PANEL7: Future Directions of Communications: Vision, Standards and Requirements

The panel discussed the current and future direction of wired and wireless communications technologies, their supporting standardisation activities, and their requirements.

Topics to be addressed

- Advanced wired and wireless technologies for future communications
- Vertical Industry Requirements
- Standardisation directions

Talk titles

- David Law: **Don't forget the wires?**
- Toktam Mahmoodi: **Ultra-low latency status check, and ways forward**
- Maziar Nekovee: **Net Zero Communication Networks: What we have learned from 5G and the Road to 6G**
- Mona Ghassemian (&Modaretor): **Toward a Tactile Internet Reference Architecture: Vision and Status of the IEEE P1918.1 Standard**

Speakers

David Law- Don't forget the wires?

David Law is a Distinguished Technologist at Hewlett Packard Enterprise (HPE). David has worked on the specification and development of Ethernet products since 1989 including the development of Ethernet adapter cards, the first stackable Ethernet repeaters, stackable Ethernet switches, as well as being the technical lead on ASIC development teams for stackable repeaters and switching chipsets.

Throughout this time David has been a member of the IEEE 802.3 Ethernet Working Group. David currently serves as IEEE 802.3 Chair, having served as IEEE 802.3 Vice Chair from 1996 to March 2008. David currently also serves as a member of the IEEE-Standards Association (IEEE-SA) Standards Board and Chair of the IEEE-SA Patent Committee (PatCom). David has a BEng (Hons) from Strathclyde University.

Toktam Mahmoodi - Ultra-low latency status check, and ways forward

Toktam is a Professor in Wireless Networks, and head of the Centre for Telecommunications Research (CTR), at Department of Informatics, King's College London. She was visiting research scientist with F5 Networks, in San Jose, CA, in 2013, post-doctoral Research Associate in the ISN research group at Electrical and Electronic Engineering department of Imperial College during 2010 and 2011, and Mobile VCE researcher from 2006 to 2009. She worked on European FP7 and EPSRC projects aiming to push the boundaries of the next generation mobile communications forward.

Toktam has also worked in mobile and personal communications industry, from 2002-2006, and in an R&D team on developing DECT standard for WLL applications. She has a BSc. degree in Electrical Engineering from Sharif University of Technology, Iran, and a PhD degree in Telecommunications from King's College London, UK.

Maziar Nekovee- Net Zero Communication Networks: What we have learned from 5G and the Road to 6G

Nekovee is Dean of the AI Institute and Managing Director of the newly established 6G Lab (https://6g-lab.org) at University of Sussex, UK. His current research focuses on AI, (sub) THz communication and reconfigurable Intelligent meta-surfaces for beyond 5G/6G, and the applications of 5G/6G and AI in health, automotive, and more recently aerospace sectors. Prior to joining University of Sussex in 2017, he was Head of Samsung's European research and collaboration in 5G, where he contributed to development and standardisation of novel access technologies for 5G New Radio operating in millimeterwave frequencies.

Prior to Samsung he was with BT Research, where he worked on a range of fixed and wireless technologies, as well as working with BT's spectrum strategy and lines of business teams. Maziar has a PhD in Physics from University of Nijmegen and a first degree (cum laude) in EEE from Delft University of Technology, both in the Netherlands. He is chair of NetWorld Europe Technology Platform, WG on Enabling Technologies for Future Vertical Ecosystem Transformation (https://www.networldeurope.eu/enabling-technologies-for-future-vertical-ecosystem-transformation/).

Mona Ghassemian- Toward a Tactile Internet Reference Architecture: Vision and Status of the IEEE P1918.1 Standard

Mona Ghassemian has over 20 years of experience in the wireless and telecom research in industry and academia. She currently works at Huawei Advanced Wireless Technology Lab as 6G principal expert on industry vertical, working on strategic R&D roadmap of key technologies (particularly in vertical industries) relevant for next generation mobile communication system design. Prior to her current role, in her senior manager role at InterDigital Inc, she led a research team on the next generation networking.

She worked as a principal research scientist at British Telecom (BT) Research and Technology with a focus on future networks and security. Prior to her industry roles, she worked as a lecturer and senior lecturer at KCL, Greenwich and SBU supervising over a 100 postdocs, PhD and MSc researchers.

She has published over 70 papers, 13 patents, 2 book chapters and several contributions to 3GPP, IEEE and IETF standard organisations. She is a working member of IEEE SA 1918.1 (Tactile Internet) since 2016, and is currently the IEEE UK & Ireland section past-chair, the IEEE Region 8 Diversity, Equity, and Inclusion and the MGA nomination committee's member.