



ELT Group doesn't simply anticipate the future,  
**it builds it.**

WELCOME  
TO SPACE EMSO

WELCOME  
TO SCORPIO



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AFTER AIR, LAND, NAVAL AND CYBER,  
ELT GROUP IS ABOUT TO EMBRACE THE SPACE DOMAIN.

# SPACE: A HIGHLY STRATEGIC ENVIRONMENT

The centrality of the Space environment is rapidly growing: today it has become crucial in the lives of citizens, nations and businesses of all sectors and especially from a defense and security standpoint.

ELT Group is increasing its 70 years of expertise and competitive advantage of knowledge in the EMSO - Electro Magnetic Spectrum Operation - Including the Cyber domains, in order to perform all those functions needed for protection, surveillance and countering threats to and from Space.

## PROTECTING WHAT MATTERS, EVEN FROM SPACE

Competence in **managing EMSO in Space** constitutes a **strategic capability** and a must have technological sovereignty in an environment increasingly crucial for the **civil society defence and security**.

ELT Group have been designing technological solutions to

monitor the earth through the electromagnetic signals to and from Space. These **Space Qualified Technologies** will be vital for observing, monitoring, planning and optimizing the use of EMS for communication and navigation in presence of electromagnetic disturbances.

# ELT GROUP ROADMAP IN SPACE

## INTELLIGENCE AND DEFENCE

Space infrastructures offer the possibility of **new observation and data collection points**. Electromagnetic monitoring activities allow earth observation **expanding defense and security goals**. In this context, ELT Group intelligence and defence capabilities offer innovative SIGINT (SIGnal INTelligence) solutions as satellites that can **intercept and collect EMS data** related to communications and radar signals to and from Space.

The goal is to provide a **situational awareness of all suspicious activities**, for both Defence and general security purposes such as countering smuggling,

terrorism or illegal activities.

**SCORPIO** is the solution dedicated to this mission, which includes a single Sigint Sensor in LEO Orbit toward a roadmap that includes a constellation of Sigint sensors for data collection and surveillance. SCORPIO will provide accurate undetected interception of all type of communication and radar signals transmitted from inaccessible territories. ELT Group portfolio includes also Sigint **solutions from stratosphere platform for tactical and persistent missions**. The Sigint capabilities include **mission planning** and **mission data analysis** with additional features concerning **physical assets control and downlink** throughout a data center.

## ELECTRONIC PROTECTION

ELT Group has already designed a **Zenithal Jammer**, a ground defence system against possible threats from malicious Satellite activities. The Zenithal falls fully within the scope of **electronic defense activities applied to Space** as a Jammer with **advanced**

**integrated system of electronic countermeasures** designed to **identify and react to a wide range of threats** detected from **SAR satellites**.

Furthermore, ELT Group is able to offer integrated **NAVWAR** (Navigation Warfare) solutions by detecting the source of disturbance.

## CYBER THREATS SOLUTIONS IN SPACE

Space environment is also exposed to cyber-attacks aimed to slow down, degrade, alter, disrupt the use of data-satellites or permanently damage their infrastructure and systems with a domino-effect. CY4GATE, part of ELT Group company, has built strong technical knowledge and capabilities to improve the cyber security resilience of the space infrastructure. The mission is to protect complex informational data through a board offering of state-of-the-art and proprietary technology solutions.

**CY4GATE** capabilities are addressed to **guarantee communication Confidentiality, Integrity and Availability (CIA)** by protecting them from eavesdropping, spoofing, interception, corruption, tampering and denial of service. This will make the

**satellite's communications**, furthermore its supply chain, **resilient in hostile operational conditions**. CY4GATE provides architectures for satellite infrastructure, data and link of communications, **cyber secure by design**.

The capability to early detect any attempt to compromise the security of all the segments belonging to space system (i.e. user, ground or space segment) will enable fast, accurate and effective countermeasures to identify, isolate and neutralize the threat. At the same time CY4GATE can augment the cyber protection by offering state-of-the-art and continuously updated **Cyber Active Protection** capabilities, including also **EMSO and CEMA** (Cyber ElectroMagnetic Activities), to take control of the threat for "Soft-kill" neutralization, threat identification and attribution.

## ELT GROUP EXPERTISE AT THE SERVICE OF SPACE DOMAIN

- 70 years' expertise in the field of the Electromagnetic Spectrum as enabling environment for all domains.
- Experience in Space research and satellite construction, thanks to the acquisition of strategic assets with relevant heritage in the Space domain.
- 10 years' expertise in cyber security and cyber intelligence from CY4GATE, part of ELT Group.
- R&D activities self-financed by the company, also supported through participations in R&D's European and Italian military research programs.



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# SHARP

Passive RF Monitoring System on HAPS Platform



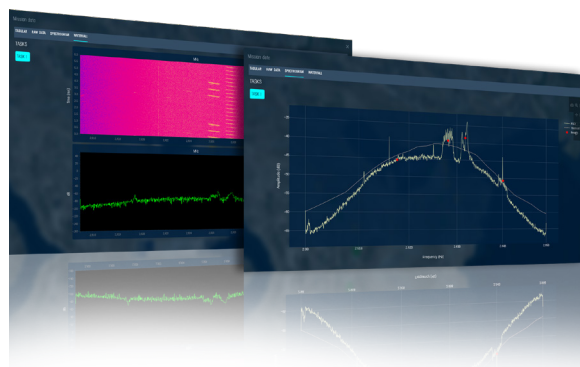
# SHARP

## ↳ Passive RF Monitoring System on HAPS Platform

The SHARP system is designed for persistent passive RF spectrum monitoring, installed on a HAPS (High Altitude Pseudo Satellite) platform. The latter is an unmanned aircraft designed to fly continuously for over 6 months at high altitudes (12-15 km), powered by solar panels. The platform was developed to overcome the limitations of conventional satellites that cannot monitor the same area for extended periods. High Altitude Pseudo Satellites (HAPS) offer significant advantages over traditional airplane-based monitoring solutions, primarily due to their ability to fly for extended periods and at altitudes that ensure extremely high Line of Sight (LOS) of hundreds of Km.

### Operational Features:

- **Persistent Monitoring:** The capability of high-altitude and low-speed flight, combined with electronic warfare equipment, enables continuous monitoring of specific targets for over 6 months
- **Low Observability:** The platform is designed to have a reduced radar signature and ensures silent surveillance thanks to its shape and installed passive systems
- **Mission Versatility:** Equipped with RF monitoring instrumentation, it can be employed for various missions, including interference detection and updating air and maritime traffic awareness



### Technical Capabilities:

- **Geolocation:** The platform can operate in formation with other platforms to achieve accurate real-time emitter geolocation
- **Mission Support:** Includes a planning station that assists the client in determining optimal platform utilization based on mission requirements
- **Data Management:** The payload is equipped with flexible software to adapt to various mission profiles and manage different storage and transmission requirements

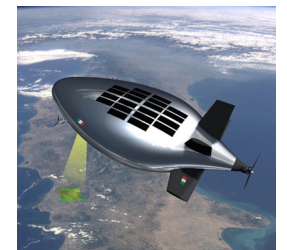


### POD Technical Specifications:

- Power: 150W
- Mass: approximately 10kg
- Volume: 600mm x 150mm x 150mm
- Rx Polarization: Circular
- Coverage:
  - Azimuth: -60° to +60°
  - Elevation: -50° to 0°

The system is designed to operate in low atmospheric pressure and low-temperature conditions typical of the stratospheric environment. Energy efficiency and durability are guaranteed by solar power, enabling prolonged operations without the need for frequent maintenance or refueling.

### Potential Applications





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