

sentinel-5 precursor

→ GMES LOW EARTH ORBIT ATMOSPHERE MISSION





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MISSION OBJECTIVES

The Sentinel-5 precursor is a UV-VIS-NIR-SWIR spectrometer payload derived through tailoring of Sentinel-5 specifications, e.g., priority to spectral resolution, coverage, spatial sampling distance, signal-to-noise ratio, and only high priority bands. It will bridge the gap between Envisat/EOS Aura and Sentinel-5 (the latter expected to be launched in 2020).

It will provide measurements of elements of atmospheric chemistry at high temporal and spatial resolution. Also, it will increase the frequency of cloud-free observations required for the study of troposphere variability. In particular the Sentinel-5 Precursor mission is expected to provide measurements of ozone, NO_2 , SO_2 , CO and aerosol.

MISSION PROFILE

- > Launch: 2014
- > Launcher: Compatible with VEGA and Rockot category of launchers.

SATELLITE PLATFORM

- > dedicated platform in a polar orbit
- > 540 kg (approx)
- > 1 kW avg (approx)

SATELLITE PAYLOAD

- > Type: UV-VIS-NIR-SWIR push-broom grating spectrometer called TROPOMI
- > UVN module of TROPOMI provided as a national contribution by the Netherlands
- > Number of Channels: 5
- > Spectral Range: 270-495 nm, 710-775 nm, 2314-2382 nm
- > Spectral Resolution: 0.25-1.1 nm
- > Observation Mode: Nadir, global daily coverage, ground pixel 7x7 km²
- > Radiometric Accuracy: ~ 2%
- > Mass: 170 kg
- > Power: 180 W average
- > Data: 92 Gbits/orbit
- > Orbit: 824 km, 13:30 h LTAN