

46th Wireless World Research Forum

1st-3rd December 2021

Paris, France

Wednesday 1st December 2021

08:30 – 09:00	Registration
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09:00 – 09:50	Plenary Session 1 – Opening of WWRF 46	
	Chaired by Prof. Merouane Debbah	
09:00 – 09:10	Opening Speech	Prof. Merouane Debbah, Chief Researcher at the Technology Innovation Institute (Abu Dhabi, UAE)
09:10 – 09:20	Welcoming Speech	Dr Nigel Jefferies, Chairman, WWRF
09:20 – 09:50	Opening Keynote	Eric Hardouin, Head of Orange Connectivity Research

09:50 – 10:10	Coffee
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10:10 – 12:10	Plenary Session 2 – Connected Intelligence	
	Auditorium – chaired by Prof. Merouane Debbah	
10:10 – 10:40	Edge Intelligence over Wireless: Present and Future	Prof. Mehdi Bennis, Oulu University (Virtual)
10:40 – 11:10	Recent Progress in End-to-End Learning for the Physical Layer	Dr Jakob Hoydis, NVIDIA (Virtual)
11:10 – 11:40	Communication between intelligent machines: spaces of semantic information	Prof. Jean-Claude Belfiore, Huawei
11:40 – 12:10	From Conventional to Semantic Communications based on Deep Learning	Prof. Geoffrey Ye Li, Imperial College London (Virtual)

12:10 – 13:10	Lunch
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WWRF General Assembly (members only)	
13:10 – 14:10	Auditorium – chaired by Nigel Jefferies (WWRF)

14:10 – 16:40	Plenary Session 3 – 6G Programmes	
	Auditorium – chaired by Hendrik Berndt, Vice Chair EMEA WWRF	
14:10 – 14:40	The European path towards Beyond 5G and 6G	Bernard Barani, EU Commission (Virtual)
14:40 – 15:10	The Learning and Inference for 6G Wireless	Dr Tong Wen, CTO, Huawei Wireless (Virtual)
15:10 – 15:40	Hexa-X – the European 6G flagship project	Dr Mikko A. Uusitalo, Head of Research Department Wireless Advanced Technologies at Nokia Bell Labs Finland, Lead of Hexa-X (Virtual)
15:40 – 16:10	NGMN's road towards 6G	Feifei Lou, NGMN Alliance (Virtual)
16:10 – 16:40	6G roadmap and preparations in Korea toward extended space	Prof. LEE, HyeonWoo, DanKook Univ. Vice Chair, 5G Forum Executive Committee

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16:40 – 17:00

Coffee

17:00 – 18:30		WORKING GROUP SESSIONS		
		CV WG Session 1	WG C: New Directions in Communication Architectures and Technologies	
		CV WG Session 1 Chaired by Seshadri Mohan, Chair WG CV Session 1 Amphitheatre	Chaired by Dr. Sudhir Dixit, Vice Chair, Americas and Chair of WWRF Working Group 6G Conseil Room	
17:00 – 17:25	Ranu Tyagi, Sachin Sharma (Virtual) Seshadri Mohan	Green 6G Network for IoE applications in Industry 5.0 enabled Future Connected Vehicles: An Innovative AI Approach	Satya N. Gupta (Virtual)	PM-WANI: A Disaggregated Wi-Fi Roaming Architecture to Connect the Unconnected
17:25 – 17:50	Paweł Sroka & Adrian Kliks (Virtual)	Vehicular Dynamic Spectrum Access supported by Intelligence at the Network Edge	Elhoucine Bergou	IoT Device Selection for Federated Learning
17:50 – 18:15	Sayon Karmakar, Sagar Thesia, Seshadri Mohan (Virtual)	Thermal and Power Optimisation Challenges of Computing Systems for Connected and Autonomous Vehicles Environment	Małgorzata Wasilewska, Poznań University of Technology	Joint fading effects identification and spectrum occupancy prediction employing deep learning in 5G
18:15 – 18:30	Seshadri Mohan	VIP CV White Paper 2: AI/ML-Enabled Connected Vehicles		

