6G Knowledge Lab Opening and 36th Virtual GISFI Workshop

***VENUE**: CGC, AU, BIRK CENTER PARK 40, 7400, HERNING, DENMARK*
***DATE**: December 21-22, 2020*

The current pandemic COVID-19 situation has shown the importance of digital technologies to continue the successful operation of all spheres of life, educational, business and social. This gives also a special flare to the 6G system. It is envisioned that it will support further-enhanced to full-broadband (FeMBB) services to all types of end users and is envisioned as universal technology and infrastructure. The current trends of digitalization, and the user requirements for access and transmission of high-definition data while on the move, and for networking and intelligence in all spheres of life, demand 6G as the accelerator of transformation and innovation on a global scale and with deep penetration. Current application trends that can be observed are the emergence of services based on Augmented Reality (AR), Virtual Reality (VR), Mixed Reality (MR), wireless brain-computer interaction, smart city, tactile communications, and holographic communications. These developments challenge the current capabilities of the enabling wireless communication systems from various aspects, such as delay, rate, degree of intelligence, coverage, reliability, capacity and cannot be achieved by evolutionary research. Research will seek breakthroughs from the current network architecture and communication theory to provide novel concepts that can be key for the design of a radically new system such as 6G. At the same time, it is important to enable that such revolutionary technology developments stay 'green' and take into account major environmental concerns, such as the climate change, which can be achieved by novel, 'green' digitalized business models.

This workshop is held jointly with the CTIF Global Capsule (CGC-https://ctifglobalcapsule.org/), the Global ICT Standardisation Forum for India (GISFI-gisfi.org) and is technically sponsored by IEEE (ieee.org) and by Wireless World Research Forum (WWRF-wwrf.ch). The event will span over two days and feature invited talks by external and CGC experts on various research challenges related to 6G and enabling technologies.

Final Program

Monday, December 21st, 2020

09:00-10:00	***Session: 1 Opening***
	Welcome and Introduction*-Ramjee Prasad, CGC, BTECH, Aarhus University, Denmark*
	Opening Speech*- Anders Frederiksen, BTECH, Aarhus University, Denmark*
	Introduction to CGC*-Peter Lindgren, CGC, BTECH, Aarhus University, Denmark*
	Introduction to 6G Knowledge Lab*-Albena Mihovska, CGC, BTECH, Aarhus University, Denmark*
	Joint Collaboration Speech- *Ambassador of India to Denmark-Ajit Gupte*
	Joint Collaboration Speech- *Ambassador of Denmark to India-Freddy Svane*
10.00-10.15	***Coffee Break***
10:15-11:45	***Session 2: CGC***
	Session Chair: Peter Lindgren, *CGC, BTECH, Aarhus University, Denmark*
	Speakers:
	Per Valter*, **CGC, BTECH, Aarhus University, Denmark**, "The potential of green business models with future 6G network and artificial intelligence based cross organisational analytical transport management systems"*
	Vladimir Poulkov*, CGC, Technical University of Sofia, Bulgaria, "Enhancing Capacity and Research Excellence in Holographic Telepresence Systems as a Catalyst of Digitalization: The Project HOLOTWIN"*
	Octavian Fratu*, CGC, UPB, Romania, "Low Latency in Future Generations of Mobile and Wireless Communications"*
	Sanjay Kumar*, CGC, Birla Institute of Technology Mesra, India "NOMA for Next Generation Cellular Communication Systems"*
	Sandeep Inamdar, *CGC Vishwaniketan, India* ***"****CGC and expectations of south east Asian universities****"***
11.45-13:15	***Session 3: GISFI (Virtual)***
	Session Chair: Albena Mihovska*, CGC, BTECH, Aarhus University, Denmark*
	Speakers:
	Tilak R. Dua, *GISFI, India, "THz band for 6G unfolds opportunities and challenges"*
	Kiritkumar Lathia, *GISFI, Belgium,* ***"****The dawn of digital Age, Mental Resilience Management****"***
	T. Rama Rao*, SRM Institute of Science & Technology, Chennai, India "TeraHertz Wireless Communications"*
	Krishna Sirohi*, i2TB Research Foundation, India "Successful O-RAN is heading to create a democratised opportunity to developers of Small Telecom OEMs/Software Solution Companies "*
	Vandana Rohokale*, SIT, India, "Artificial Intelligence: The Heart of Modern Medicine and Healthcare Industry,"*

13:15-14:00	***Lunch Break***
14.00-15.30	***Session 4: Invited Talks 1 (Virtual)***
	***Session Chair**: **Bhawani S. Chowdhry**, MUET, Pakistan*
	Speakers:
	***Debu Nayak,** Huawei, India, "Artificial Intelligence the future of technology revolution will improve human mankind "*
	***Walter Weigel**, Huawei Technologies, Belgium, "A Vision about 6G – for the Aarhus University 6G Knowledge Lab Opening"*
	***Md. Farhad Hossain**, BUET, Bangladesh, "6G: Performance Enhancement from 5G and Enabling Technologies?"*
	***Muhammad Aamir**, SSUET, Pakistan, "Role of Universities in Implementing Green ICT for achieving Sustainable Development Goals (SDGs)"*
	***Bharat Gupta,** NIT Patna, Bihar, India, "3D Deployment in Wireless sensor network: A future perspective view "*

