**ELT**GROUP

SHAPING TECHNOLOGY.
GLOBAL PROTECTION.

# EMSO dallo Spazio

# La Missione SCORPIO

## G. Foglia

**Head of
Research & Innovation Department**

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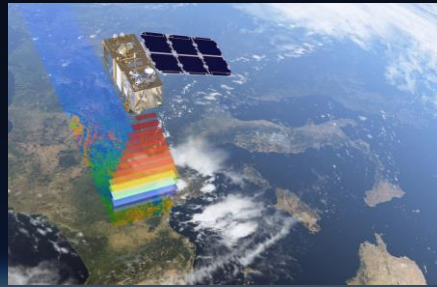- Document RECIPIENTS are held responsible for unauthorized diffusion of the document or part of it

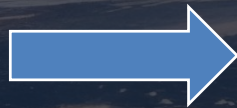In this context the word RECIPIENTS refers to this meeting partecipants.
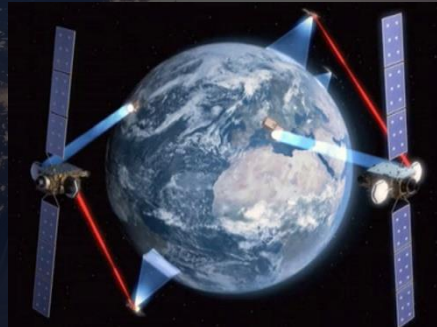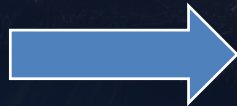
# EMSO In Space
## Space Based main applications

**EW** main applications

- Earth Observation



- SIGINT from Space
- SAR denial

- Navigation



- Navigation Warfare

- Telecommunication
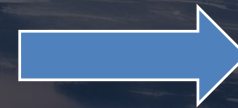


- CEMA

# ELT Group Space Heritage & Roadmap
## From Ground to Orbit

## Cyber Security

## Ground Segment

**Satellite link**
**CEMA**
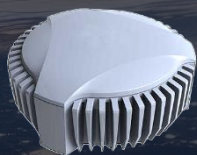
**Navigation Warfare**
**CEMA**
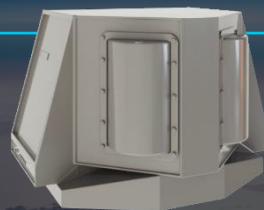
**Zenithal Jammer**

# ELT Group Space Heritage & Roadmap

## From Ground to Orbit

**Cyber Security**

**RF Monitoring** | **Stratosphere**
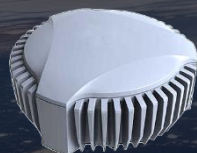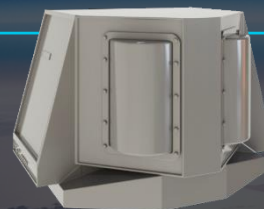
**HAPS**

**Ground Segment**

**Satellite link**
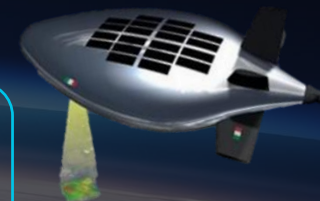**CEMA**

**Navigation Warfare**
**CEMA**

**Zenithal Jammer**

**Space EW**
**Ground Control Segment**

# ELT Group Space Heritage & Roadmap
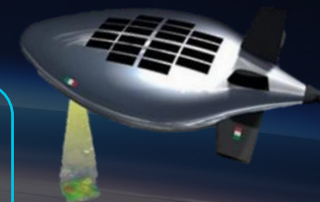## From Ground to Orbit

**Cyber Security**
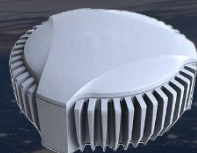
**RF Monitoring** | **LEO Stratosphere**
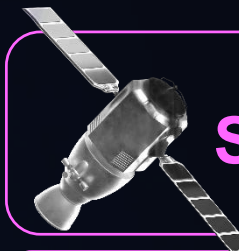
**SCORPIO**

**HAPS**

**Ground Segment**
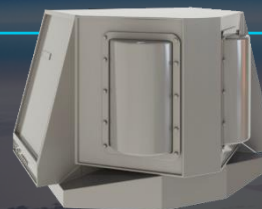
**Satellite link**
**CEMA**

**Navigation Warfare**
**CEMA**

**Zenithal Jammer**

**Space EW**
**Ground Control Segment**

# Why RF Monitoring From Space

- **Everywhere**: Full Earth Coverage with no geographical limitations

- **Every time**: once in orbit Satellite continuously fly (no need to take-off etc.)

