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## *The GMES Sentinel-5 mission for operational atmospheric monitoring: status and developments*

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### **The GMES Sentinel-5 mission for operational atmospheric monitoring: Status and Developments**

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Sentinel-5 is an atmospheric monitoring mission planned in the frame of the joint EU/ESA initiative Global Monitoring for Environment and Security (GMES). The objective of the mission, planned to be launched in 2020, is the operational monitoring of trace gas concentrations for atmospheric chemistry and climate applications. It will provide accurate measurements of key atmospheric constituents such as ozone, nitrogen dioxide, sulfur dioxide, carbon monoxide, methane, formaldehyde and aerosol properties. The space segment will be implemented as an imaging spectrometer to be flown on EUMETSAT's MetOp Second Generation satellites. From a sun-synchronous LEO orbit Sentinel-5 measurements will complement the Sentinel-4 GEO data over Europe and provide a daily global coverage at an unprecedented spatial resolution of 7x7 km at nadir. The push-broom grating spectrometer will acquire continuous spectra of Earthshine radiance covering the UV (270-370 nm), VIS (370-500 nm), NIR (685-775 nm) and SWIR (1590-1675 nm; 2305-2385 nm) spectral regions, with spectral resolutions ranging from 0.25 nm to 1 nm. The presentation will report on the outcome of the technical feasibility (phase-A) studies carried out by two industrial consortia, supported by the European Space Agency (ESA). The driving requirements, technological challenges and proposed solutions will be discussed. The general concept for operation and calibration as well as ongoing pre-development activities, aiming at mitigating development risks, will be presented.