



## Mission Status Report 407

Reference Period: 31 May 2022 - 13 June 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 on 22 April 2022 at: <a href="https://sentinels.copernicus.eu/web/sentinel/-/copernicus-sentinel-1b-anomaly-6th-update/1.1">https://sentinels.copernicus.eu/web/sentinel/-/copernicus-sentinel-1b-anomaly-6th-update/1.1</a>
  - The recent recovery attempts have not been successful; the investigations by the Anomaly Review Board have been concluded. A summary report will be published in the coming days.
- 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 still on-going to adjust the Sentinel-1A observation scenario in order, to some extent, to fill some gaps created by the current unavailability of Sentinel-1B. It should be noted that Sentinel-1A was however already operated close to its maximum capacity.
- 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 Sentinel-1A instrument acquisition segments is published at: https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-1/observation-scenario/acquisition-segments
- Specific Sentinel-1A observations were planned and/or actions performed (NRT data provision / product notification for existing planned acquisitions) in response to the following calls from the International Charter Space and Major Disasters:
  - Call 872 on 4 June 2022, related to floods in Gambia. Here is an example of oil spill detection map based on Sentinel-1A data acquired on 29 May 2022: <a href="https://disasterscharter.org/image/journal/article.jpg?img\_id=12114678&t=1655304628064">https://disasterscharter.org/image/journal/article.jpg?img\_id=12114678&t=1655304628064</a>
  - Call 873 on 6 June 2022, related to fires in Afghanistan
  - Call 874 on 13 June 2022, related to volcanic eruptions in the Philippines
- 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, 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.
- Updated user / product statistics will be provided in the next report
   By 2 June 2022, a total of 623,319 users have self-registered on the Sentinels OpenAccess data Hub; 39 million Sentinel-1 product download have been made by users, representing 48 PB of data. 7.8 million Sentinel-1 products are available on-line for download, representing 12.5 PB of data. Statistics of last 24 hours are available in real time at the Open Data Hub home page: <a href="https://scihub.copernicus.eu">https://scihub.copernicus.eu</a>

## Outlook

Continuation of Sentinel-1A routine operations

