

# Ground Segment Commercialisation Opportunities

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19/01/2024

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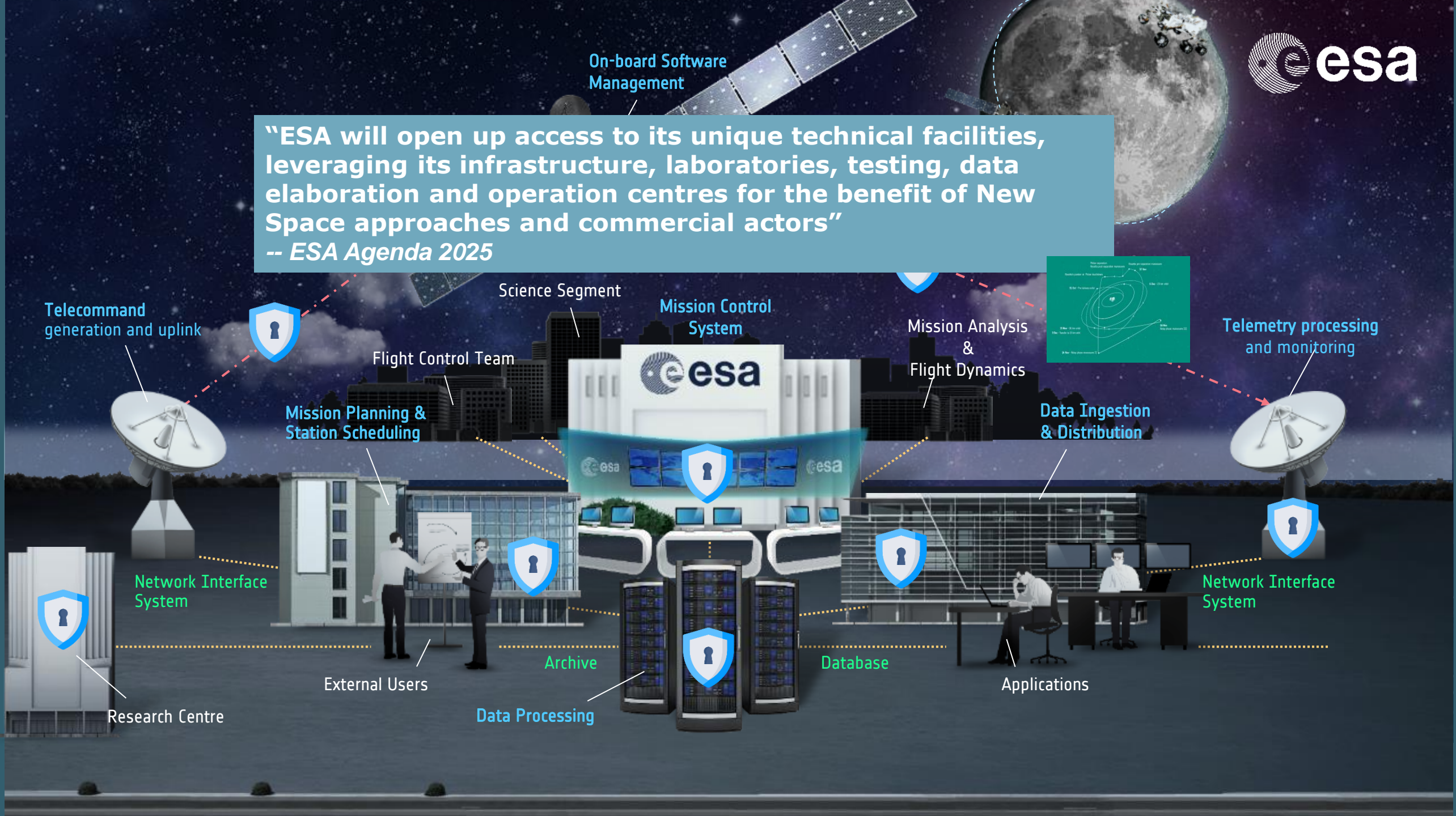




Overlooking the ground segment is like constructing a car without wheels, without the essential connection to the ground, the mission stands still!