- **Un-manned**: no crew, only Ground Segment operators are needed

- **Silent Observation**: no way to understand if and when RF is monitored

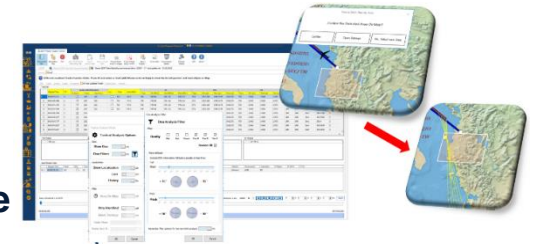- **Resilient**: asset in LEO orbit, difficult to counteract
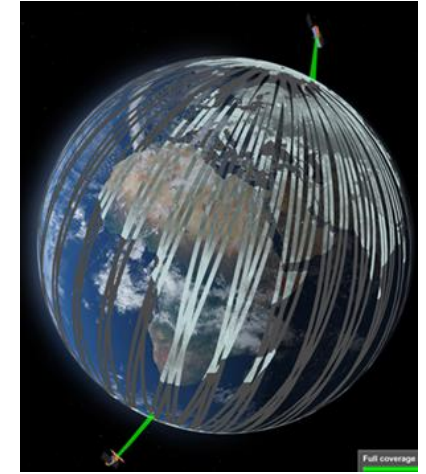
**1) Capture EM signals transmitted from earth**

**2) Transfer data to the Ground Segment**
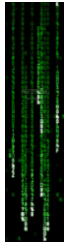
**3) Process Data in the Space Ground Control Segment**

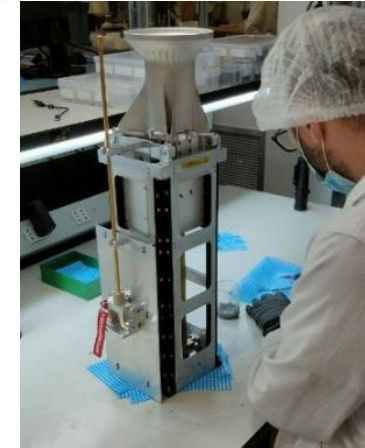**4) Give the info to the EW operators and fed the database/libraries**

# SCORPIO



**S**igint **C**ompact **OR**bital **P**ayload **I**n **O**rbit

15-04-2023

ELT Group
in Space!

DEPLOYMENTS
SES-2  SEON
SECO-2

T+01:17:12

TRANSPORTER-7

SPEED
27628
KM/H

ALTITUDE
518
KM

STAGE 2 TELEMETRY

# SCORPIO

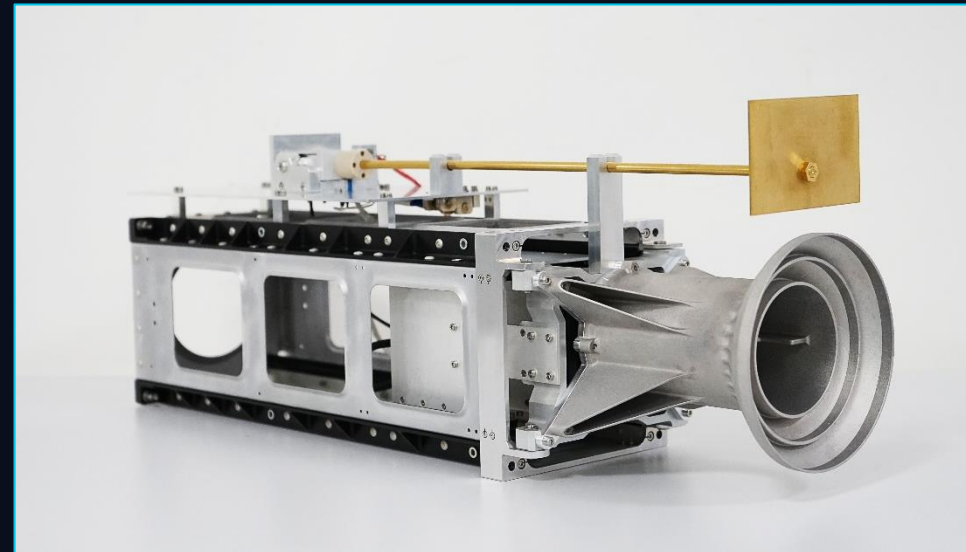**S**igint **C**ompact **OR**bital **P**ayload **I**n **O**rbit

