



**We help  
Earth benefit  
from Space**



# **SSC Space Italy services for Cubesat and constellations**

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**ASI Workshop**

**L'impegno italiano nel settore dei CubeSat: tecnologie e missioni future**

July 2024





**SSC Space Italy** is a provider of engineering and scientific services to the space industry.

As the Italian subsidiary of the SSC Group, we offer cutting-edge solutions to our clients, providing consultancy service to the space industry which can cover the entire space product development life cycle.

We provide top-notch profiles to bring your team the needed experience to successfully help and support your projects.







# Swedish Space Corporation

We help Earth benefit from space

SSC is a leading global provider of advanced space services. Initially pioneering scientific rocket launches in northern Sweden, SSC have grown into a full-service supplier of state-of-the-art space engineering, satellite and launch services to commercial and institutional customers worldwide.

Since the 1960s, SSC has contributed to the development of space technologies.

Today, SSC offers to customers cutting-edge competence and technology within a variety of segments in space, such as science and launch services, satellite ground network services, and spacecraft operations and engineering services.

## SCIENCE AND LAUNCH SERVICES



## SATELLITE GROUND NETWORK SERVICES



## SPACECRAFT OPERATIONS AND ENGINEERING SERVICES



## DATA ANALYTICS AND PROCESSING SERVICES



# SSC Group Worldwide



**600 Employees**  
**30 Nationalities**  
**20 Locations**  
**10 Countries**



# ESRANGE Space Center

The most versatile space center in the world



## SCIENCE & LAUNCH SERVICES



Sounding Rockets



Technology Demonstrations



Stratospheric Balloons



Reusability Testbed



Launching of Small Satellites

- SSC Ground Stations
- Collaborative Stations
- SSC Offices
- SSC Network Management Centers

5200 km² of ground space

## SATELLITE GROUND STATION SERVICES



Satellite Ground Network

# Satellite Ground Station Services

SSC CONNECT - Your link between Earth and Space



Launch & LEOP



Smallsat



On-orbit



Lunar



Hosting

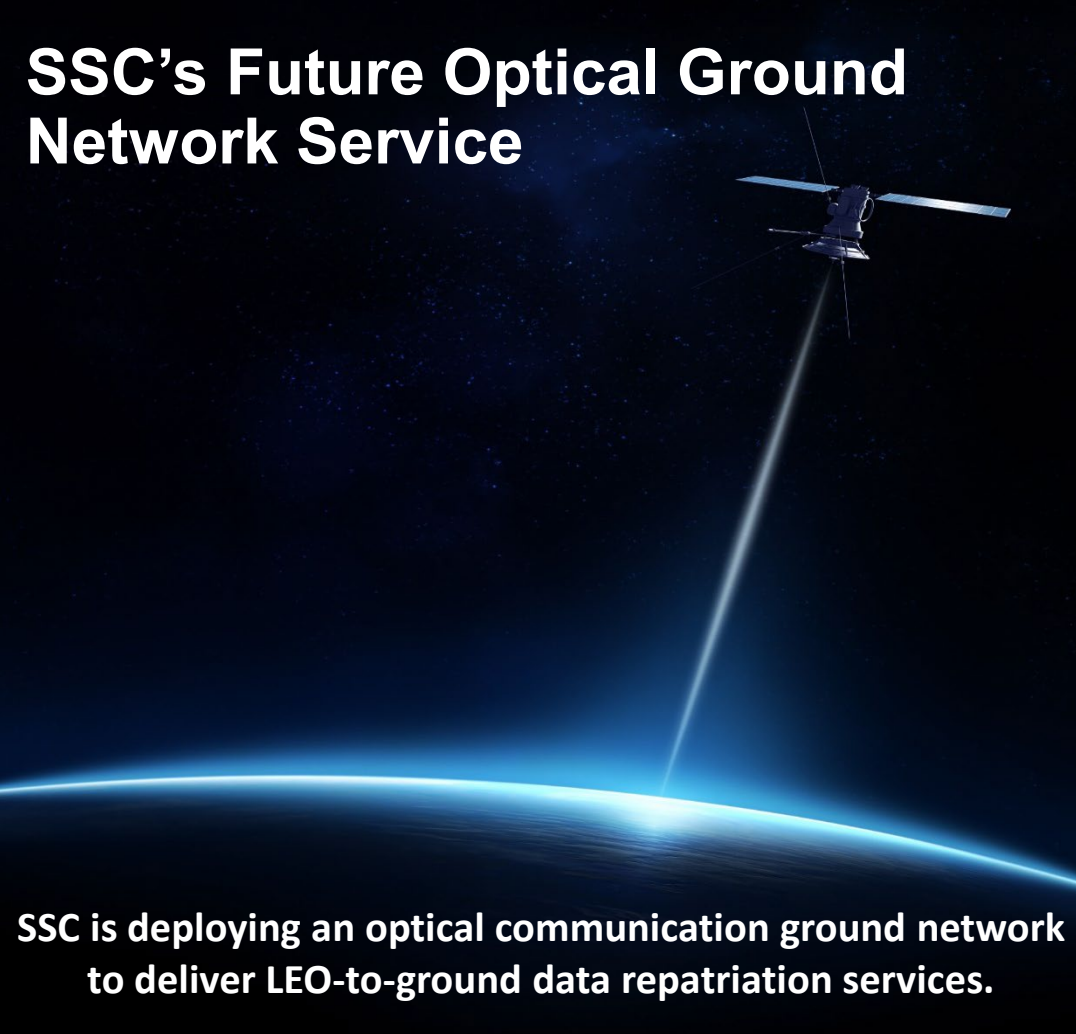
## Full responsibility for your assets in space