15:30-16:00	***Coffee Break***
16.30-17:00	***CGC 6G Knowledge Lab Opening*** ***Anders Frederiksen, Ramjee Prasad, Peter Lindgren***
17:00-19.00	***Session 5: Keynote Session 1 (Virtual)***
	***Session Chair: Ramjee Prasad,** CGC, Aarhus University, Denmark*
	Speakers
	***H. Vincent Poor**, Princeton University, USA, "Physical Layer Security: Security for 6G"*
	***Walter Konhäuser**, Oktett64 GmbH, Germany, "From 5G technology to 6G Green Deals"*
	***Sudhir Dixit**, Skydoot, Inc , USA "Omnipresent Knowledge Creating a New World Order: The Power of Internet, the Web and the Mobile!"*
	***Mahbubul Alam**, DIMAAG-AI, Inc. USA, "6G will Unlock the Power of "AI-for-Everything"*
	End of The First Day

Tuesday, December 22nd, 2020

09.00-10.30	***Session 6 : Keynote Session 2 (Virtual)***
	***Session Chair**: Pawan Garg, GISFI, India*
	Speakers:

	***Kwang Cheng Chen**, University of South Florida, USA, "Wireless Multi-Robot Systems in Smart Factories"*
	***Anand R. Prasad,** Wenovator, Japan, "Crystal Ball: What will be 6G? How about security?"*
	***Steve Kim,** Huawei, India, "Huawei Artificial intelligence collaboration helping technology ecosystem "*
10.30-10:45	***Coffee Break***
10:45-12:00	***Session 7 (a): GISFI (Virtual)***
	***Session Chair**: Kishore Kumar Thakur, IETE University Ranchi , India*
	***Aaloka Anant**, CGC and SAP Ireland, "Privacy preservation of data in a multi-party exchange"*
	***Sriganesh Rao**, Calligo Technologies, India "Data-driven Business Model Innovation for 6G"*
	***Satya N. Gupta**, BLUETOWN, India, "FRUGAL 5G – Bringing Broadband Faster to Rural Areas"*
	***Dnyaneshwar Mantri**, SIT, Lonavala, India "Ubiquitous Networks: A Future World of Things"*
	***Swati Prasad**, BIT Mesra, India "Role of Speaker Identification towards 6G"*
12:00-13:30	***Session 7 (b): GISFI ctd (Virtual)***
	***Session Chair:** Satya Prasad Majumder, Bangladesh University of Engineering and Technology, Bangladesh*
	Speakers:
	***Dinesh Chand Sharma**, Standards & Public Policy (SESEI), India, "Standards 5G building blocks, Emerging Technologies & ETSI long term strategy"*
	***Preetam Kumar**, IIT PATNA, India, "5G: Chalenges and Enabling Technologies "*
	***Knud Erik Skouby**, Aalborg University, Denmark, "Beyond 5G and Rural Communication"*
	***Punnarumol Temdee and Chayapol Kamyod**, Mae Fah Luang University, Thailand, "Smart Farming: Challenges and Applications for Young Smart Farmers in Thailand"*
	***Navin Kumar,** Amrita School of Engineering, India, "Aerial Infrastructure Sharing in 6G using LAP (Low Altitute Platform) "*

13:30-14:30	***Lunch Break***
14.30-16.00	***Session 8: Invited Talks 2 (Virtual)***
	***Session Chair: Henrik Knudsen,** CGC, BTECH, Aarhus University, Denmark*
	Speakers:
	***Ashok Chandra** and **Purnendu Tripathi**, GISFI, India, "Radio Frequency Spectrum for 5 G and Beyond Applications- ITU's Perspective"*
	***Vinod Kumar**, France, "5G to 6G Evolution and Revolution"*
	***Ashutosh Dutta**, Johns Hopkins University Applied Physics Laboratory , USA, "5G Security – Opportunities and Challenges*

	***Paulo Sergio Rufino Henrique**, Spideo, France, "6G Networks Infrastructure for Future Multimedia Communications"*
	***Didoe Prevedourou,** HAUNIV, Greece, Smart Interactive Living Environment for the Elderly*
16:00-16:30	***Coffee Break***
16:30-18:00	***Session 8: Invited Talks 3 (Virtual)***
	***Session Chair: Chandrika Prasad,** PCNS, Rail Metro, India*
	Speakers:
	***Kapal Dev**, Trinity College Dublin, Ireland, "Reinventing the Future: A Perspective from 6G Applications"*
	***Seshadri Mohan,** University of Arkansas at Little Rock, USA , "The Evolution of Connected Vehicles: The Role of Emerging Standards, 5G and Beyond, and AI/Machine Learning"*
	***fred harris**, UCSD, USA, "Polyphase Channelizer Separates and Demodulates Multiple FM Channel Bands"*
	***Neeli R. Prasad**, SmartAvatar, The Netherlands, "6G: The Age of The Empathetic Intelligence"*
	***Purnima Lala**, IILM, India "Aerial Radio Architecture, a future roadmap"*
18:00	***End of Second Day and Workshop***