



# Optical feeder for GEO VHTS

DEFENCE AND SPACE

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**AIRBUS**

# Satellite operators needs

## ➤ Satellite operators

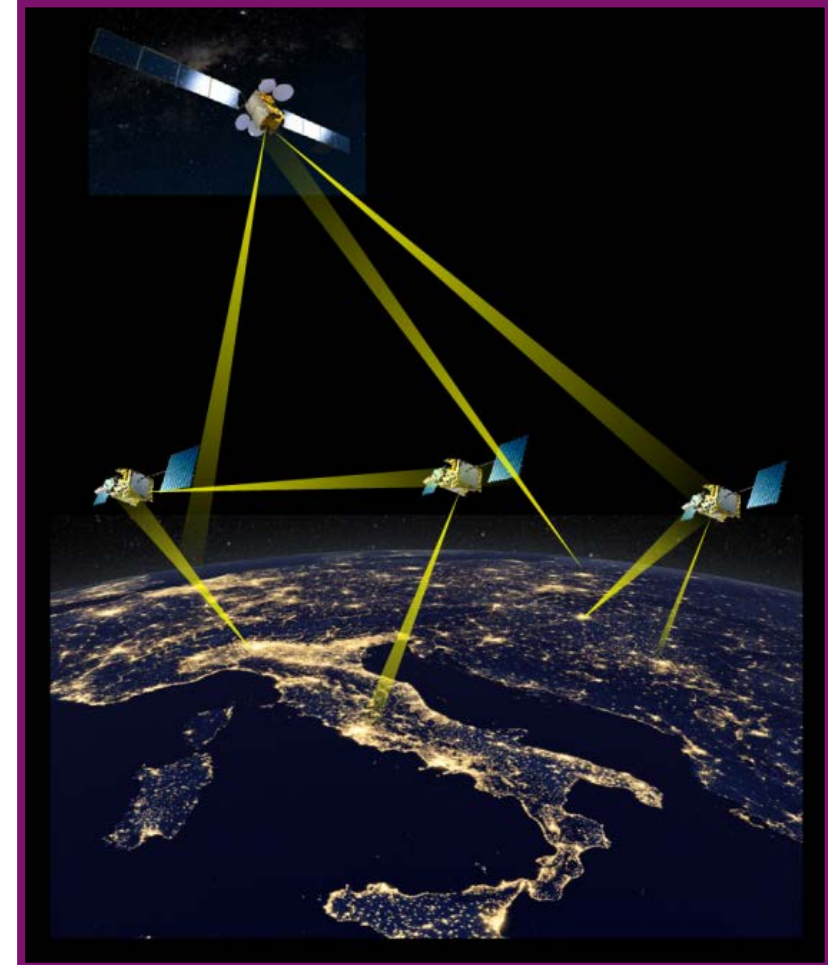
- Traditional GEO operator
- Emergence of new players: constellations, terrestrial

## ➤ Common needs

- VHTS, with associated limitations
  - Spectrum allocations
  - Onboard power
- Challenging cost/Gbps
- Availability

## ➤ Considered options

- Graceful degradation
- Multilayer: HAPS, inter-orbit
- ISL (inter-orbit, inter-plan)
- “Fiber-in-the-Sky” concept



# Telecom Satellite Program Line approach of optical communications

- **Develop competitive advantage for our satellite and system business**
  - Master overall system architecture in order to propose attractive End to End solutions to customers
  - Master the optical communication technology
  
- **Propose, design and manufacture competitive optical satellite communication payloads and satellites**
  - Offer new opportunities to our SatCom customers (higher capacity, RF spectrum scarcity, reduce ground segment cost, security...)
  - Secure access to competitive technologies incl. optical terminal
  
- **Sell satellites with hosted payloads thanks to optimized offers and leverage on Airbus DS's technologies & capabilities (eg: Eutelsat-9B with EDRS-A, ...),**

