

BlueSPACE – Spatially Multiplexed 5G Network Infrastructures and Advanced Technology and Networking Capabilities

European Commission H2020-5GPPP – Grant agreement no: 645127, BlueSPACE Project

Research and Innovation Action under ICT-07-2017 5GPPP Phase II call

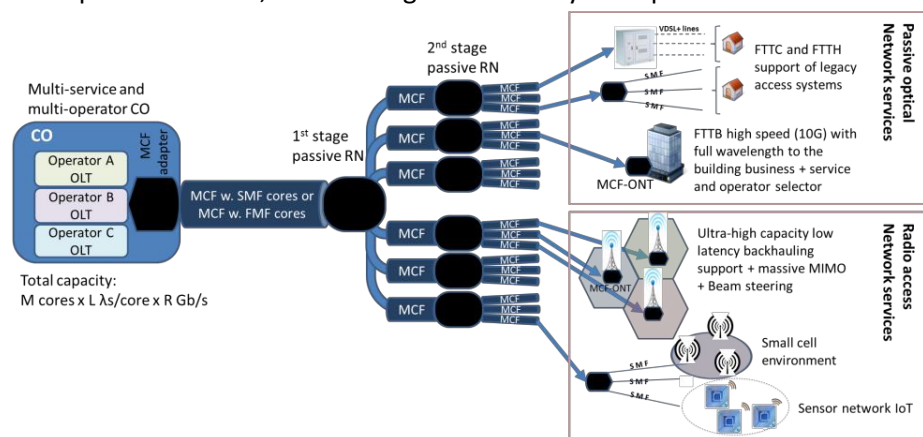
Start date: September 2017, Duration: 36 months

Total budget: 6.655.128 € AIT's budget: 512.500 €

Project Summary

BlueSPACE project (<http://www.bluespace.eu>) targets a disruptive yet realistic and scalable approach for the fronthaul part of the 5G networks, able to address efficiently and in a scalable and future-proof manner the high capacity and flexibility requirements imposed by advanced 5G services. The approach includes the following key technology attributes:

- A SDM-based optical front-haul system design that flexibly extends the overall network capacity. The SDM infrastructure supports spatial diversity in the RF and optical domain and enables virtualization at the infrastructure level.
- A reconfigurable spatial/ spectral resource allocation and optimization mechanism. This is implemented by means of SDN/NFV technology that allows the centralized location for the management and processing functions in the BBU pool at the CO, while being benefited by the spatial allocation of the incoming demands from different RRH sites.
- The compatibility with existing access network approaches. This includes the support of both PON solutions (in the access part) and flexible back-haul interfacing (in the metro-core part).



The project promotes the use of analogue radio over fibre which in combination with the SDM based front haul infrastructure provides different degrees of centralized processing, allowing in turn the development of more advanced virtualization solutions for the access segment. Novel optical beam forming and remote powering technologies that rely on the use of multiple spatial paths are also examined.

AIT's Role

AIT is the technical manager of the project and responsible for the support and promotion of the overall concept. Also AIT leads the system definition activities and the activities related to the techno-economic evaluation of the results as well as the feasibility of the concept.

Project partners

TU/e, ADVA, Intracom, Thales, Satrax, Orange, OTE, NextWorks, Eulambia, Optoscribe, AIT, UPV, CTTC, UC3M

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