VDE ITG Expert Committee HF 2 »Radio Systems«

Invitation to a scientific conference on

Mobile Communications Go Space - Opportunities for NTN in 6G

12th September 2024
University of the Bundeswehr Munich
Werner-Heisenberg-Weg 39, 85579 Neubiberg, Germany

Topic

The sixth generation of mobile communications (6G) is expected in 2030. Global network coverage will play an even more important role in 6G. Constellations of small satellites in low earth orbit (LEO) will, therefore, be a pillar of 6G, enabling communication even when terrestrial networks (TNs) are not available. So-called non-terrestrial networks (NTNs), such as satellite constellations, have been part of the 5G specifications since 3GPP Release 17, which will be further optimized until the introduction of 6G. The 6G standard will, therefore, consider the integration of NTNs into the 6G system from the outset, enabling the optimization of possible services using both TNs and NTNs right from the start.

In this framework, the event will promote scientific exchange and discussions on the following topics:

- Use cases enabled by NTN in 6G
- The role of multi-orbit connectivity and 3D networks
- 6G proof of concepts through in-orbit demonstrations
- Possible 6G architecture concepts that enable the native integration of satellite
- Integration of satellite systems
- Suitable technologies/functions for NTN in 6G
- Standardization approach for NTN in 6G (what, where, when)

General Chairs

Prof. Dr.-Ing. Andreas Knopp, Chair and Professor, Research Center SPACE, University of the Bundeswehr Munich

Dr.-Ing. Michael Walter, DLR Institute of Communications and Navigation, Oberpfaffenhofen

Registration

To participate, please register with your name, organization, address and e-mail via this link or QR-code:
https://events.unibw.de/satcom/itg20240912
Registration fee: 100 € (inclusive of consumption tax).

Registration deadline: 31. August 2024

Your way to us

From/via Munich Central Station
From »Hauptbahnhof« take the subway U5 in the direction of »Neuperlach-Süd« to the terminus »Neuperlach-Süd«. Regional bus 199 direction »Neubiberg, Campeon-West« OR regional bus 217 direction »Unterhaching, Goerdelerstraße«, in each case to the stop »Neubiberg, Universitätsstraße«.

From Munich Airport (MUC)
From Munich Airport, take the S8 in the direction of »Herrsching« to »Ostbahnhof« (journey time 31 minutes). From »Ostbahnhof« take the subway U5 direction »Neuperlach-Süd« to station »Neuperlach-Süd". Regional bus 199 in the direction of »Neubiberg, Campeon-West« OR regional bus 217 in the direction of »Unterhaching, Goerdelerstraße«, in each case to the stop »Neubiberg, Universitätsstraße«.

The Expert Committee HF 2 »Radio Systems« of the VDE ITG

The ITG's specialist areas are divided into specialist committees, which hold public discussion meetings. The specialist committee HF 2 "Radio Systems" is active in the following subject areas:

- Information technology equipment, installations, systems and networks for radio relay, satellite radio, mobile radio, broadcasting and sensor technology
- Signal processing methods and principles in radio systems
- Planning, allocation and regulation of frequency bands and services
- Discussion of the technical realization and market acceptance of new radio services
- Contributions to the recruitment of young computer engineers

https://www.vde.com/de/itg/arbeitsgebiete/fb7-hochfrequenztechnik

The Organizers

Founded in 1973, the University of the Bundeswehr Munich primarily serves the scientific training of officers and officer candidates as well as civilian employees in the area of responsibility of the Federal Ministry of Defense.

The Research Center SPACE at the University of the Bundeswehr Munich covers core areas of space travel such as satellite and rocket technology or the exploration of the solar system and outer space, but its competencies also include applications on earth such as communication, navigation and earth observation.

The DLR Institute of Communications and Navigation is dedicated to mission-oriented research in selected areas of communications and navigation. Its work ranges from the theoretical foundations to the demonstration of new procedures and systems in the real environment and is embedded in DLR's Space, Aeronautics, Transport, Security and Digitalization programs.

VDE ITG

Program (Subject to change)

09:00	Registration
09:30	Welcome Note by the Chairwoman of the Technical Committee *Prof. Dr.-Ing. María Dolores Pérez Guirao, Ostfalia University of Applied Sciences*
09:35	Welcome Note by the Organizers *Prof. Dr.-Ing. Andreas Knopp, University of the Bundeswehr Munich* *Dr.-Ing. Michael Walter, DLR Institute of Communications and Navigation*
09:45	Current Status of NTN Standardization in 3GPP *Dipl.-Ing. Rainer Wansch, Fraunhofer Institute for Integrated Circuits*
10:10	SeRANIS – The 6G Innovation Hub in SPACE *Prof. Dr.-Ing. Andreas Knopp, University of the Bundeswehr Munich*
10:35	Radio Technologies for Broadband Satellite Services *Prof. Dr.-Ing. George Goussetis, Heriot-Watt University*
11:00	Coffee break
11:30	From 5G to 6G - Will Everything That Happens in LEO Stay in LEO? *Dr. rer. nat. Thomas Laurent, Rivada Space Networks GmbH*
11:55	6G for Connected Sky *Dr.-Ing. Dominic Schupke, Airbus Group*
12:20	NTN from the Perspective of a Mobile Network Operator *Dipl.-Ing. Tilo Heckmann, Telefónica Germany*
12:45	Lunch break
14:00	IRIS² - Opportunities for Germany – an update *Dr.-Ing. Björn Gütlich, German Space Agency at DLR*
14:20	Satellite Communication and Computing Services for Railway Use Cases *Dr.-Ing. Carlos Guimaraes, Siemens AG*
14:40	Routing in Satellite Constellation Networks – Rule-based vs. Machine Learning Approaches *M.Sc. Manuel Roth, DLR Institute of Communications and Navigation*
15:00	Space-enbled Connectivity and Situational Awareness Solutions for the Future of Mobility *M.Sc. Gianaldo Mantovani, OHB SE*
15:20	Coffee break
15:40	6G Laboratory in Orbit - Challenges on Bringing 6G-Technology into Space *Dr.-Ing. Jens Haala, Tesat-Spacecom GmbH & Co. KG*
16:00	From Integrated to Unified and Resilient 3D Networks *Dr.-Ing. Sandro Scalise, DLR Institute of Communications and Navigation*
16:20	T&M Tackling the Challenges of NTN Evolving on the Path to 6G *Dipl.-Ing. Rainer Stuhlfauth, Rohde & Schwarz GmbH & Co. KG*
16:40	Final discussion and outlook
17:00	End of the event

der Bundeswehr Universität München

Chair of Signal Processing

Munich Center for Space Communications

RIVADA SPACE NETWORKS

OHB

ROHDE&SCHWARZ

1954 – 2024 70 YEARS VDE ITG