

sentinel-1

→ RADAR VISION FOR COPERNICUS

Mission Status Report 207

Reference Period: 22 May 2018 – 28 May 2018

Mission status

- The Sentinel-1 Yearly Mission Review took place on 24 May 2018, at ESA-ESRIN. The overall mission is in a very good shape, and both satellites demonstrate a good health. The occurrence of satellite anomalies and mission unavailability periods has further decreased over the past months. A major increase of the Sentinel-1 operations capacity has been achieved during the past year with the smooth integration of the EDRS service in operations, and a series of improvements were performed (e.g. systematic production of L2 OCN products from IW/EW/SM modes). Substantial improvements on the data quality have been achieved (e.g. provision of de-noising information), and will be pursued. Remaining system issues are being addressed, in particular the Level 2 OCN RVL product qualification. The Copernicus operational services have expressed satisfaction on the routine use of Sentinel-1 data. Data and user access statistics, as well as the numerous exploitation activities based on Sentinel-1 data, confirm the great user uptake in various thematic application and scientific fields.
- The Sentinel-1A and Sentinel-1B routine operations are on-going
- The Sentinel-1 observation scenario supports the systematic coverage of Copernicus Services areas of interest, of European land and coastal waters, of global tectonic/volcanic areas, as well as of other areas worldwide for various applications. The observation plan also includes a regular mapping of all land areas worldwide.
- World maps providing a high level description of the Sentinel-1 constellation observation scenario, in terms of SAR modes, polarisation, observation geometry, revisit and coverage frequency are available at: <https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-1/observation-scenario>
- The detailed observation plan in the form of instrument acquisition segments, for both Sentinel-1A and Sentinel-1B is published at: <https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-1/observation-scenario/acquisition-segments>
- The operational use of Sentinel-1 data by the Copernicus Marine Environment Monitoring Service (CMEMS) for sea-ice and iceberg monitoring activities is on-going
- The European Maritime Safety Agency (EMSA) operationally uses Sentinel-1 imagery in quasi-real time in the CleanSeaNet services; operations with EMSA service providers local stations are on-going.
- **Specific planning was made to support the activation EMSR286 from the Copernicus Emergency Management Service related to monitoring the risk of failure of the Ituango dam in Colombia**
- **Specific actions (fast delivery of already planned acquisitions) were implemented to support the activation EMSR287 from CEMS related to floods in Saxony, Germany**
- **Due to a planning uplink issue, on 22 May 2018 Sentinel-1A was unavailable from 16:52 UTC to 19:00 UTC and Sentinel-1B from 17:37 UTC to 18:22 UTC**
- Both Sentinel-1A and -1B spacecraft are in a stable state, operating in Nominal Mission Mode (NMM). The Flight Operations Segment (FOS) ensuring the monitoring, control and commanding of the satellites is operating nominally. Orbit control manoeuvres are performed once a week
- The use of the EDRS-A service by Sentinel-1A and -1B is on-going as part of the routine operations
- 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 Data Hubs. The operational qualification of the Level-2 the OCN Radial Surface Velocity (RVL) component is on-going
- 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
- **By 24th May 2018, a total of 153,443 users have self-registered on the Sentinels Scientific Data Hub; 14.6 million Sentinel-1 product download have been made by users, corresponding to 19 PB of data. 2.6 million Sentinel-1 products are available on-line for download, representing about 4 PB of data. Statistics of last 24 hours are available in real time at the Open Data Hub home page: <https://scihub.copernicus.eu>**

Outlook

- Continuation of Sentinel-1 constellation routine operations

