

Mission Status Report 394

Reference Period: 15 February 2022 – 21 February 2022

sentinel-1

→ RADAR VISION FOR COPERNICUS

Mission status

- The Copernicus Sentinel-1A routine operations are on-going.
- **A major anomaly on the Sentinel-1B satellite occurred on 23 December 2021, the latest news has been published at: <https://sentinels.copernicus.eu/web/sentinel/-/copernicus-sentinel-1b-anomaly-4th-update>**
Detailed investigations are on-going to further analyse the issue, understand the root cause, and possibly identify solutions to reactivate the satellite operations. This critical anomaly is related to a power sub-system unit; the satellite is however under control, regular orbit control manoeuvres are routinely performed. Updated information will be published on the Sentinel Online news.
- 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 a regular mapping of all land areas worldwide. This is based on a constellation of 2 satellites, actions are currently on-going to review the Sentinel-1A observation scenario in order, to some extent, to fill some gaps created by the current unavailability of Sentinel-1B.
- 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>
- **Specific Sentinel-1A observations were planned and actions performed (NRT data provision) for the call 864 on 16 February 2022 from the International Charter Space and Major Disasters related to floods in Brazil**
- **Specific Sentinel-1A observations were planned to support the monitoring over ocean of the tropical cyclones 05P and Emnati (both near Madagascar)**
- 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
- The use of the EDRS-A service by Sentinel-1A is on-going as part of the routine operations
- 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
- 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, 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 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.
- **By 17 February 2022, a total of 576,519 users have self-registered on the Sentinels OpenAccess data Hub; 38.2 million Sentinel-1 product download have been made by users, representing 46.9 PB of data. 7.5 million Sentinel-1 products are available on-line for download, representing 12.1 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
- Sentinel-1B anomaly investigations

Report prepared by the ESA Sentinel-1 Team