- 30 years experience of providing mission control services
- Prime and back-up operations for geostationary and polar satellites (e.g. Odin, SES Sirius)
- Mission planning, platform and payload management
- Satellite operations and flight dynamics engineering
- 24x7x365 console operations

## We are here to help and advise with ground operations

- Expert engineering and development services
- Ground system architecture design
- Modeling and simulations for coverage analysis
- Analysis of alternative ground system approaches
- Frequency and regulatory coordination

**A complete offering of advanced ground station services for successful operations**



# The NODES Project

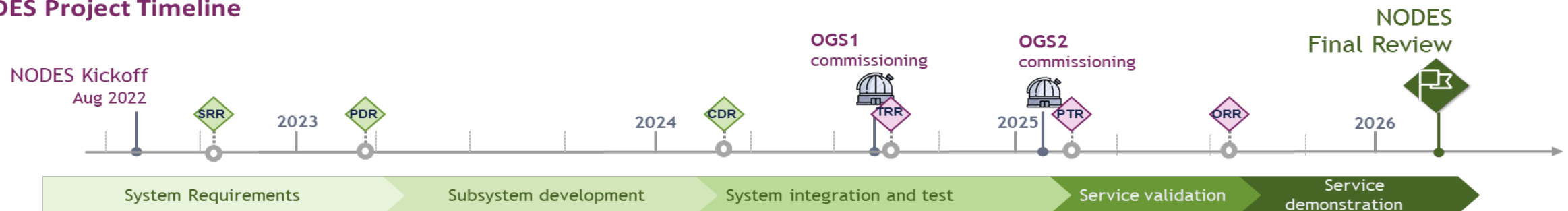


## Project goal:

Development of an **optical communication ground network** to deliver LEO-to-ground data repatriation services.

- LEO-to-Earth data services, initially addressing the Earth Observation market.
- Aiming for a multi-mission infrastructure.
- Highly automated and upgradable service.
- Leverage the SSC know-how of the existing RF ground network service.
- Stand-alone service, to be later incorporated into SSC's portfolio as a complement to RF.

## NODES Project Timeline





# The NODES Project



## SSC Global Network of Ground Stations



## OGS1 key features

Bi-static design (aperture $\varnothing$ )	✓ (60 cm)
1.5 $\mu$ m band (communications)	✓ (RX up to 10 Gbps)
Multi-mission (standards)	✓ (CCSDS O3K)
Location	Western Australia
Manufacturer	Cailabs
Commissioning	Q3 2024



## OGS2 key features

Bi-static design (aperture $\varnothing$ )	✓ (50 cm)
1.5 $\mu$ m band (communications)	✓ (TX + RX up to 10 Gbps)
Multi-mission (standards)	✓ (CCSDS O3K + SDA OCT)
Location	Santiago, Chile
Manufacturer	Safran
Commissioning	Q1 2025



- Looking for space mission test partners and early customers from Q3 2024!
- Collaborative OGSs may also be added to the network.



# Spacecraft Operations and Engineering Services



## Space Engineering

We provide top-notch profiles to bring your team the needed experience to successfully help and support your projects. We can offer a wide range of skill sets, which cover the entire space product development life cycle. The expertise we can provide in our Service & Support Portfolio spans from Preliminary Phase 0/A (conceptual mission design) to Phase F (mission operations, maintenance, and disposal).

## Mission Operations

Our expertise covers all facets of operations' preparation and execution for both the space and ground segments. We can provide services and solutions for every stage and for any type of space mission.



## Scientific Services

We have the capability and the expertise to provide support to strategic and long-term science planning, along with Missions Science Data Processing, Payload Operations & Software Development, Science IT Infrastructure and Operations support.

## Systems Engineering and Software Solutions

We develop software solutions for the ground segment, and we supply a wide range of operational tools.



# Spacecraft Operations and Engineering Services



## Mission Operations



### OPERATIONS ENGINEERING

We cover the whole operations spectrum, from procurement, definition and testing of system requirements through integration and validation of the ground segment, operations preparation, training, simulations and operations execution

### OPERATIONS EXECUTION

We can support LEOPs, decommissioning and routine operations services including anomaly handling and resolution. Our teams support satellite and ground segment operations on a 24/7 basis.



### GROUND SEGMENT SOLUTIONS

We identify the potential for improvement and automation of space engineering and operations tasks and develop customized software solutions.



### GROUND SYSTEMS ENGINEERING

We have extensive experience in developing and customizing satellite monitor and control systems. Our teams can undertake a complete ground segment AIV including integration management, test planning, validation and system acceptance.

### SIMULATIONS AND TRAINING

We offer tailored training courses in all aspects of satellite operations based on our thirty-year operations experience. As simulations officers for manned and unmanned missions, we train full flight control teams in satellite operations driving real "nominal" and "contingency" situations in a control room environment.





## KEY PARTNER

**SSC Space Italy** is part of an international group with a large history in the space industry, with more than 30 successful years as key partner of the European Space Agency ESA, supporting Earth observation, telecommunications, navigation constellations, planetary and astronomical missions, manned space missions, facility management, education & communication.

Some clients of our Group







**Swedish Space  
Corporation**



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