UBIQUITOUS 56

Satellite-enabling the next generation network

Demonstration Overview



SES, VT IDIRECT AND FRAUNHOFER FOKUS

demonstrate the integration of satellite into 5G, highlighting use cases that capitalise on the value that satellite brings to the 5G ecosystem.

The demo features a real scenario with a 4G handheld connected to a SDR eNodeB over an active 4G cellular network. The SES Networking Garden is connected to a site in Killarney, Ireland - where the VSAT satellite is backhauling the signal to the SDN/NFV/MEC-enabled satellite-5G test bed with an integrated 5G core network at the SES teleport in Luxembourg. This test bed demonstrates the integration of satellite into a full 5G network, showcasing how satellite connectivity can be an integral part of a 3GPP network architecture.

SES delivers seamless connectivity as an end-to-end managed service between the central and edge nodes of the test bed, while VT iDirect provides the SDN/NFV/MEC-enabled hub platform in Luxembourg and satellite terminal in Killarney - and Fraunhofer FOKUS supplies the 3GPP Release 15-compliant 5G core network. In addition, the demo features a prototype LTE cellular network developed by SRS that is seamlessly integrated with the satellite-5G test bed. This network operates in LTE Band 5 (826-831 MHz (UL), 871-876 MHz (DL)) over a 5 MHz bandwidth and consists of a USRP-based LTE base station (eNodeB) and smartphones (UEs).

USE CASES FOCUSED ON THE OPTIMAL DELIVERY

Leveraging this 5G-enabled integrated satellite-terrestrial cellular network, the partners are showcasing two use cases focused specifically on the optimal delivery of multimedia content to smartphones and connected screens:

- Efficient multi-access content delivery and edge caching over GEO satellite backhaul
- Adaptive Bit Rate (ABR) streaming with edge caching via Mobile Edge Computing (MEC)

These use cases demonstrate how an end-to-end integrated network can use broadcast techniques to populate network edge CDN appliances, which can support and cache ABR streaming content while maintaining good QoE and QoS characteristics.