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 ELTGROUP New Tech Lab

CY4 GATE Part of ELT Group

- **Launched** with D-Orbit Satellite and Space-X Transporter 15-04-2023
- **Maritime** and **Ground** surveillance
- **Designed and developed** in **ELT Group**
- **LEO** Orbit
- Current Status: **Operational**

# Key purpose of the mission
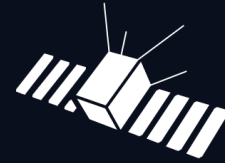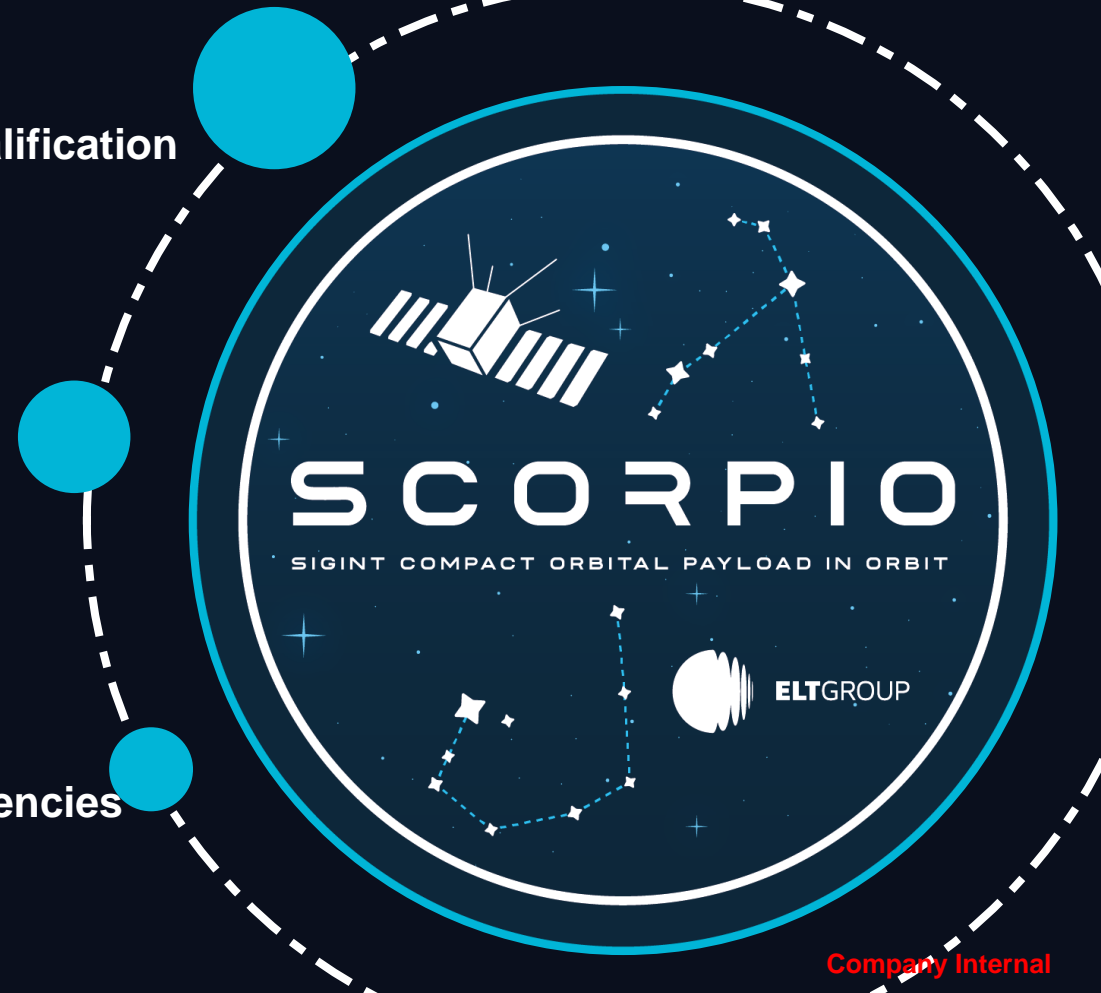## Enlarge ELT EMSO and SIGINT current knowledge to Space EW domain