Thursday 2nd December 2021

08:30 – 09:00

Registration

09:00 – 10:30

Plenary Session 4 - Cybersecurity

Auditorium – chaired by Nigel Jefferies (WWRF)

09:00 – 09:30

Towards Context Aware 6G Security: New Opportunities and Challenges for Securing the Radio Access

Prof. Ersi Chorti, École Nationale Supérieure de l'Électronique et de ses Applications (ENSEA)

09:30 – 10:00

How will our cryptographic toolkit and cyber security solutions be impacted by Machine Learning?

Najwa Aaraj, Chief Researcher at the Cryptography Research Centre at the Technology Innovation Institute (TII), UAE
(Virtual)

10:00 – 10:30

On Unpadded NTRU Quantum (In)Security

Prof. David Naccache, École Normale Supérieure

10:30 – 11:00

Coffee

11:00 – 13:00

Plenary Session 5 - Non Terrestrial Network

Auditorium – Chaired by Enrico Natalizio, Senior Director with the Technology Innovation Institute (UAE)

11:00 – 11:30

Robot-augmented data harvesting, mapping, and localization for 6G networks

Prof. David Gesbert, Professor and Head of the Communication Systems Department, EURECOM. **(Virtual)**

11:30 – 12:00

Towards 3D Wireless Networks

Walid Saad, Virginia Tech

12:00 – 12:30

Satellites Role in the Digital Transformation Era

Dr. Nader Alagha, European Space Agency
(Virtual)

12:30 – 13:00

Satellite communications: towards 3-Dimensional communications

Ana Isabel Pérez-Neira, Professor Universitat Politècnica de Catalunya

13:00 – 14:00

Lunch

14:00 – 16:00

Plenary Session 6 - Next Generation Radio Technologies

Auditorium – chaired by Prof. Merouane Debbah

14:00 – 14:30

Prof. Tom Marzetta, Distinguished Industry Professor at NYU Tandon School of Engineering's Electrical and Computer Engineering Department and Director of NYU WIRELESS **(Virtual)**

14:30 – 15:00

Wave Control for Wireless Communications: From Time-Reversal Mirrors to Reconfigurable Intelligent Meta-surfaces

Prof. Mathias Fink, ESPCI Paris, PSL University

15:00 – 15:30

Electromagnetic Interference in RIS-Aided Communications

Prof. Luca Sanguinetti, University of Pisa, Italy
(Virtual)

15:30 – 16:00

Basic considerations on Terahertz communication systems

Dr. Werner Mohr, WWRF Fellow **(Virtual)**

16:00 – 16:30

Coffee

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16:30 – 18:00				
		WG D	WG 6G Vision & Technologies	
		Chaired by Angeliki Alexiou (Virtual) Chair WG D Amphitheatre	Chaired by Dr. Sudhir Dixit, Vice Chair, Americas and Chair of WWRF Working Group 6G Conseil Room	
16:30 – 17:00	Prof Tian Hong LOH (Virtual)	Measurement Challenges for 5G and Emerging Wireless Technologies	Dr. Sudhir Dixit Vimal Bhatia (Invited Speaker) (Virtual)	WG overview and opening statements Visible Light Communications (VLC)
17:00 – 17:30	Hussein Al-Hamdani, (Virtual) Dr. Seshadri Mohan	Ramanujan Graphs for Low-Density Signature CDMA Non-Orthogonal Multiple Access Scheme	Patrik Rugeland, Ericsson Research, Stockholm, Sweden (Virtual)	Hexa-X – 6G use cases, gap analysis and technological enablers
17:30 – 18:00	Dr Konstantinos Dovelos, Queen's Centre for Wireless Innovation, Queen's University Belfast, UK (Virtual)	Electromagnetic Modeling of Intelligent Reflecting Surfaces in the THz Band	Paulo Sergio Rufino Henrique, CGC-Aarhus University, Spideo Prof.Ramjee Prasad, CGC-Aarhus University	Quantum Mechanics for the future 6G Cognitive Cloud O-RAN
18.00 – 22.00	Dinner			

