

2. URSI Austria Commission Meeting – Graz

Beiträge der TU Graz in den COST Actions
IC0802 und IC1101

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COST Actions IC0802 und IC1101
Focus on Optical Wireless, Free Space
Optics (FSO), Lichtfunk

IC0802 (beendet 12/2012)

IC1101 (gestartet 11/2011)

WG1: Channel modelling for mobile Satcom and Satnav systems

Chair: Uwe-Carsten Fiebig, DLR, Germany

Mobile satellite communication and satellite navigation systems at L-, S-, and C-band (extends towards Ku and Ka band). The activities are focused on local environment modeling, including urban and suburban, vegetation effects and satellite-to-indoor.

WG2: Channel modelling for radio systems from C to W band

Chair: Laurent Castanet, ONERA, France

Influence of propagation on multimedia radio systems at high frequencies for fixed or mobile terminals and on Earth Observation systems (mainly atmospheric). Main focus is on C and Ku band for high-availability systems, Ka-band for access systems, Q/V band for backbone systems and Ka and W-band for space exploration. Tropospheric propagation models.

WG3: Channel modeling for terrestrial free-space optical systems and Airborne Terminals

Chair: Erich Leitgeb, TU Graz, Austria

Free Space Optical links provide "last mile" solutions for access networks and are emerging also for inter-platform links, (e.g. High Altitude Platforms (HAP) or Unmanned Aerial Vehicle (UAV)). Systems are severely affected by atmospheric effects (gases, fog, aerosols turbulence); mitigation techniques (adaptive optics, spatial/wavelength diversity, adaptive coding) necessary.

SGMP: Specific Group on Measurements and Products

Chairs: Carlo Riva, POLIMI, Italy, Mike Willis, RAL-STFC, United Kingdom

This WG is "transversal" to the others, in order to perform interdisciplinary development and coordination on data and measurements, including the planning and the execution of collaborative new campaigns.



Final Report WG3

- Work mainly concentrated on Outdoor FSO (diff. to IC1101) and mainly on fog evaluation and measurements
- Co-operations
- Compared to RF experimental sites (50 years delay)
- Not a finished new model, we started with updating and verifying
- Future activity in IC1101 and new projects
- Complexity of the work of WG3, theory available, measurements done on different sites (different climates and set-ups and monitoring, data collecting), data analysis and verification; Special value of each experiment and topic and focus

WG3: Final work

- To complete the Final Report; well shaped version until November 2012 (DLR-Meeting), finished January 2013
- Final Report: final version delivered in May 2013
- Further joint publications (visible in the Annual Report: Joint publications 7/2011 – 6/2012: ~10 OWC at CSNDSP 2012, ~8 at EuCAP 2012, ~5 at NOC 2012, ~5 Journal publications, further joint work and publications
- Further Inputs to ITU-R; IC1101 etc.



COST IC1101: Optical Wireless Communications - An Emerging Technology

WG1 (Propagation Modeling and Channel Characterization) will develop, evaluate and validate statistical and empirical channel models for OWC applications and optical bands

WG2 (Physical Layer Algorithm Design and Verification) will provide an information-theoretic framework for OWC and investigate practical algorithms and techniques to approach performance boundaries

WG3 (Networking Protocols) will deal with upper layer protocol stacks and investigate co-existence and interoperability of OWC with other communication networks

WG4 (Advanced Photonic Components) will work on the efficient design, characterization, fabrication and test of state-of-the-art optoelectronic / photonic components and sub-systems for OWC

Discussing the WG3 Results

It addresses:

- Scientific activities
(meetings, STSMs, Workshops, Conferences, Tr. Schools)
- Final Report

1) RESULTS VS OBJECTIVES

2) MAIN RESULTS FROM THE ACTION

Innovative knowledge

Scientific results

Socio-economic impact (e.g. radio regulations ITU)

Spin-off of new National, EU and other International activities

3) INTERDISCIPLINARITY

4) NEW COST NETWORKING

New members joining the WG

Total number of participants involved in the action

Key Early Stage Researchers and Junior Engineers

Researchers from non-COST countries

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- Danke für die Aufmerksamkeit !