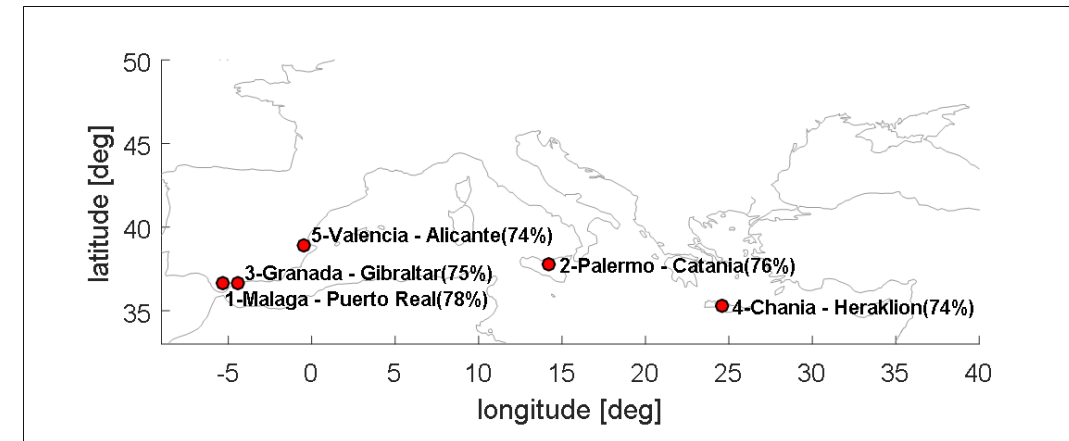
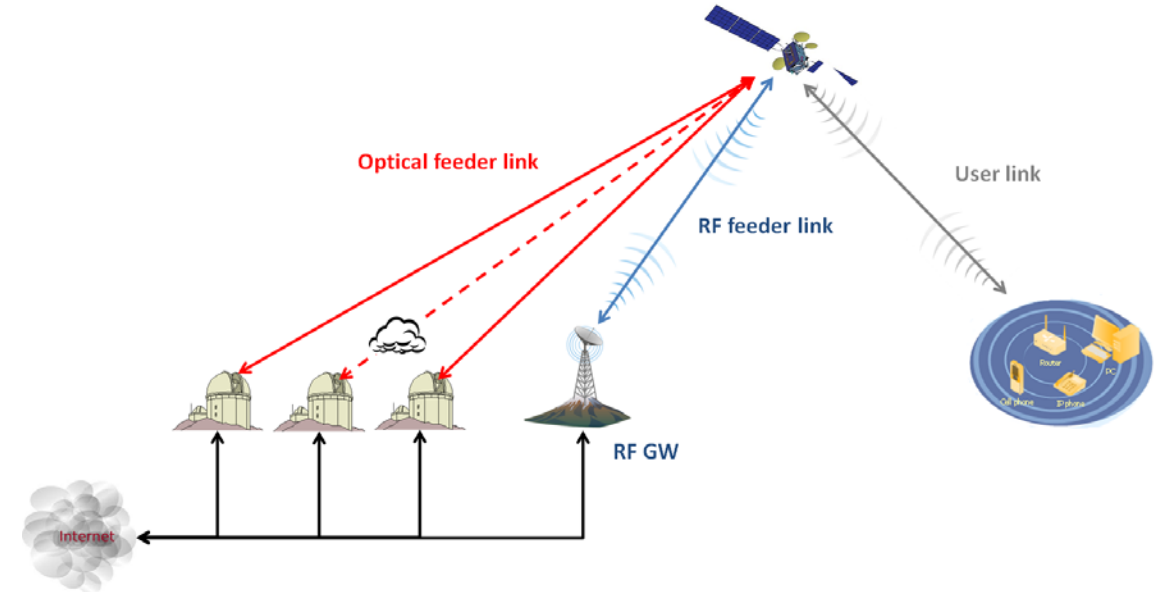
# Overall approach

## ➤ Optical VHTS satellites system activities

- Architecture drivers
  - CAPEX & OPEX
  - Availability
  - Capacity
- Identification of technical gaps
  - System (space & ground segment + interfaces)
  - Terminal
  - Ground station

## ➤ Identification of synergies with LEO constellations (Artes C&G)

## ➤ Overall demonstration roadmap (GEO/LEO)



# ROADMAP FOR OPTICAL FEEDER LINKS @ 1,55μm

**GEO market**



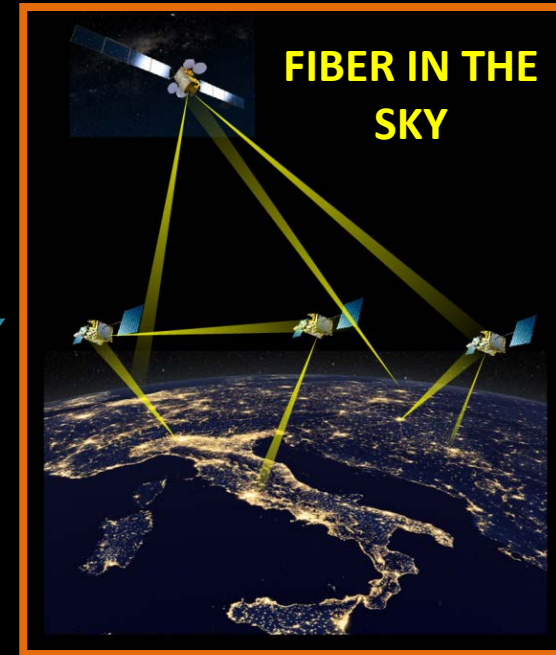
GEO feeder demo



GEO VHTS

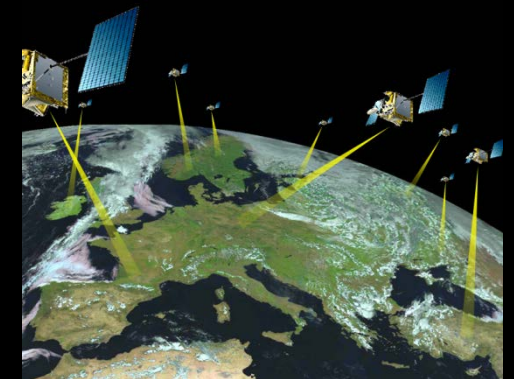
**2025**

Operational  
Optical / RF feeder  
on LEO constellation



**2020**

LEO feeder demo  
Very Low Cost Terminal on  
OneWeb platform



**LEO/MEO market**

# Objective from Scylight

- **Airbus expect to use Scylight F support to develop an optical feeder link for GEO VHTS applications**
- **Main goal: to develop a precursor in cooperation with one Satcom operator, in order to validate**
  - Operational concept & system architecture
  - High level requirements
  - Interfaces
  - Innovative solutions

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Thank you