MONDAY 08:30 – 12:50

Architecture and Applications for Emerging SATCOM and NTN Communication Networks

SM01
EuMC

Chair: Ian Gresham [1]
Co-Chair: Salvatore Finocchiaro[1]
[1]Qorvo

Room: Juliana 3

In less than a decade, low earth orbit (LEO) communications constellations have radically changed the space communications industry. Emerging Satellite Communication (SatCom) applications like broadband internet access in remote areas, enhanced emergency response systems, and vehicle and object tracking, amongst other applications leveraging low-earth orbit (LEO) constellations, are all driven by advancements in high-throughput satellites (HTS) and smaller, more affordable satellite technologies. In 2016, there were approximately 725 commercial communications satellites in all orbits. By the middle of 2024, SpaceX and OneWeb had launched more than ten times this number into LEO orbits, and that number is expected to grow over the next 5 years as Amazon (project Kuiper) and Telesat begin populating their constellations. These networks require new ecosystems that support a wide range of terminals with different cost, performance, and ruggedization requirements. LEO Satcom systems require near-instantaneous switching between two satellites to maintain connectivity, driving the terminal solution to electronically steered arrays. For ultra-low-cost, high-volume consumer market verticals, the economics have driven all aspects of terminal development internally to eliminate stacked margins on the components.

Next-generation SatCom networks will also enable 6G NTN. The key success factors are high throughput, capacity, low latency, and beamformed wireless links. In this Short Course, renowned speakers from the Industry will provide a top-to-bottom review of the ecosystem for LEO satellite communication networks: Market trends, Operator visions and objectives, technical challenges for terminals (ground, airborne), terminal integration, antenna design, semiconductor, and IC solutions.

PROGRAMME

The Economics of NTN and D2D

Joe Madden [1]
[1]Mobile Expert

Technology Developments and R&D Activities at the European space Agency

Salvatore D'Addio[1]
[1]ESA

Flat Panel Satcom Terminals – Integration Challenges

Christoph Spranger [1]
[1]Vites

Integrated SATCOM Strategies: Multi-Orbit Networks and the Future of Airborne Connectivity

Blane Boynton[1]
[1]Intelsat

Enabling next generation SATCOM and NTN – a T&M perspective

Markus Lörner[1]
[1]Rohde & Schwarz

Connecting the World Through Space: RF Innovations for Space Payloads and Terminals

Ryan Jennings[1]
[1]Qorvo