

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)  
Advanced Technologies for Space Communications and Navigation (6)

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THE EXPLOITATION OF SPACE SOLUTIONS TO RESPOND TO GLOBAL REQUESTS OF THE  
DEVELOPING CIVIL SOCIETY: AN OVERVIEW ON THE ITALIAN ACTIVITIES IN THE ARTES  
ADVANCED TECHNOLOGIES AND PRODUCTS FRAMEWORK FOR SATCOM AND NAVIGATION

**Abstract**

The Italian activities on the Advanced Technologies for the Space Communications and Navigation as driven by the Italian Space Agency (ASI) in the ARTES (Advanced Research in Telecommunications Systems) Programme of the European Space Agency (ESA) framework is here discussed. The ARTES Programme responds to the strategic goal of ASI to develop technologies for space telecommunications, both in its space and terrestrial elements, including the technologies for integrating space resources with the new generation of terrestrial networks. ASI supports projects within the ARTES Advanced Technology (ARTES 5.1) and ARTES Competitiveness & Growth Programme (ARTES 5.2 and ARTES 3-4 Satcom Products) which are dedicated to the development, implementation and validation of a wide range of innovative technologies for the space exploitation. Both in competitive tenders and in open calls, ASI has financially supported the Italian advanced technology projects covering a wide range of domains like: L-S-C-Ka-Ku-Q/V antennas, filters and converters, codes and emulators, testbeds, devices and demonstrators, terminal and modems, metasurface antennas, grid tabular structures, on-board interference geo-location systems and so on. Following the ARTES project development guidelines of ESA, ASI has committed on the long term technological development of the Satcom industry with the double aim to be competitive on the global market and at the same time to respond to the requests of the developing civil society, for which, the innovation and sustainability of the solutions reached so far show a very high level of positive socio-economic impacts.