

# 5G NTN FOR SPACE-BASED APPLICATIONS

## SYSTEMS ENGINEERING

### 5G NON-TERRESTRIAL NETWORKS (NTN) FOR SPACE-BASED APPLICATIONS

Our client is a world leading designer and manufacturer of next-generation satellite communication systems based on in-house developed chipsets, delivering some of the smallest VSAT terminals in the market as well as Electronically Steered Multibeam Antennas (ESMA) for a variety of mobility applications and services such as in-flight connectivity, commercial payloads, Internet of Things (IoT), consumer broadband and connected cars.

The company needed to explore the use of its technologies to support the future development of 5G solutions for satellite and more in general for Non-Terrestrial Network (NTN) platforms.

Telespazio UK, through its recent acquisition of e2E, were contracted to support the development of specific tasks at system requirement definition level.

Utilising a blend of specialist engineers with extensive Software Defined Radio (SDR) design experience, e2E were able to provide the required analysis and skills to our client's project remit.

A six-month project commencing with a review of current ground and space infrastructures would inform an initial set of requirements. With these requirements in mind, a review of the technology options would then lead to candidate payload designs.

The following activities were delivered within the project:

- › Review of ground and space infrastructure and related 5G features
- › High-level specifications of a 5G payload architecture
- › Review of design and technology options
- › Payload design

With more than a decade of experience and resource that are highly skilled in the design of SDR solutions, this placed Telespazio UK in a unique position to support our customer's requirements.

We have previously established a development team working closely with a number of different key satellite network operators to evaluate the adoption of 5G over satellite communications platforms.