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MEDIA INFORMATION

Fucino, 2 July 2025

MTG-S1 Weather Satellite Launched: Telespazio Manages Orbital Insertion and Testing from Fucino Space Centre

The second geostationary satellite of the Meteosat Third Generation program (MTG-S1) was successfully launched on July 1st from the Cape Canaveral Space Center, in Florida. Telespazio, a joint venture between Leonardo (67%) and Thales (33%), is managing the LEOP (Launch and Early Orbit Phase) operations for the satellite's insertion and final positioning from the Fucino Space Centre, in Italy.

Developed through a partnership between the European Space Agency (ESA) and EUMETSAT - the European Organisation for the Exploitation of Meteorological Satellites - the Meteosat Third Generation program builds on the legacy of its predecessors, which remain operational. The new satellites will ensure the continuity of vital weather data collection for the next twenty years.
MTG-S1 is part of the Meteosat Third Generation program including 6 satellites: 4 imaging satellites built by Thales Alenia Space and 2 sounder satellites built by OHB. This satellite will embark the first European hyperspectral infrared sounder instrument in geostationary orbit.

Telespazio's Role

Telespazio has been involved in the MTG program since its early stages, contributing to the design and management of the ground segment. The company is responsible for both data acquisition and satellite command and control operations. It also provided launch and orbit positioning services to EUMETSAT for MTG-I1 satellite, launched on December 13th, 2022, and is providing these services for MTG-S1, launched yesterday July 1st, 2025. Telespazio will also provide similar services for MTG-I2, which is scheduled for launch in mid-2026.

Preparatory activities for the MTG satellite launches and LEOP operations began seven years ago and have involved more than 40 Telespazio professionals. These teams have been engaged in the design of the ground segment and the development and testing of operational procedures for the LEOP phase.

During this critical phase, engineers will monitor tens of thousands of telemetry parameters to ensure the satellite is functioning correctly. They will also send precise commands to configure onboard systems and guide the satellite into its final geostationary orbit. The orbital transfer will involve carefully timed engine burns to optimize fuel use and extend the satellite's operational lifespan, ensuring long-term weather service delivery.

Starting just seconds after MTG-S1 launch, three dedicated Telespazio teams will work around the clock for 17 days to complete the orbital transfer and finalize the satellite's configuration. To support data acquisition once LEOP is completed, Telespazio has developed and deployed a new

component of the ground segment: the Mission Data Acquisition Facility (MDAF). This system is now operational at the Lario Space Centre (Como), at the Leuk station in Switzerland (operated by partner Signalhorn), and at EUMETSAT headquarters in Darmstadt, Germany.

This infrastructure will enable simultaneous data reception from Lario and Leuk, with real-time processing to correct rain-induced distortions before transmitting the data to Darmstadt, where it will be used to produce final weather data products for users.

Telespazio has also developed and operates the telemetry, tracking, and command system for the MTG satellites, with ground stations located at the Fucino Space Centre and Cheia (Romania), the latter managed by Telespazio's subsidiary, Rartel.

About the MTG Program

The Meteosat Third Generation (MTG) program has an expected operational life of about 20 years
The program features four imaging and two atmospheric sounder satellites. Each new generation has marked a major step forward in weather nowcasting. With the first Meteosat satellites, Earth images were updated every 30 minutes, compared to the 15-minute refresh rate of the current generation.. With MTG Imager, images will be updated every 10 minutes globally and every 2 minutes and 30 seconds for Europe. Meteorologists are therefore eagerly awaiting these new satellites set to revolutionize modern weather forecasting and significantly improve accuracy; the imager satellite will also implement lightning detectors and the sounder instruments will also have the ability to map the atmosphere in 3D. The main objective of the MTG sounder mission is to enhance Numerical Weather Prediction capabilities at regional and global scales.

The MTG-I series features the Flexible Combined Imager (FCI) and the Lightning Imager (LI), also known as the "fulminometer," developed by Leonardo in its Campi Bisenzio site, near Florence. This unique instrument can detect atmospheric lightning from over 36,000 kilometers away, day or night, regardless of lighting conditions—making it a world-first in terms of performance, particularly in Europe.
The MTG-S satellites are equipped with the Infrared Sounder (IRS), which gathers temperature and humidity data based on latitude, longitude, and altitude, as well as the Copernicus Sentinel-4 instrument, designed to monitor air quality from geostationary orbit.
Leonardo also contributes to the MTG program by supplying A-STR star trackers for satellite orientation, electronic boards for payload computers and photovoltaic panels (PVA) for all six satellites.

The program's overarching goal is to significantly enhance the ability to observe weather phenomena and improve forecasting accuracy, especially in the area of "nowcasting"—the near real-time detection and prediction of fast-evolving and potentially hazardous weather events. Early identification of such phenomena will help reduce response times for public alerts and civil protection efforts, ultimately minimizing potential damage and risks to people and property.

Since the launch of the very first Meteosat satellite in 1977, the 3 generations of Meteosat satellites have been built under Thales Alenia Space's prime contractorship. The joint venture between Thales (67%) and Leonardo (33%), as the program's overall prime contractor, is also in charge of the development, assembly, integration and testing of the primary payload featuring an interferometer and an infrared detection subsystem.