IAF EARTH OBSERVATION SYMPOSIUM (B1)
Earth Observation Systems (2)

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METEOSAT THIRD GENERATION (MTG) SPACE SEGMENT DEVELOPMENT PROGRESS INCLUDING MTG-I1 LAUNCH AND PERFORMANCE

Abstract

The Meteosat Third Generation (MTG) Programme is being realised through the well-established and successful Cooperation between EUMETSAT and ESA. It will ensure the future continuity with, and enhancement of, operational meteorological (and climate) data from Geostationary Orbit for the next 20 years.

The MTG-I and MTG-S will bring to the meteorological community a series of satellites for continuous high spatial, spectral and temporal resolution observations and geophysical parameters of the Earth based on sensors from the geo-stationary orbit. In particular, the imagery mission MTG-I will bring an improved continuation of the actual imagery mission with the new Flexible Combined Imager (FCI). Additional payloads are composed of the Lightning Imager (LI) for lightning detection for early convection detection, the Data Collection Dissemination and Search Rescue Missions. The MTG-S will bring unprecedented features to the end users with a high spectral resolution (0.625 cm-1) and a high spatial resolution (4 km footprints) of the IRS instrument. The IRS mission will provide the capability to determine the altitude from which emissions emanate, providing a capability for vertical profiling of the atmosphere with respect to composition and temperature (water vapour tracking profiling, and temperature profiling), thus allowing vertical wind vectors measurement. The IRS will support nowcasting and very-short range forecasting (VSRF), 3D fields of wind, temperature and humidity, and hence moisture convergence and convective instability, to help improve warnings of location and intensity of convective storms. Moreover, thanks to the GMES Sentinel-4 (S4) sounding mission embarked on MTG-S, the mission will achieve through this UVN Instrument with three spectral bands (UV: 305 - 400 nm; VIS: 400 - 500 nm, NIR: 750 - 775 nm) with spatial sampling distance around 8 km and a spectral resolution 0.5 nm for VIS and 0.12 nm for NIR bands. The combination of the IRS and the UVN missions can support air quality and chemistry missions for the atmospheric science from geostationary.

The first MTG-I1 has been launched on December 13th, 2022. MTG-S1 is now integrated and is undergoing the final test campaign in advance of a scheduled launch in late 2024.

This paper will provide an overview of the MTG satellites series features. It will also address the launch of MTG-I1 and its results. It will also address the status of the on-ground characterisation of MTG-S1 and its so far predicted in-orbit end of life performances with respect to the associated mission requirements.