



The Copernicus Sentinel-4 UVN mission: status and ongoing activities at EUMETSAT

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The Copernicus Sentinel-4/UVN mission is Europe's contribution to the virtual constellation of air quality related sensors in geostationary orbit. It is planned to be launched in 2025 on board EUMETSAT's Meteosat Third Generation – Sounder (MTG-S) platform and complement the Korean GEMS and American TEMPO instruments which are already in orbit over Asia and North America, respectively.

Following the space segment development and in-orbit commissioning under ESA responsibility, EUMETSAT will be responsible for operations, data processing and continuous calibration/validation of the Copernicus Sentinel-4 instruments and the derived operational products. The state-of-the-art UVN sounder onboard the MTG-S satellite covers the UV to NIR spectral range to provide hourly high spatial resolution measurements of several trace gas and aerosol concentrations and vertical profiles, crucial for monitoring atmospheric pollution. Other instruments (e.g., the Infrared Sounder, Lightning Imager and Flexible Combined Imager) onboard the MTG platforms will provide complementary information about temperature, clouds, and atmospheric constituents like water vapour.

In this presentation, we will cover the progress achieved at EUMETSAT for the Sentinel-4 UVN mission with respect to the readiness of the ground segment including the in-orbit calibration key data (CKD) generation. We will put forward the in-flight measurement sequences and manoeuvres that are meant to secure the quality of the generated L1 and L2 data. We will show the results of the system validation test performed with the EUMETSAT ground segment and Telespazio after the successful mechanical integration of the instrument onto the platform in September 2023. We will also present the ongoing preparation and planned activities concerning the development of tools and facilities for monitoring and operational validation.