

## SATELLITE INDUSTRY DAY 2022 – CONFERENCE AGENDA

### TAKING NEXT STEPS ON NON-TERRESTRIAL NETWORKS AND SATELLITE 5G / IOT

CEST/ AFTERNOON	TUESDAY, MAY 24 – PRESENTATIONS & PANEL DISCUSSION
15:00–15:10	<p><b>Welcome and introduction</b>  <b>Doris Nejedly, Marketing Manager, Rohde &amp; Schwarz</b></p>
15:10–15:30	<p><b>5G learning to fly? Non-terrestrial networks</b>  From the beginning of 3GPP, the vision of ubiquitous communications included the usage of satellite or airborne based network components. In the short history we saw a tremendous development in the satellite and aerospace community as well as in worldwide wireless communication requirements. With 3GPP Release 17, the vision of ubiquitous communication networks including satellite and airborne can become a reality. The global radio access technology 5G New Radio enables non-terrestrial network connectivity.</p> <p>This session delves into some technical challenges of NTN, how the spectrum allocation looks like, and how to leverage the deployment of NTN capable devices and networks.</p> <p><b>Reiner Stuhlfauth, Technology Manager Wireless, Rohde &amp; Schwarz</b></p> <p>Reiner Stuhlfauth is a Technology Manager for wireless communications at Rohde &amp; Schwarz headquarters in Munich, Germany. He focuses on wireless communications technology and T&amp;M aspects in cellular and non-cellular radio technologies. In this role, he promotes test and measurement solutions for e.g. LTE, 5G and WLAN. Reiner is one of a group of authors at Rohde &amp; Schwarz who have published a technology book on 5G NR: "5G New Radio – Fundamentals, procedures, testing aspects".</p>
15:30–15:50	<p><b>5G NTN NB IoT- The merge of TN and NTN, -standarisation and impact on the satellite systems</b>  Historically satellite systems have been proprietary system and for the few. In the future, satellite systems will be made broadly available to the regular end-user, and this is made possible through standardization as the terrestrial networks will merge with space. This presentation will discuss how this will affect NB-IoT and how it will be implemented.</p> <p><b>Thomas Scott Jensen, CEO, GateHouse Satcom A/S</b></p> <p>Thomas Scott Jensen, CEO at GateHouse Satcom. Thomas has worked more than 15 years at the GateHouse and has a deep knowledge of Satellite Communications, particularly satellite waveforms and test tools. Thomas holds a M.Sc.E.E. from Aalborg University. GateHouse SatCom has a long history with different satellite systems and the latest edition to this portfolio is 5G NTN Narrow-Band IoT.</p>
15:50–16:10	<p><b>Designing for Satellite Internet of Things- ICARUS animal tracking</b>  The ICARUS system was developed to study animal mitigation behavior. It enables extremely light, low-cost tracking devices which are attached to the animals to communicate with a space-borne transceiver. The ICARUS system is now delivering data on fine-scale animal movement at near-global scale. This offers a completely new look into animal mitigation to scientists all over the world.</p> <p>This webinar looks at the design and the development of the ICARUS system, which was mainly done at the Rohde &amp; Schwarz INRADIOS GmbH. We will discuss the challenges the project faced and how they were solved.</p> <p><b>Dr. Mario Beck, Team Leader Space applications, Rohde &amp; Schwarz INRADIOS GmbH</b></p> <p>Mario is a team leader at the Rohde &amp; Schwarz INRADIOS GmbH based in Dresden, Germany. Together with his team he is responsible for satellite applications at INRADIOS. This includes the project lead of the ICARUS project at Rohde &amp; Schwarz.</p> <p>Mario Beck studied Electrical Engineering and Information Technology at the Karlsruhe Institute for Technology (KIT) in Karlsruhe, Germany. During his studies he focused on communications and high frequency technology. After an excursion to the world of accelerators at CERN in Geneva, Switzerland to obtain his PHD, he joined the Rohde &amp; Schwarz company to focus on the satellite industry.</p>
16:10–16:30	<b>Break</b>

	<b>Open Source Software: A key enabler for non-terrestrial innovation?</b>
16:30 -16:50	<p>The first New Radio (NR) specification for 5G was published in 2018. Since then, several Open Source Software (OSS) projects have been implemented a 3GPP Release 15 compliant protocol stack. Until the 3GPP Release 17 publication for non-terrestrial networks (NTN) it seems feasible to adapt such an NR OSS protocol stack to support geostationary satellites. This talk provides hints and ideas whether OSS could be one of the starting points for satellite ground segment manufacturers, research institutes and academia to create innovation for NTN towards 6G.</p> <p><b>Florian Völk, Researcher, Bundeswehr University Munich</b></p> <p>Florian Völk is a senior researcher at the SPACE Research Center of the Bundeswehr University Munich. He studied Electrical Engineering and Information Technology in Nuremberg and Melbourne and focused on communications engineering during his studies. His research interests include physical layer techniques, system design and architecture optimization for hybrid satellite-terrestrial networks. He has strong interest in prototyping, experimental work and testbeds.</p>
16:50 -17:10	<p><b>O3b mPOWER - A new era for satellite communications</b></p> <p>The O3b mPOWER constellation of medium earth orbit (MEO) satellites will provide unprecedented connectivity performance, scale and flexibility and complement the existing O3b fleet of satellites. This presentation details the O3b and mPOWER system architectures, coverage areas and outlines the technology choices made for the air interface of modems and gateways.</p> <p><b>Dr. Ashok Kolar Rao, Vice President for Product Development, SES Networks</b></p> <p>Dr. Ashok Kolar Rao is the Vice President for Product Development at SES Networks where he is involved in developing smart antennas and novel signal processing techniques for user terminals with the help of industrial partners. He is also involved in developing the system architecture for the SES Global Inflight Connectivity offering. Prior to assuming his role at SES, Ashok was responsible for Product Management and Development at O3b Networks which was acquired by SES in 2016. He holds seven patents in the fields of video processing, satellite networking and IP multicast and has authored or co-authored more than 20 journal and conference publications.</p>
17:10-18:00	<p><b>Panel discussion with all experts</b></p> <p><b>Moderated by Thomas Wrede, Founder &amp; MD, Technology Vision Consulting</b></p> <p>Thomas Wrede is the Founder and Managing Director of Technology Vision Consulting UG, a company specialized in project studies, standardization and prototype developments in the fields of satellite communications and wireless technologies.</p> <p>Thomas has over 35 years of professional experience in the communications industry. In his 28 years at satellite operator SES in Luxembourg he has been deeply involved in the development of digital satellite television, in-home signal distribution concepts, digital satellite radio, satellite return channel technology, Internet via satellite and High Definition as well as Ultra High Definition (4K/8K) television. Thomas currently represents SES in the DVB Commercial Module as chair of the CM-S subgroup.</p>
18:00	<b>End &amp; farewell</b>