

- **Title** of the Special Session: 7th Special Session of COMMUNICATION FOR NETWORKED SMART CITIES (CORNER)

- **A brief description and motivation of the scope of the Special Session (~100 words)**

By 2030, the United Nations targets the development of smart cities that incorporate advanced communication methods, such as 6G wireless, to enable real-time data acquisition and utilization from distributed sensors. However, smart cities must also work within the limitations of available resources, which presents a variety of challenges. To overcome the challenges of smart city implementation, researchers are exploring new techniques and technologies such as 6G wireless, Intelligent Reflecting Surfaces (IRS), Unmanned Aerial Vehicles (UAV), and AI-assisted wireless communications. The use of 6G wireless technology can significantly improve network performance by optimizing energy consumption, spectral efficiency, latency, and other critical metrics. Meanwhile, Intelligent Reflecting Surfaces (IRS) can be employed to enhance wireless signal coverage and quality by reflecting signals towards their intended destination. Unmanned Aerial Vehicles (UAV) can also be used to create wireless communication networks in hard-to-reach areas, improving connectivity and coverage. Furthermore, AI-assisted wireless communication is another promising technique for smart cities. With the help of machine learning algorithms, wireless networks can be optimized for traffic management, security, and other critical parameters. By integrating these technologies, smart cities can create a robust wireless communication infrastructure that meets the demands of an increasingly connected and data-driven world.

- **Name, short bio and contact information** of the Special Sessions chairs:

**Prof. Dushantha Nalin Jayakody**

University of Lusofona, Portugal

Prof. Dush N. K. Jayakody is a Senior Member IEEE, Fellow, IET, and received the Ph. D. degree in Electronics and Communications Engineering, from the University College Dublin, Ireland in 2014. He received his MSc degree in Electronics and Communications Engineering from Eastern Mediterranean University, Turkey. He was ranked as the top 2% scientist in the world in 2021 and 2022 by the Stanford Elsevier list. In 2021, he received the Presidential Award for his outstanding research performance among many other awards and recognitions. Since 2022, he is a Professor at the Lusófona University, Portugal. He held visiting and/or sabbatical positions at the Center for Telecommunications Research, University of Sydney, Australia in 2015, and Texas A&M University in 2018, He was a visiting professor at the University of Jyväskylä, Finland both in 2019 and 2022 within the framework of the Academy of Finland. He also served as a visiting professor at the University of Juiz de Fora in Brazil in 2019. From 2019-2022, he has been a SPARC Professor at the Department of Electronics and Communication Engineering, National Institute of Tiruchirappalli, India, within the framework of the Ministry of Human Resources in India. From 2014 - 2016, he was a Postdoc Research

Fellow at University of Tartu, Estonia and University of Bergen, Norway. From 2016-2021, he was a Professor at the School of Computer Science & Robotics, National Research Tomsk Polytechnic University (TPU) Russia. From 2019-2022, he served as the Dean, School of Postgraduate Studies & Research at Sri Lanka Technological Campus, Sri Lanka. From 2021-2022, he was with the Department of Engineering & Computer Science/Autónoma TechLab, Universidade Autónoma de Lisboa, Portugal. He is supervising/supervised 15 PhD students and many master and undergraduate students and 5 Postdoc researchers. In his career, so far, he has attracted nearly 6M \$ research funding from many international grant agencies and has published nearly 200 international peer reviewed journal and conference papers and books. Prof. Jayakody has received the best paper award from the IEEE ICCMIT in 2017 and International Conference on Emerging Technologies of Information and Communications, March 2019 and IRC 2023. In July 2019, Prof. Jayakody received the **Education Leadership Award** from the World Academic Congress in 2019. In 2017 and 2018, he received the outstanding faculty award by National Research Tomsk Polytechnic University, Russia. He also received the Distinguished **Researcher in Wireless Communications** award in Chennai, India 2019. Prof. Jayakody received the Presidential Award for outstanding research performance in the year 2021. He also received “Best Publication Award” at the Sri Lanka Technological Campus, Sri Lanka in 2019 and 2020.

#### **Prof. Haris Pervaiz**

School of Computer Science and Electronic Engineering, University of Essex, UK

Haris Pervaiz received the M.Sc. degree in information security from the Royal Holloway University of London, Egham, U.K., in 2005, and the Ph.D. degree from the School of Computing and Communication, Lancaster University, Lancaster, U.K., in 2016. He was a Research Fellow with the 5G Innovation Centre, University of Surrey, Guildford, U.K., from 2017 to 2018, and an EPSRC Doctoral Prize Fellow with the School of Computing and Communication, Lancaster University, from 2016 to 2017, where he was working as a Lecturer with the InfoLab21. He is currently an Associate Professor at the University of Essex, UK. He has been actively involved in projects, such as CROWN, CogGREEN, TWEETHER, the Energy Proportional ENodeB for LTE-Advanced and Beyond and the DARE Project, and an ESPRC funded project. His current research interests include green heterogeneous wireless networks.

#### **Prof. Syed Ali Hassan**

Syed Ali Hassan (Senior Member, IEEE) received the B.E. degree in electrical engineering from the National University of Sciences and Technology (NUST), Islamabad, Pakistan, in 2004, the M.S. degree in electrical engineering from the University of Stuttgart, Germany, in 2007, the M.S. degree in mathematics from Georgia Tech, in 2011, and the Ph.D. degree in electrical engineering from the Georgia Institute of Technology, Atlanta, USA, in 2011., He was a Visiting Professor at Georgia Tech, in Fall 2017. He also held industry positions with Cisco Systems Inc., CA, USA, and with the Center for Advanced Research in Engineering, Islamabad. He is currently working as a Professor with the School of Electrical Engineering and Computer Science (SEECs), NUST. His research interests include signal processing for communications

with a focus on cooperative communications for wireless networks, stochastic modeling, estimation and detection theory, and smart grid communications.

**Dr. Rajkumar Samikkannu**

Sri Lanka Technological Campus, Sri Lanka

Samikkannu Rajkumar (Member, IEEE) received the B.E. degree in electronics and communication engineering from the Angala Amman College of Engineering and Technology, Tamil Nadu, India, in 2000, the M.E. degree in communication systems from the Thiagarajar College of Engineering, Tamil Nadu, in 2006, and the Ph.D. degree in wireless communication from Anna University, Chennai, India, in 2015. Currently, he is working as a Research Scientist with the Centre for Telecommunication Research, Sri Lanka Technological Campus, Padukka, Sri Lanka. He has published several refereed papers in various international journals and conferences. His current research interests include non-orthogonal multiple access technique, physical layer security, visible light communication, and soft information relay.