EU SPACE

EU-funded space research

SatCom technologies

Satellite communications is a fundamental technology that enables remote connections and transmissions in end to end services like telecommunication. This technology has become an essential element for defence, security, humanitarian and emergency response and diplomatic communication.

The challenge is to **lower the communication latency** to underpin competitiveness and contribute to integrating space in the society and economy.

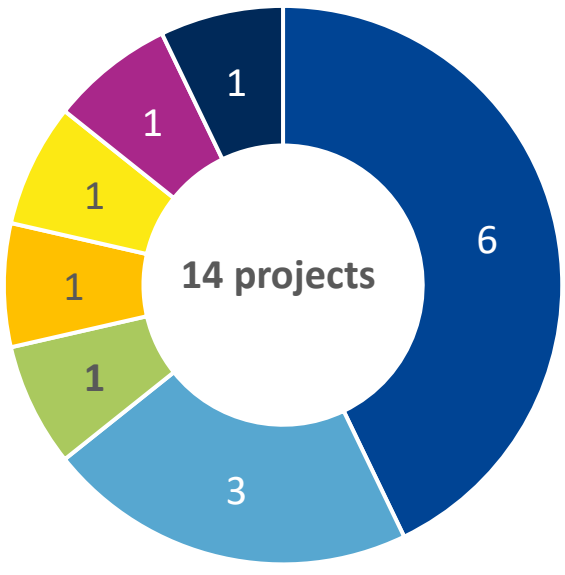
The **focus of EU-funded activities in SatCom technologies** is on improving

- the transmission latency,
- the persistence of the transmission,
- the throughput of the transmission,
- the feasible range of the transmission,

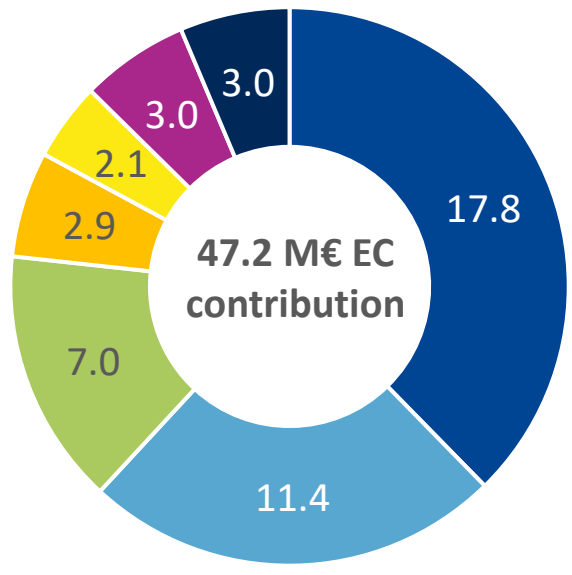
… while addressing new challenges associated to cybersecurity, cost reduction and the integration of ground segment aspects.

In Horizon 2020 **14 projects with SatCom technology focus** have been funded within seven sub-domains:

Number of projects
by sub-domain 2014-2020

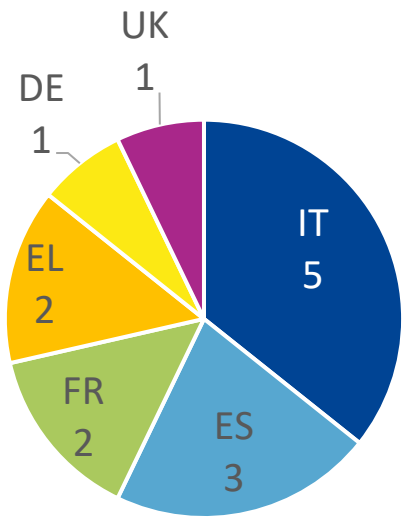


EC contribution by sub-domain
in M€ 2014-2020

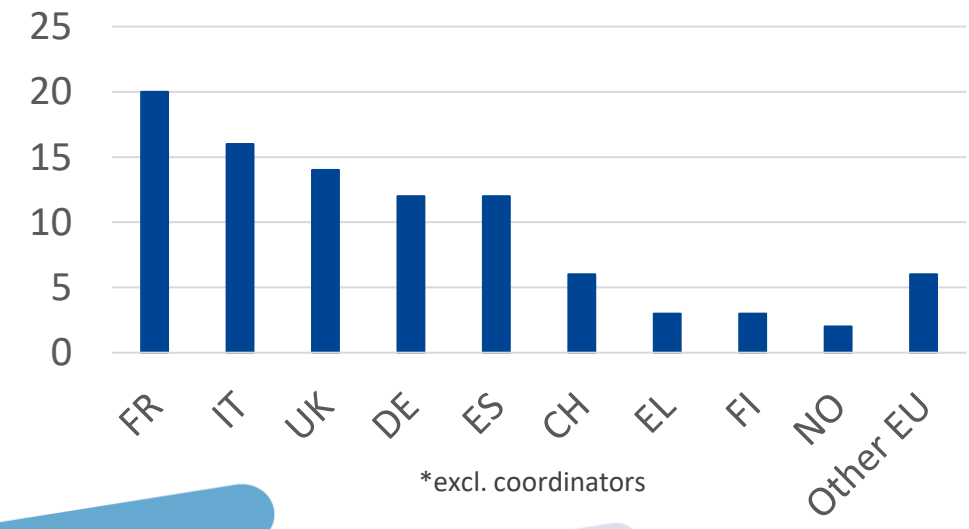


A total of **108 beneficiaries** received funding:

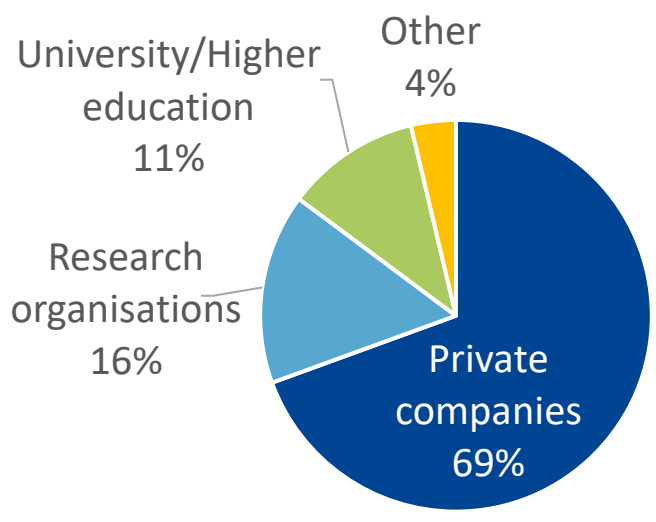
Country split of 14 project coordinators



Country split of 94 participants*
(incl. associated and third countries)



% of beneficiaries by type
(coordinators and participants)



Prepared by STARS*EU, source: HaDEA, CORDIS

EU SPACE

EU-funded space projects with focus on

SatCom technologies - H2020 projects

Optical and photonic systems

2016-2019, completed

OPTIMA – 2.8 M EUR

Developing photonics payload unit for SatCom to be used in very high throughput satellites (VHTS)

BE, ES, FR, IT, **UK**

2018-2020, completed

SODaH – 3.1 M EUR

Maturing key photonic technologies to implement a "fiber-like network" for satellite constellations

IT, FR, DE, **ES**

2018-2022, ongoing

ORIONAS – 3.0 M EUR

Disrupting the way laser communication systems are designed (low cost, size, weight and power consumption)

DE, FR, UK, PT, CH, IT, **EL**

2019-2022, ongoing

VERTIGO – 3.0 M EUR

Developing on-board & ground concepts and technologies enabling increased link throughput towards and beyond 1 Tbps

EL, DE, UK, CH, **FR**

2020-2022, ongoing

SIPhoDiAS – 3.0 M EUR

Developing an opto-electronic (O/E) interfaces, i.e., transceivers, modulators and photodetectors

DE, FR, CH, ES, UK, **GR**

2020-2023, ongoing

PhLEXSAT – 2.9 M EUR

Designing, fabricating and testing of a photo-digital channelizer for flexible digital high throughput satellites

UK, DE, CZ, FR, **ES**

HF microwave active/passive

2016-2020, completed

QV-LIFT – 3.4 M EUR

Building the foundation of the ground segment technology for the future Q/V band Terabit SatCom systems

CH, ES, FR, UK, **IT**

2017-2021, completed

MiGANSOS - 2.9 M EUR

Assessing and space-evaluating a "state of the art" Gallium nitride/Silicon (GaN/Si) process

FI, FR, **IT**

2018-2021, completed

FLEXGAN – 2.1 M EUR

Designing, developing and testing VHTS that are required for 5G operations

FR, IT, **ES**

End-to-end systems

2018-2022, ongoing

HI-SIDE – 7.0 M EUR

Improving space on-board data handling and transfer capabilities in support of future data networks

UK, GR, NO, ES, FR, **DE**

Ground Segment

2021-2024, ongoing

ATRIA – 3.0 M EUR

Developing an intelligent AI-powered ground segment control for flexible payloads

IT, FR, DE, **ES**

Antennas

2020-2023, ongoing

FLEXCOM – 2.9 M EUR

Building a new class of phased arrays technology for airborne, spaceborne and Earth segment satellite communications

DE, PL, FR, ES, **IT**

Quantum Key Distribution (QKD)

2021-2023, ongoing

QUANGO – 2.1 M EUR

Designing CubeSats with quantum key distribution security for 5G communication

ES, MT, FR, **IT**

Reconfigurable OBPs

2020-2023, ongoing

DYNASAT – 3.0 M EUR

Developing and improving bandwidth-efficient transmission techniques for mass-market & 5G users

CH, FR, FI, **IT**

Secondary focus

U+VHTS

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