**“ESA will open up access to its unique technical facilities, leveraging its infrastructure, laboratories, testing, data elaboration and operation centres for the benefit of New Space approaches and commercial actors”**  
*-- ESA Agenda 2025*





# Call for Ideas - Ground Segment Commercialisation Opportunities

CAMPAIGN

Innovation Area: Operations Innovations

Submit Your Idea

Overview

Discussions

Activity

Ideas 0

Team

# Paving the way for Optical Communication



Deep-space optical communication telescope

Testbed



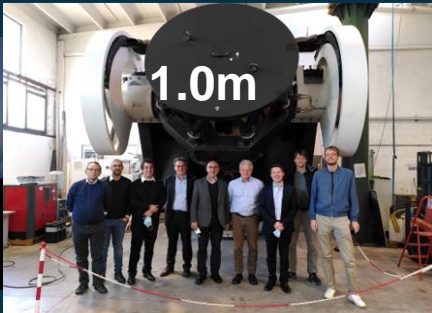
La Silla, Chile  
Cebreros, Spain

Izaña-1



Tenerife, Spain

NEOSTEL  
(FLyEye)

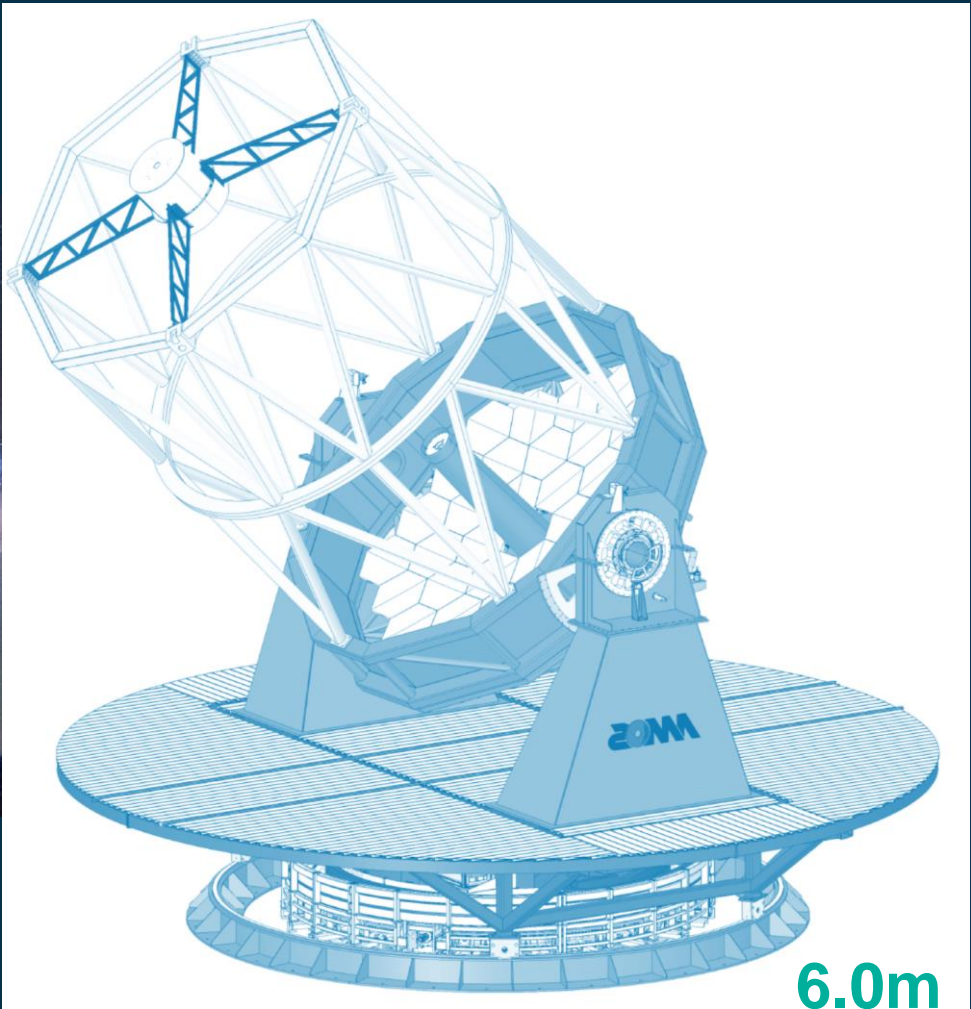


Monte Mufara,  
Sicily, Italy

Helmos



Helmos, Greece  
Courtesy National Observatory of Athens



Location: to be determined



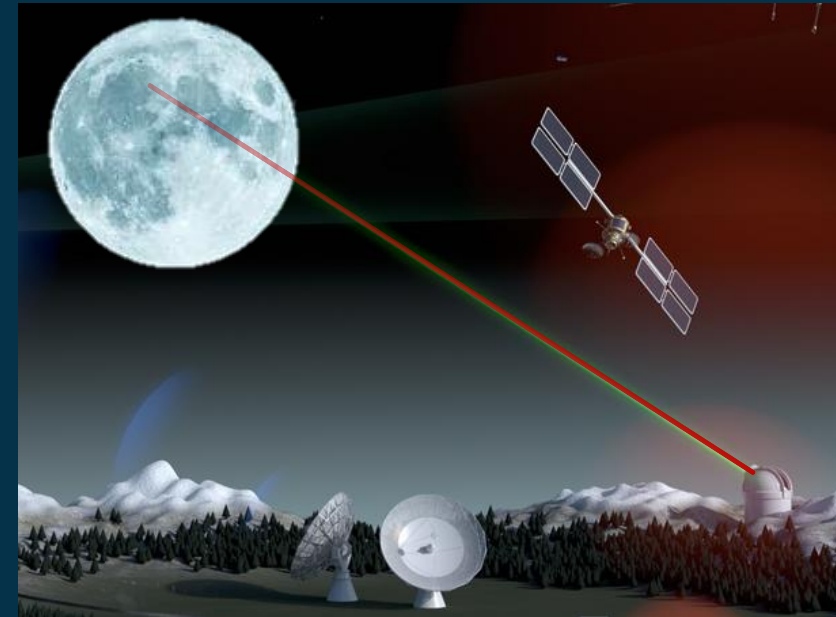
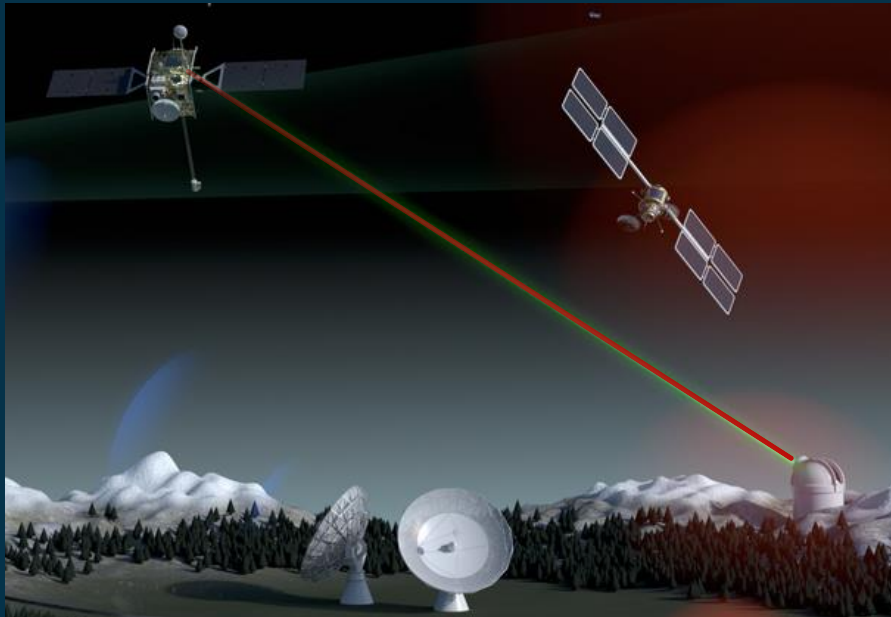