## SCORPIO

- **Silent Observation**
- **Every where**
- **Every time**
- **Un-manned**

**Space Qualification**

**Organization, Partners**

**Team, Know-how, Competencies**

SCORPIO

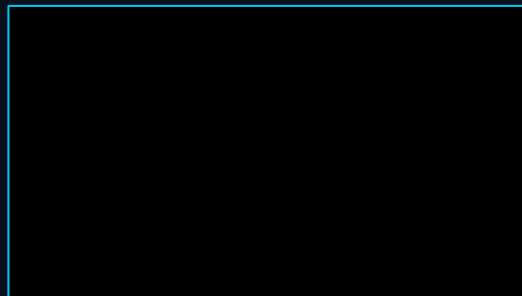SIGINT COMPACT ORBITAL PAYLOAD IN ORBIT

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# Key purpose of the mission
## Enlarge ELT EMSO and SIGINT current knowledge to Space EW domain
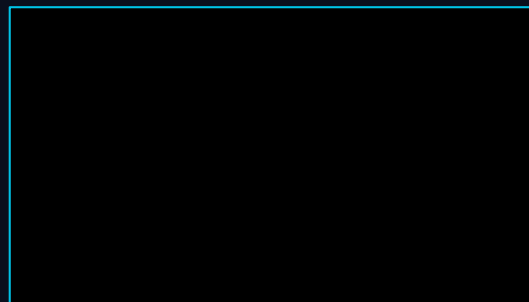
**1**