Friday 3rd December 2021

09:00 – 10:00		Plenary Session 7 – Evaluation IMT-2020 Technologies	
		Auditorium – chaired by Prof Angeliki Alexiou, University of Piræus (Virtual)	
09:00 – 09:30	Evaluation results of the ETSI (TC DECT) AND DECT FORUM proposal as an IMT-2020 Candidate Technology	Antonis Gotsis (University of Piraeus and Feron Technologies) (Virtual)	
09:30 – 10:00	Modelling EUHT as a candidate technology for IMT-2020	Dr Arslan Usman, Kingston University	

10:00 – 10:30	Coffee
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10:30 – 12:00		Plenary Session 8 – The role of Li-Fi in 6G (Panel Session) (Virtual)	
		Panel organizers: Dominic O’Brien (University of Oxford) and Marcos Katz (University of Oulu)	
10:30 – 12:00	Volker Jungnickel Fraunhofer, Heinrich Hertz Institute Jean-Paul Linnartz, Eindhoven University of Technology Harald Haas, University of Strathclyde Steve Hranilovic, MacMaster University Takaya Yamazato, Nagoya University Marcos Martinez, MaxLinear Thomas Little, Boston University Anne Julien-Vergonjanne, University of Limoges Maité Brandt-Pearce, University of Virginia		

12:00 – 13:30	Lunch
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13:00 – 14:30		WORKING GROUP SESSIONS			
		WG Workshop EMW		Working Group Session WG : A/B	
		Chaired by Dr Arslan Usman (Kingston University) Amphitheatre		Chaired by Knud Erik Skouby Chair WWRF A/B & BM Conseil Room	
13:00 – 13:30	Nada Philip, Costas Danas and Dr Arslan Usman	Intro, welcome and agenda	Samant Khajuria, Terma; Knud Erik Skouby, AAU; Lene Sørensen, AAU Knud Erik Skouby	Cookies – a discussion of technical, security & economic aspects 5G & security in Baltic SMEs; cases from the an Interreg project, DINNOCAP	
13:30 – 14:00	Prof Nikolaos Grigoriadis	Connecting Multiple Sclerosis: Network technologies toward precision medicine	Muhammad Waleed	AI Acceleration at the Edge: A Systematic Analysis of CUDA Functions for GPU Remoting Services	
14:00 – 14:30	Dr. Maradona C. Gatara, Ph.D. (Information Systems) Wits Business	From QoS to QoE plus QoT in	Prof Peter Lindgren, Emma Ek, Rita Adomaityte CTIF	Green Business Model Innovation in Symbiosis Business	

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	School (WBS) Postdoctoral Research Fellow Technology and Operations Management (Virtual)	Beyond 5G Networks	Global Capsule, Aarhus University	Value Networks - Bridging Green Business Model Innovation in value networks to Future Wireless Technologies
14:30 – 15:00			Per Valter, Østfold University College (Virtual)	From Connecting Things to Connected Intelligence in the Transportation Sector: A Green Business Model Ecosystem approach

1500 – 15:30	Coffee
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15:30– 16:00	WORKING GROUP SESSIONS
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	WG EMW Session 2	CV WG Session 2	
	Chaired by Christos Politis Acting Chair WG EMW Amphitheatre	Chaired by Seshadri Mohan Chair WG CV Conseil Room	
15:30 – 16:00	Dr Giorgio Quer, Director of Artificial Intelligence at the Scripps Research Translational Institute	Wearable Sensors and AI to enable Digital Medicine	Vishnu Ram OV, TDSI
16:00 – 16:30	White Paper Discussion		Devika Ambekar (Virtual) , Seshadri Mohan
16:30 – 17:00		Close of Meeting, remarks	Manoj Mittal
17:00-17:30			François Henri Pidault (WG Rail)
17:30 – 18:30			

17:30 - 18:30	Close of the meeting
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