Second Towards TeraHertz Communications Workshop

An ICT Beyond 5G Cluster Workshop

Thursday 7 March 2019 8.30 am
Albert Borschette Congress Centre (CCAB)
Rue Froissart 36, 1040 Brussels, Belgium

The ICT Beyond 5G Cluster will host the
2nd Towards THz Communications Workshop with the support of the European Commission.

Future mobile networks and connectivity systems will require ultra-high speed and seamless performance for a huge number of connected devices and applications. Higher frequencies, and more specifically the TeraHertz range (0.1 THz – 10 THz) is seen as one of the promising way to address these requirements. But today, many fundamental scientific and technological challenges are still to be explored and overcome.
At the same time, allocation of the bands for THz communication is not yet done. It is thus also important to start, as early as possible, the identification of candidate bands which will be optimal from a technological point of view, while at the same time answering to the needs in the most promising and highly desirable verticals applications and use cases.

Scope
This 2nd workshop aims at bringing together key actors currently working on, or having interest, in THz communications in order to explore future R&I plans for the period beyond 2020. The main goal of the workshop will be to have an overview of the current state of the art of the research in this area, to discuss the main challenges still to be explored, to highlight key research directions for future R&I actions and to share opinions on the foreseen frequency bands which could be good candidate to be supported by the EU in the global allocation exercise.

The workshop will be concluded by a panel session with the plenary speakers to summarise ideas and provide an input to EC for future calls.

Registration free of charge at
https://www.eventbrite.ie/e/2nd-towards-terahertz-communication-workshop-tickets-51878969394

dream
EPIC
terapod
TERRANOVA
THOR
ULTRAWAVE
WORTECS
IEEE Future NETWORKS Enabling 5G and Beyond

Second Towards TeraHertz Communications Workshop

An ICT-09-2017 Cluster Workshop

Programme

Plenary Session: Toward THz Communications

Plenary Chair Claudio Paoloni, Lancaster University, UK

Introduction to the ICT-09-2017 Cluster
Dr. Alan Davy; Waterford Institute of Technology, Ireland

EC perspective on the challenges of THz communications
European Commission

European flagship on THz science and technology-TERAFLAG
Dr.-Ing Yaning Zou; TU Dresden, Germany

Recent Japanese developments on THz communications
Prof. Tadao Nagatsuma; Osaka University, Japan

Terahertz wireless communications: a photonics perspective
Prof. Daniel Mittleman; Brown University, USA

Session 1: THz Communication Electronic and Photonic Components and Systems

Session Chair Angeliki Alexiou, University of Piraeus, Greece

Photonic approaches to THz communications
Prof. Guillaume Ducournau; University of Lille, France

ULTRAWAVE – Technology for D-band Point to multipoint distribution
Prof. Claudio Paoloni; University of Lancaster, UK

DREAM – D-band Radio solution Enabling up to 100 Gbps reconfigurable Approach for Meshed beyond 5G networks
Dr. Vladimir Ermolov; VTT, Finland

TERAPOD – Terahertz-based ultra-high bandwidth wireless access networks
Prof. Cyril Renaud; University College London, UK

THz micromachining – enabling the large-scale exploitation of the THz frequency spectrum?
Prof. Joachim Oberhammer; KTH Royal Institute of Technology, Sweden

Session 2: THz Communication Networks, Protocols and Architectures and User Cases

Session Chair Thomas Kürner, TU Braunschweig, Germany

Opening the THz-spectrum for communication for 5G and beyond
Dr. Wolfgang Templ; Nokia Bell Labs, Germany

EPIC – Enabling Practical Wireless Tb/s Communications with Next Generation Channel Coding
Dr. Onur Sahin; InterDigital, UK

TERRANOVA – Terabit/s Wireless Connectivity by TeraHertz innovative technologies to deliver Optical Network Quality of Experience in Systems beyond 5G
Prof. Angeliki Alexiou; University of Piraeus, Greece

THz Communication Networks, Protocols and Architectures and User Cases
Dr. Yinggang Li; Ericsson, Sweden

Session 3: THz Communication Spectrum and Physical Layer

Session Chair Onur Sahin, InterDigital, UK

Standards aspects of THz communications
Prof. Dr.-Ing. Thomas Kürner; TU Braunschweig, Germany

WORTECS – Wireless Optical/Radio TErabit CommunicationS
Mr. Olivier Bouchet; Orange, France

End user perspective on THz communication spectrum and physical layer
Dr. Petr Jurčík; Deutsche Telekom, Czech Republic

Organising Committee

General Chairs	Claudio Paoloni, Lancaster University, UK Alan Davy, Waterford Institute of Technology, Ireland
Rapporteur	Bruce Napier, Vivid

ICT Beyond 5G Cluster Steering Committee

Alan Davy	Waterford Institute of Technology, Ireland
Angeliki Alexiou	University of Piraeus, Greece
Bruce Napier	Vivid Components Ltd., Germany
Onur Sahin	InterDigital, UK
Mir Ghoraishi	pureLiFi, UK
Vladimir Ermolov	VTT Technical Research Centre, Finland
Claudio Paoloni	Lancaster University, UK
Thomas Kürner	TU Braunschweig, Germany

ICT Beyond 5G Cluster

Six projects from the H2020 call ICT-09-2017 and one project from the call EU-Japan have been funded:

DREAM	www.h2020-dream.eu
EPIC	epic-h2020.eu
TERAPOD	terapod-project.eu
TERRANOVA	ict-terranova.eu
ULTRAWAVE	ultrawave2020.eu
WORTECS	wortecs.eurestools.eu
THOR	thorproject.eu

These seven projects have agreed to form an unofficial cluster in order to try to coordinate some dissemination activities to maximise the impact of the projects.

Acknowledgement

The ICT Beyond 5G Cluster is grateful to the European Commission for the great support of the workshop.