Capture EM signals transmitted from earth

**2**

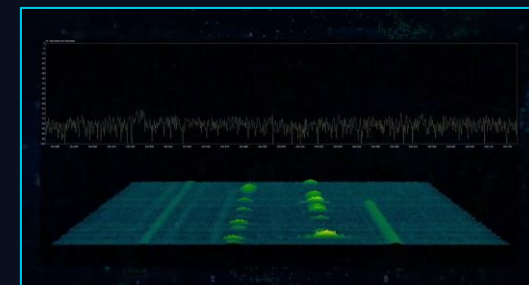Transfer data to the Ground Segment

**3**

Process data in the Space Control Room



**4**

Give the info to the EW operators and fed the SIGINT database/libraries

# Space EW Ground Control Segment
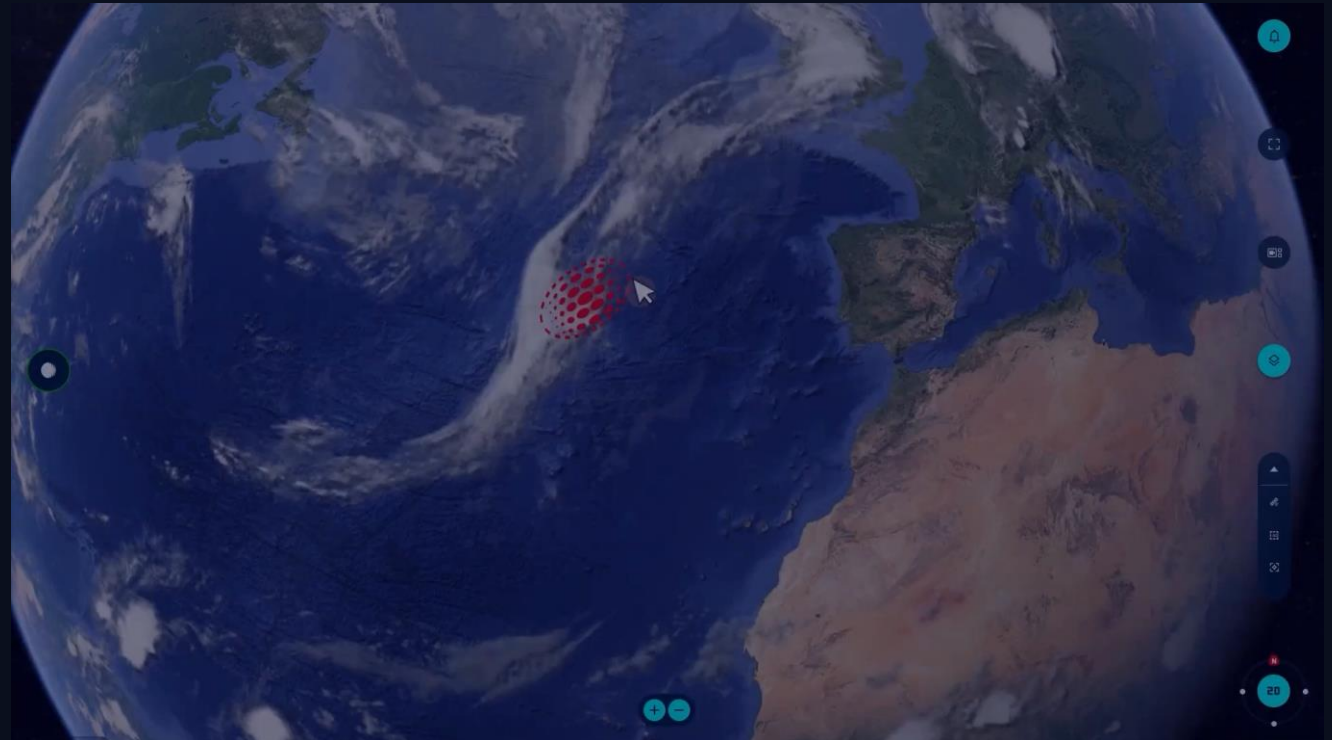## Mission Planning Functionalities

**Tasking of a mission**

- **Select the satellite**
- **Visualize position**
- **Visualize status**
- **Set mission parameters**
- **Data collection**
- **Data transfer**

**Data Analysis**

- **Data selection**
- **Data processing with AI/ML**
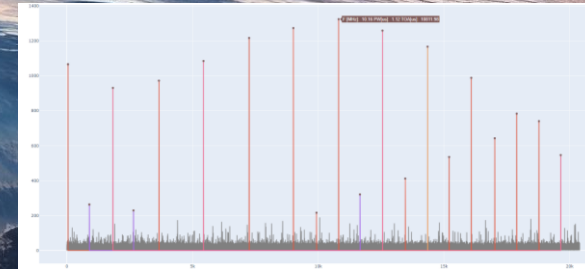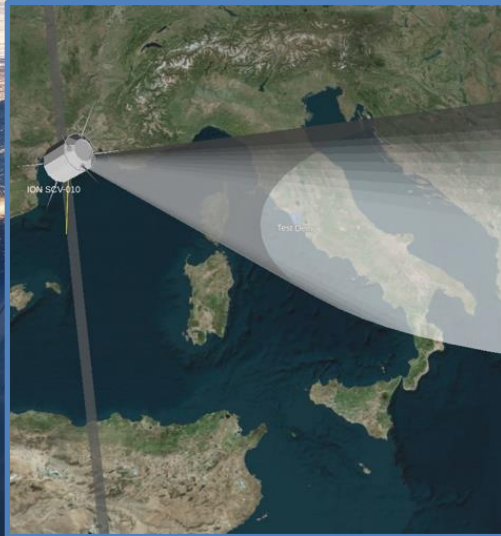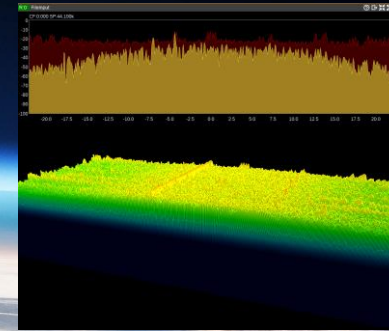- **Automatic Data processing**
- **Data storage**

# SCORPIO Ground Segment Details

**Mission Planning**

**Data Analysis**

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Ready to shape EMSO
in the Space & Cyber
Domains

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