

EU Secure Connectivity Programme (1/5) Targeted Use Cases and Related Service Categories



Objective 1: Ensure long-term availability of services critical for EU and EU policies





of commercial services by

private sector

EU Service Segmentation

Strong security-related and sovereignty-related requirements

Governmental services

Commercial services



EU Secure Connectivity Programme (2/5)





EU Service Segmentation

EU Governmental services

Commercial services

Service Categories

Broadband communication services

Mobile handheld services

Low data rate communication services

QKD services

Additional missions

Components

Multi-orbit broadband constellation(s)

Mobile LEO constellation

Low data rate LEO constellation(s)

QKD LEO constellation (or hosted payloads)

Specific telecom payloads: hosted payload GEO or MEO or LEO

Additional non-telecommunication missions: hosted payload – LEO

Wide Set of Critical Innovation and Solutions

GEO BB VHTS

150-200 BB LEO constellation

20-30 satellite MEO BB constellation

Future services in Q/V band and beyond

Optical ISL and overlay

600 LEO constellation at 600 km for mobile handheld

70/100 LEO LDR constellation(s) at 600 km

→ THE EUROPEAN SPACE AGENCY

Main Components



Components

Multi-orbit broadband constellation(s)

Mobile LEO constellation

Low data rate LEO constellation(s)

QKD LEO constellation (or hosted payloads)

Specific telecom payloads: hosted payload GEO or MEO or LEO

Additional non-telecommunication missions: hosted payload – LEO

Development and validation Envelope (order of magnitude) Development Validation of ONE large constellation

Preparatory / de-risk phase for the other large constellation

LDR constellations

Order of magnitude : 2 B€

EU Secure Connectivity Initiative (3/5) Accelerator Effect for Moving Technologies to Operational Stage



Mobile 5G (handheld) coms Large-size LEO constellation

Cybersecure architecture Ground segment Automated (Al, cloud) network and constellation management Broadband coms User terminals with self-Advanced Large-size Multi-orbit constellation scanning antenna, multimanufacturing beam, multi-orbit Advanced payloads with active antennas Optical technologies

Low Data-Rate missions (AIS, ADS-B,...)

Medium-size LEO constellation(s)

(nanosats to minisats)

Huge acceleration in development efforts through full scale infrastructure projects

System studies and developments started under 4S SPL, or other ARTES

QKD service Small-size LEO constellation



EU Secure Connectivity Initiative Leverage Effect for ESA MS Investment



For governmental infrastructure:

ESA contribution to dev. & val. 750 M€

Development and validation phase 2 B€

Full-scale infrastructure deployment > 6 B€

For commercial infrastructure:

ESA contribution to dev. & val.

Development and validation phase

Full-scale infrastructure deployment

EU Secure Connectivity Programme (4/5)

Infrastructure and PPP Approach



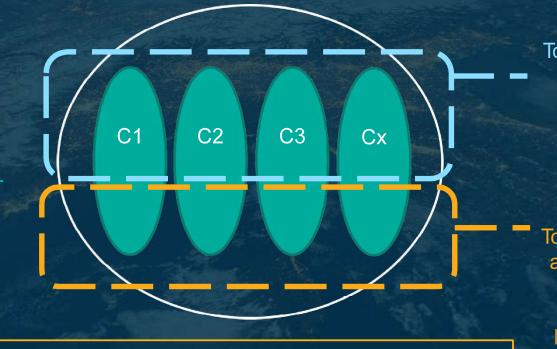
EU Service Categories 2 sub-categories

Strong security-related and sovereignty-related requirements

> Governmental services

Commercial services

EU Secure Connectivity Infrastructure Multi-orbit, multi-component (C) system



PUBLIC-PRIVATE PARTNERSHIP

EU Secure Connectivity Infrastructure 2 sub-infrastructures

Governmental Infrastructure

To include all space and related ground assets necessary for provision of governmental services

Commercial Infrastructure

To include all space and ground assets other than those being part of governmental infrastructure. Financed by private sector

