

EARTH OBSERVATION SYMPOSIUM (B1)  
Earth Observation Data Management Systems (4)

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## SENTINEL-1 PDGS, THE GMES GROUND SYSTEM FOR SENTINEL 1 SATELLITES OPERATION

**Abstract**

The European Space Agency (ESA) is completing the development of Sentinel-1, the first GMES mission based on two C-band radar satellites designed to provide continuity of SAR data for environment monitoring and operational applications of sea ice, maritime and land monitoring with the first Sentinel-1 satellite launch scheduled during autumn 2013. ESA has selected Astrium to develop and deploy the Sentinel-1 Payload Data Ground Segment ( S-1 PDGS) to task the Sentinel 1 satellites and to process the instrument data received from these satellites into suitable products to meet the required quality and timeliness criteria .

To face this technical challenge and ensure on-time delivery of the Sentinel-1 PDGS ahead of the first satellite launch, ESA and Astrium have collaborated closely to monitor the development, meet the technical performances, check the operational qualification and deploy the system over the various operation centres. Sentinel-1 PDGS is the precursor ground system which will pave the way to the following PDGS currently under development to further operate the Sentinel 2 and Sentinel 3 satellites. The success is due to the fruitful cooperation of ESA and Astrium: ESA with its vast experience in SAR satellites (ERS, ENVISAT) and Astrium, as manufacturer of space and ground infrastructures for earth observation. Astrium will fully support ESA during the first months of Sentinel-1 operation.

The GMES concept of operations allows to incorporate National capabilities through Collaborative Centres and Local ground stations. Astrium, in full coordination with ESA, is ready to offer turn-key capability centres and bring its expertise to develop and integrate collaborative centres with GMES partners.

This paper presents the architecture and performances and operations of the Sentinel-1 PDGS from design to site deployment and readiness for operation of the Sentinel-1 mission.