Geophysical Research Abstracts
Vol. 15, EGU2013-7947, 2013
EGU General Assembly 2013

Sentinel-5 Precursor: Global Monitoring of Atmospheric Trace Gases & Aerosols

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ESA's Sentinel 5 Precursor (S5P) Mission will form part of the Space Component under the Global Monitoring for Environment and Security (GMES) initiative. It represents a preparatory project for the GMES atmospheric missions that comprise both a geo-stationary (Sentinel-4 / part of MTG-S payload) and a polar orbiting (Sentinel-5 / MetOp Second Generation) component. In view of the planned launch date of around 2020 for the first S-4 MTG-S and MetOp-SG spacecrafts, respectively, S5P (launch: mid 2015) shall minimize gaps in the availability of global atmospheric data products as provided by its predecessor missions SCIAMACHY (Envisat) and OMI (AURA).
The satellite's single payload instrument, TROPOMI (TROPOspheric Monitoring Instrument), is jointly developed by The Netherlands and ESA. Covering spectral channels located in the UV, visible, near- and short-wave infrared it will measure various key species including stratospheric ozone, as well as NO_2, SO_2, CO, CH4, CH_2O and aerosols, specifically in the lower Troposphere.
The envisaged formation flying with NASA's Suomi NPP satellite will allow use of high spatial resolution imager data for enhanced cloud clearing of the observational data specifically in the short-wave infrared range.

An outline of the Sentinel-5P mission objectives will be given. The status of development activities, covering Spacecraft and the Ground Segment will be presented.