



Mission Status Report 387

Reference Period: 21 December 2021 – 3 January 2022

Mission status

sentinel-1

→ RADAR VISION FOR COPERNICUS

- The Copernicus Sentinel-1A routine operations are on-going.
- A major anomaly on the Sentinel-1B satellite occurred on 23 December 2021, see: https://sentinels.copernicus.eu/web/sentinel/-/copernicus-sentinel-1b-anomaly-update-1
 Strong efforts have been and are still being deployed by the ESA and industry teams to analyse the issue and reactivate the satellite operations. Updated information will be published on the Sentinel Online news.
- Despite the difficult situation in Europe due to the COVID-19, efforts are being made to ensure the continuity of the Sentinel-1 mission operations
- The Copernicus 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 aregular 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
- Sentinel-1 imagery (from regular observations part of the baseline plan) was used for the activation EMSR556 from the Copernicus Emergency Management Service (CEMS) related to major floods due to the super Typhoon Rai, Philippines. Here is an example of flood map based on a Sentinel-1 acquisition of 19 Dec 2021:
 - https://emergency.copernicus.eu/mapping/system/files/components/EMSR556_AOI01_DEL_PRODUC_T_r1_RTP03_v1.jpg
- 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 satellites is operating
 nominally. Orbit control manoeuvres are performed once a week
- Sentinel-1A was unavailable between 24/12/2021 19:32 UTC and 25/12/2021 12:08 UTC, due to an
 onboard software anomaly. No SAR data were acquired during this period. Data acquisitions
 taking place indicatively within 2 hours before this period may have been affected.
- The use of the EDRS-A service by Sentinel-1A and -1B is on-going as part of the routineoperations
- Ground Segment operations have continued smoothly as part of the on-going Payload Data Ground Segment (PDGS) service operations, the transfer to the cloud has been finalised for all production related activities and data flows were modified to use public internet
- Sentinel-1 production is successfully performed on the cloud since 23 February 2021 in line with the new ground segment architecture and interfaces. The legacy PDGS PAC and PDMC centres have been decommissioned end of March 2021
- X-Band data acquisitions are routinely performed over Matera, Svalbard, Maspalomas and Neustrelitz X-band core stations. The acquired data are circulated within the PDGS, systematicallyprocessed 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 operations of the systematic generation and distribution of Sentinel-1 level-2 OCN products derived from IW, EW and SM modes over seas at global level is on-going since 15 November 2017 (relevant for the Wind component OWI). The operational qualification of the Level-2 the OCN Radial Surface Velocity (RVL) component is on-going.
- Updates of the user and product statistics below will be provided in a future version of this report By 9 December 2021, a total of 555,387 users have self-registered on the Sentinels OpenAccess data Hub;
 37 million Sentinel-1 product download have been made by users, representing 45 PB of data. 7.4 million
 Sentinel-1 products are available on-line for download, representing 11.9 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-1A routine operations
- · Reactivation of the Sentinel-1B routine operations

