

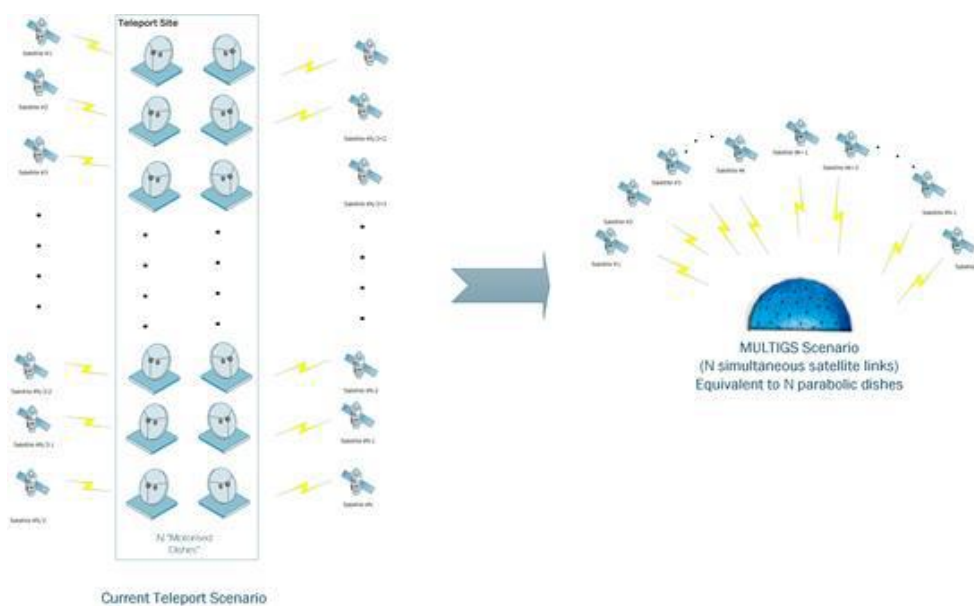
Multi-beam Ground Stations for Multiple Services (MULTIGS) – Abstract

AN ARTES PROJECT IN THE EUROPEAN SPACE AGENCY

CTG has performed a Definition Phase, defining the product concept for a Multi-beam Ground Station in L and S Band that can be scaled in order to target both high gain and low gain applications.

As part of the contract, a requirements analysis, trade-off, design definition, and verification control assessment were performed based on the following use cases: telecom, earth observation, navigation, multiple-frequency use, and big antennas.

The resulting design has the capability to create multiple beams in a large quantity and the switching between them in an agile way as required by the most demanding non-GEO applications. In addition, the reduced footprint allows a reduction in the costs associated to the ground infrastructure and providing flexibility in the teleport sites selection. This is possible thanks to phased array technology and the associated beamforming network where the main innovations of the products can be found. The next figure illustrates the MULTI GS product concept as new paradigm compared with traditional multi-reflector teleport sites.



MULTIGS Product Concept

The key differentiator of this product is the capability to create multiple beams in a large quantity and the switching between them in an agile way as required by the most demanding non-GEO applications. In addition, the reduced footprint is other key attribute allowing to bring down the costs associated to the ground infrastructure and providing flexibility in the teleport sites selection. This is possible thanks to phased array technology and the associated beamforming network where the main innovations of the products can be found.