **Worked at VTT Technical Research Center of Finland Ltd in 2001-2015 where she led national spectrum sharing trial projects.**
- **Manages u05G project for developing a new micro operator concept to boost local service delivery in 5G from business, technology and regulatory perspectives.**
- **Holds a Dr.Sc. degree in Telecom Engineering from University of Oulu on spectrum sharing, and is finalizing her Ph.D. degree in Industrial Engineering & Management on stakeholder analysis for spectrum sharing.**
- **Published around 100 scientific papers and 100 contributions to spectrum regulatory forums in Europe (CEPT) and globally (ITU).**

# Opening Remarks

- **5G ecosystem is rather large and will cover many different areas:**
  - **Not only an evolution of LTE**
    - **New services, new technologies, new frequencies (<6 GHz, >6 GHz), new industries, new business models**
    - **“Rethinking” of fundamental areas used in previous ‘Gs’ (cell architectures, antennas, core networks, etc)**
  - **Opportunities for many SDOs to contribute**

# IEEE is Unique

- **A world class technical depth with 40+ societies and councils addressing many of the core technologies that will be integrated into 5G solutions.**
  - **Publications – top journals in many of these fields, high impact factor magazines**
  - **Conferences, Symposia, Workshops – highly regarded academic and professional events**
  - **Educational – face-to-face and online courses, tutorials, and training sessions**
  
- **World class standardization structure**