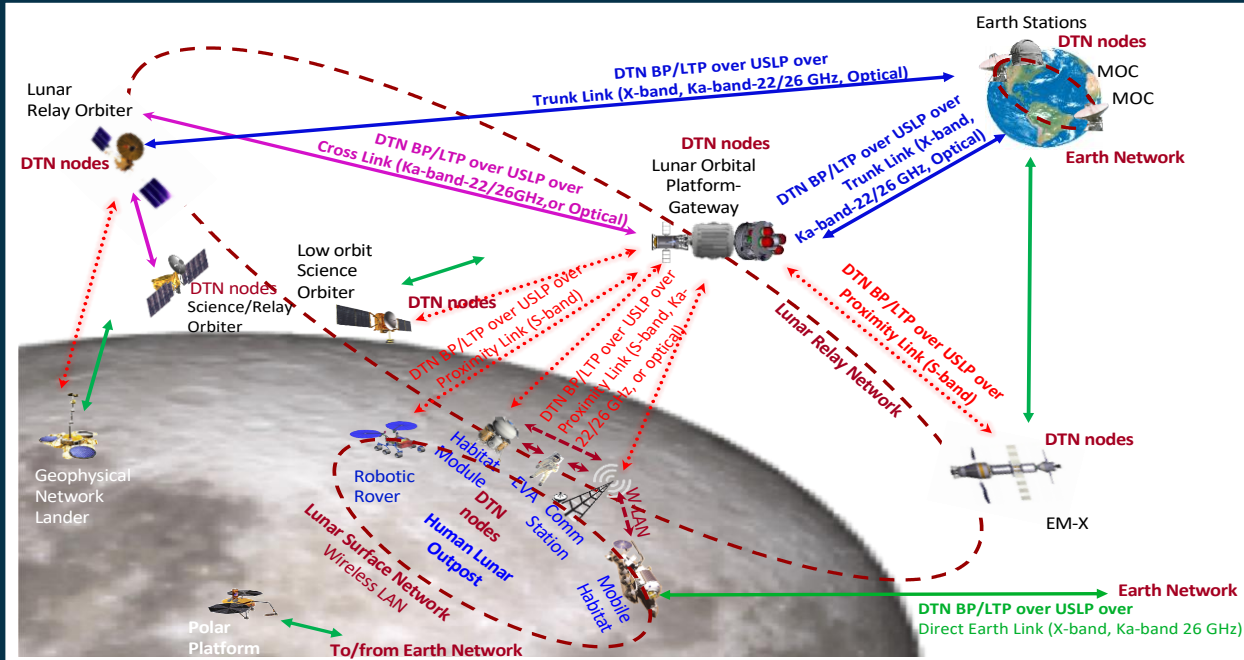
# Nucleus Network – Motivation

The Nucleus network is a cooperation between ESA/ESOC and industrial partners to **break the chicken-egg dilemma for optical communication**:

