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ESA's Sentinel-5 Precursor Mission: a GMES Mission for Global Observations of Atmospheric Composition

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ESA's (European Space Agency's) Sentinel-5 Precursor (S-5p) will be a polar orbiting satellite with the objective to provide information and services on air quality, climate and the ozone layer following the launch in the first half 2015. S-5p will form part of the space component of the Global Monitoring of the Environment and Security (GMES) programme. The payload of the mission is the TROPOspheric Monitoring Instrument (TROPOMI) which is jointly developed by The Netherlands and ESA. It will measure key atmospheric constituents including ozone, NO_2, SO_2, CO, CH4, CH_2O and aerosol properties. The TROPOMI concept is based on heritage from both the Ozone Monitoring Instrument (OMI) and the SCanning Imaging Absorption spectroMeter for Atmospheric CartograpHY (SCIAMACHY). S-5p will continue the existing high spatial resolution data record of OMI, as well as the short-wave infrared measurements of SCIAMACHY. The S5 P mission represents a precursor of the polar orbiting Sentinel 5 /MetOp Second Generation element to be launched towards 2020. The planned formation flying with the NPP satellite will enable important synergies, including the use of high spatial resolution imager data for enhanced cloud clearing of the observational data. The availability of MetOp, embarking GOME-2 and IASI will provide complementary information on diurnal variability.