

sentinel-1

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→ RADAR VISION FOR COPERNICUS

Mission status

- The Sentinel-1A routine operations are on-going
- Sentinel-1B has been launched on 25 April 2016 – see next page
- Sentinel-1A data can be accessed from: <https://sentinels.copernicus.eu>
- The observation scenario supports the systematic coverage of a first set of Copernicus Services areas of interest, of European land and coastal waters, of global tectonic/volcanic areas, as well as of other specific targets worldwide for various applications. The observation plan also includes regular mapping of all land areas worldwide. An overview of the observation scenario is available at: <https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-1/observation-scenario>
- The detailed observation plan in the form of instrument acquisition segments is published on Sentinel Online at: <https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-1/observation-scenario/acquisition-segments>
- The operational use of Sentinel-1A data by the Copernicus Marine Environment Monitoring Service for sea-ice and iceberg monitoring activities is on-going
- The European Maritime Safety Agency (EMSA) is gradually introducing in the CleanSeaNet service the use of Sentinel-1 imagery in quasi-real time. Preliminary operations with first EMSA local stations are on-going
- Sentinel-1A responded to the activations from the International Charter on Space and Major Disasters for floods in Argentina and in Iran, as well as for the major earthquakes that occurred in Japan and Ecuador - the latter being also the object of an activation from the Copernicus Emergency Management Service
- The Sentinel-1A spacecraft is in a stable state, operating in Nominal Mission Mode (NMM). The Flight Operations Segment (FOS) ensuring the monitoring, control and commanding of the satellite is operating nominally. Orbit control manoeuvres are performed once a week
- The Sentinel-1A – Alphasat TDP-1 inter-orbit link characterisation phase is on-going
- X-Band data acquisitions are routinely performed over Matera, Svalbard and Maspalomas X-band core stations. The acquired data are circulated within the Payload Data Ground Segment (PDGS), systematically processed to Level-0 and Level-1 products and archived
- Wave Mode data are regularly acquired over open oceans, systematically processed to Level-2 OCN products and made available. Sentinel-1 IW and EW Level-2 OCN products over regional ocean areas are available on the Scientific Data Hub. The operational qualification of Level-2 OCN products is on-going (geophysical validation of the Radial Surface Velocity component)
- Operations are performed regularly at the Processing and Archiving Centres (DLR-PAC and UK-PAC). All other PDGS operational services (i.e. Mission Performance, Precise Orbit Determination, Wide Area Network) are operating nominally
- Since 21 July 2015, 100% of the IW and SM data acquired over land are systematically produced to level 1 SLC. More information at: <https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-1/production-scenario>
- By 21 April, a total of 31,031 users have self-registered on the Sentinels Scientific Data Hub; 4,084,768 product download have been made by users, corresponding to 4.79 PB of data. At the time of publishing this report, 501,000 Sentinel-1A products are available on-line for download, representing 635 TB of data. Statistics of last 24 hours are available in real time at the Data Hub home page (<https://scihub.copernicus.eu>).
- The overall operations mission performance is nominal

Outlook

- Continuation of Sentinel-1A routine mission operations

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Sentinel-1B Launch and Early Orbit Phase (LEOP)

- Sentinel-1B was launched on 25 April 2016 from Kourou, French Guiana
- The Soyuz rocket lift-off took place at 21:02 UTC, the separation of Sentinel-1B from the launcher occurred at 21:25 UTC
- The first telemetry was then acquired at Svalbard at 21:27 UTC
- At the time of finalising this report (27 April):
 - The satellite is in nominal safe state
 - All deployments have been successfully performed, i.e. the SAR antenna and the solar panels are in deployed configuration
 - The satellite reached the “power positive state” after the deployment of the first solar array
 - The various sub-systems of the platform have been activated and are in nominal state
 - The SAR payload has not been activated yet
- First estimation of the duration of the Sentinel-1B reference orbit acquisition is 40 days. This estimate will be refined in the coming days, in particular after having further analysed the orbital manoeuvre strategy and characterised the propulsion sub-system
- The first X-band acquisition took place on 27 April at 04:56 UTC at the Matera station, housekeeping telemetry (HKTM) and GPS data were successfully acquired by the PDGS
- HKTM data were nominally sent to the FOS and the FOS successfully ingested them
- GPS data were provided to the Precise Orbit Determination (POD) and the first orbit product was generated by the POD.

Outlook

- Completion of Sentinel-1B LEOP
- Start of Sentinel-1B Commissioning Phase