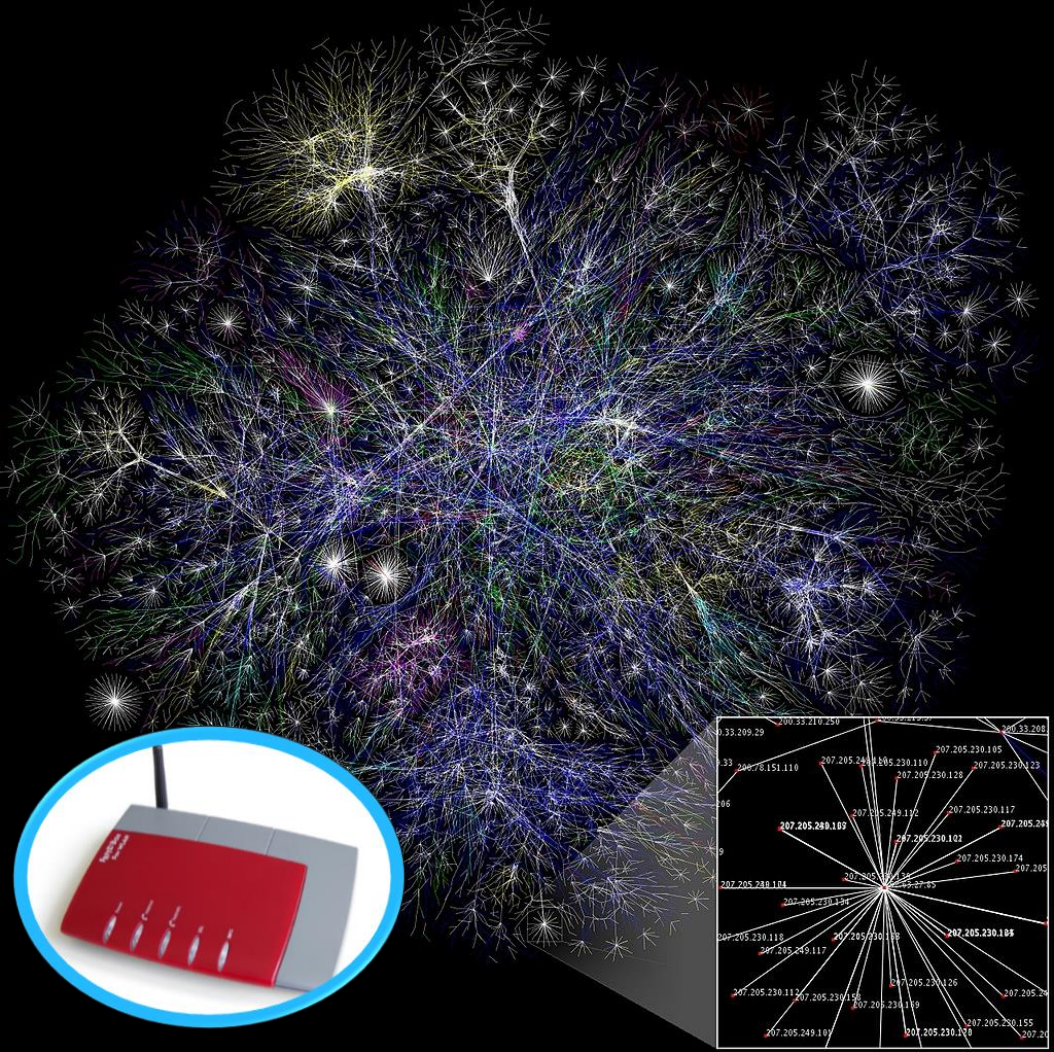
“No ground station network – No space terminals”



# Solar System Internet – Extending the Internet into Space



- Connecting space assets and users via a **network-of-networks** operated by space agencies and **commercial entities**
- **interoperable Positioning, Navigation and Timing (PNT) and Communication services**



By The Opte Project - Originally from the English Wikipedia; description page is/was here., CC BY 2.5, <https://commons.wikimedia.org/w/index.php?curid=1538544>





# Flight Dynamics & Mission Analysis

We have a long-lasting experience in providing mission analysis and flight dynamics services to Earth Observation, Astronomy, interplanetary and entry missions with an experienced team of experts

ESA as Enabler and Partner to commercial space:

- Mission Analysis to assess and allow a trade between all different transfer options and operational orbits
- Lunar and interplanetary orbit determination
- Manoeuvre planning and command generation

ESA assets that can unleash commercial potential

- Expertise
- Data
- Software
- Validation
- Flight Dynamics support services

