COSMO-SkyMed

COSMO-SkyMed is one of the most innovative programmes in the field of Earth observation, funded by the Italian Space Agency (ASI), the Ministry of Defence and the Ministry of Education, University and Scientific Research.

The system is based on a configuration of **multiple satellites equipped with SAR (Synthetic Aperture Radar)** sensors, capable of observing the planet day and night, in all weather conditions.

Conceived for **dual use**, the programme is able to meet both civilian and military needs.

COSMO-SkyMed was developed progressively. Between 2007 and 2010, the four first-generation satellites were launched, two of which are still operational.

Between December 2019 and January 2026, the constellation was further expanded with three second-generation satellites (CSG). A fourth satellite will be launched in 2027.

Designed to ensure operational continuity of the radar observation services provided by the four first-generation satellites, the **Second Generation delivers further improved performance in terms of technology, services and system operational lifetime.**

The new satellites in the constellation represent the state of the art in space-based radar observation in terms of image precision and quality. **These features will enable the development of new applications in areas with growing strategic value.**

The CSG will ensure further improved performance in terms of technology, services, and the system's service life. All these characteristics **will enable the development of new applications in areas of increasing strategic value** such as:

- monitoring of critical infrastructure
- emergency management
- precision agriculture
- maritime safety and coastal control

TELESPAZIO'S ROLE

With its consolidated experience, **Telespazio supports the programme during its most critical phases**, from the development of the entire ground segment of the system to the acquisition and processing of data from the constellation, through its subsidiary e-GEOS.

In particular, Telespazio is responsible for the **design and development of the ground segment and for providing Integrated Logistics and Operations services**, as well as for the **LEOP** (Launch and Early Orbit Phase), **IOT** (In Orbit Test) and O**perational Qualification phases of the satellite.**

The **Fucino Space Centre** hosts the Constellation Control Centre and carries out command and control activities, as well as planning image acquisition requests.

e-GEOS (a Telespazio/ASI company) markets COSMO-SkyMed radar data worldwide. From the **Matera Space Centre**, e-GEOS acquires, processes and distributes COSMO-SkyMed satellite data for civilian applications.

APPLICATIONS

COSMO-SkyMed is the first dual-use satellite constellation **dedicated to environmental and territorial monitoring, security and emergency management.**

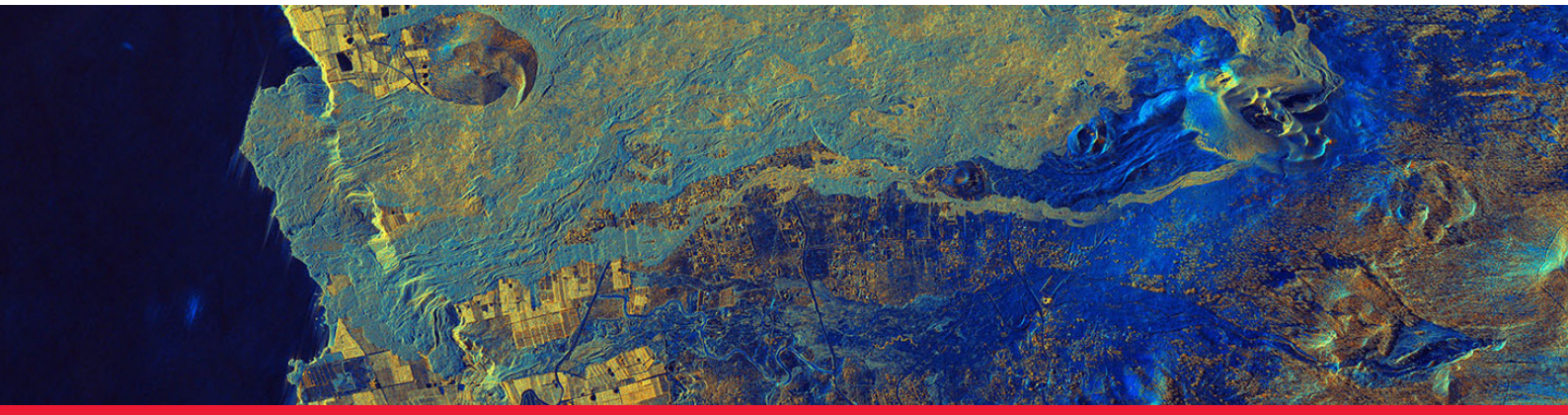
The data collected by COSMO-SkyMed radar satellites for Earth observation make it possible to gather valuable information both to support the daily lives of citizens and to protect and preserve our planet.

THE ROLE OF INDUSTRY

COSMO-SkyMed is the result and expression of the highest-level expertise of the Italian space industry.

THALES ALENIA SPACE: Responsible for the entire CSG programme, including the construction of four satellites.

LEONARDO: Contributes to the programme by supplying Altitude Sensors (A-STR) for satellite orientation, solar panels (PVA) and advanced units that process and distribute electrical power throughout the satellite, maximising its energy efficiency.



SATELLITES FOR SUSTAINABILITY

Thanks to its radar eyes and its ability to monitor crisis areas, COSMO-SkyMed contributes to predicting landslides and floods and to coordinating relief efforts in case of earthquakes or fires.

As a participating mission in the European Copernicus program, COSMO-SkyMed imagery is very important to the European Commission's Emergency Rapid Mapping service, which makes satellite maps of areas affected by a natural emergency or humanitarian crisis available within hours. For istance, COSMO Sky-Med provided data and maps of lava movements during La Palma volcanic eruption in the fall of 2021.