

Mission Status Report 415

Reference Period: 11 October 2022 – 24 October 2022

Mission status

sentinel-1

→ RADAR VISION FOR COPERNICUS

- The Copernicus Sentinel-1A routine operations are on-going.
- The end of mission of the Copernicus Sentinel-1B satellite has been declared by ESA and the European Commission. The full archive of Sentinel-1B data is maintained and is accessible to users. See details at:
 - https://www.esa.int/Applications/Observing_the_Earth/Copernicus/Sentinel-1/Mission_ends_for_Copernicus_Sentinel-1B_satellite
 - <https://www.copernicus.eu/en/news/news/mission-ends-copernicus-sentinel-1b-satellite>
 - <https://sentinels.copernicus.eu/web/sentinel/-/end-of-mission-of-the-copernicus-sentinel-1b-satellite/1.4>
- **Specific Sentinel-1A observations were planned and/or actions performed (product notification for existing planned acquisitions) in response to the following calls from the International Charter Space and Major Disasters:**
 - Call 905 on 11/10/2022, related to floods in Venezuela
 - Call 906 on 13/10/2022, related to hurricane Julia in Honduras
 - Call 907 on 19/10/2022, related again to tropical storm Noru in Thailand
 - Call 908 on 20/10/2022, related to floods in Chad
- **Sentinel-1A observations were used in the frame of the rapid mapping activation EMSR637 from the Copernicus Emergency Management Service, related to floods in Australia.**
See an example of flood map based on Sentinel-1A data at:
https://emergency.copernicus.eu/mapping/system/files/components/EMSR637_AOI16_DEL_PRODUCT_r1_RTP01_v1.jpg
- 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>
- 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.
- **Collision Avoidance Manoeuvres were executed on Sentinel-1A to reduce the risk of collision with an Iridium 33 fragmentation debris (1997), potentially occurring on 18/10/2022 at 15:02 UTC.**
The time of closest approach passed without incident.
- **A partial loss of Sentinel-1A data was experienced between 16:00 UTC on 14/10/2022 and 18:00 UTC on 15/10/2022 as a result of the interruption of data download links through the European Data Relay Satellite System (EDRS), implemented as a safety measure following a problem encountered on the satellite platform.**
A new observation plan was prepared, temporarily featuring some reduction of the observation scenario between 15/10/2022 19:38 UTC and 21/10/2022 02:00 UTC.
- 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 20/10/2022, a total of 671,775 users have self-registered on the Sentinels OpenAccess data Hub; 40.6 million Sentinel-1 product download have been made by users, representing 50.5 PB of data. Nearly 8 million Sentinel-1 products are available on-line for download, representing 12.9 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
- Preparation of Sentinel-1B disposal plan

