

Action IC0802

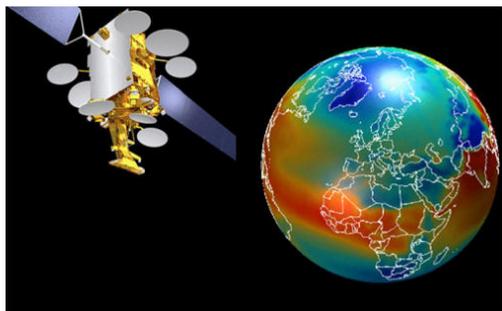
Propagation Tools and Data for integrated Telecom, Navigation and Earth Observation Systems

Participating countries: AT, BE, BG, BR, CA, CS, CZ, DE, DK, ES, FI, FR, GB, GR, HU, IL, IN, IT, LU, NO, PK, PL, PT, SE, SK, SL, US

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<http://www.tesa.prd.fr/cost/>



Objectives:

- Provide comprehensive knowledge of the propagation media for the design of global interconnected systems, Global Integrated Networks.
- Develop and recommend a coordinated set of channel models, channel assessment techniques and experimental data for the design and operations of radio systems.
- Architectures include: Mobile SatCom and SatNav systems, Radio systems operating from C to W band, Free Space Optical Systems and airborne terminals.
- Interdisciplinary coordination for propagation modeling, measurements and data (propagation campaigns, meteorological data, ground and spaceborne remote sensing techniques, Numerical Weather Forecast Data)
- Target R&D and Academic Organizations, National and International Agencies, Industry and Telecom Operators, Standardization Bodies

WG 1: Channel modelling for mobile Satcom and Satnav systems

Uwe-Carsten Fiebig, DLR, Germany

It deals with mobile satellite communication and satellite navigation systems at L-, S-, and C-band but it extends also towards Ku and Ka band. It is also directed towards mobile terrestrial applications especially for the purpose of navigation and terrestrial gap fillers. The activities are focused on local environment modeling, including urban and suburban, vegetation effects and satellite-to-indoor

The modeling is complemented by SW development, analysis of mobile campaigns and the exploitation of MIMO technology

WG 2: Channel modelling for radio systems from C to W band

Laurent Castanet, ONERA, France

To study the influence of propagation on multimedia radio systems at high frequencies for fixed or mobile terminals and on Earth Observation systems (mainly atmospheric).

The 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. Ku and Ka bands are also of interest for future satellite to mobile services.

It addresses tropospheric propagation models, Fade Mitigation/Channel Assessment techniques.

WG 3: Channel modeling for terrestrial free-space optical systems and Airborne Terminals

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)). All these systems are severely affected by atmospheric effects and they have to resort to mitigation techniques (adaptive optics, spatial/wavelength diversity, adaptive coding)

Channel modeling for Airborne SatCom (including Air Traffic Management systems and Multimedia systems for airborne terminals) deals with specific platform and mission issues (dimensions/mass limitations, Interference/regulatory/Safety, Doppler, etc.)

SGMP: Specific Group on Measurements and Products

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. It addresses: Propagation campaigns, Atmospheric Remote sensing techniques, Earth Observation products and Numerical Weather Prediction data.

Main Achievements:

- 50 Organizations from COST and 6 from non-COST (all over the world). A balanced distribution between R&D, Space Agencies, Industry and Operators.
- Action scientific production and activities provide a complete view of state-of-the-art on all the key arguments.
- Interaction other EU and COST Actions (COST 2100, ES0702, BONE) and industry (both EU and non-EU.)
- Coordinated Action output submitted for standardization, to UN/ITU-R in response to WRC 11 Agenda.
- Setup of Group of experimenters for Alphasat TDP5 Ka/Q/V band experiment