

sentinel-1

→ RADAR VISION FOR COPERNICUS

Mission Status Report 205

Reference Period: 8th May 2018 – 15th May 2018

Mission status

- 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.
- **The SeaSAR workshop took place from 7 to 10 May at ESA-ESRIN. Excellent results based on Sentinel-1 data exploitation were shown in the domain of SAR oceanography at large, for applications related to sea-ice, sea state (wind, wave), maritime surveillance (target detection, oil spill monitoring, etc.). Presentations will be published online [here](#).**
- Further specific actions were made to support the activation [EMSR280](#) from the Copernicus Emergency Management Service related to floods in Sweden
- Specific actions were made to support the activation [EMSR283](#) from the Copernicus Emergency Management Service related to floods in Norway
- As mentioned in the previous report, following the eruption of the Kileaua volcano in Hawaii and the associated earthquakes, the Sentinel-1 observation plan has been amended to allow interferometry at 6 days in ascending and descending geometry, utilising both satellites. See [here](#) an example of result exploiting this revisit frequency.
- 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
- **Sentinel-1B was unavailable on 13 May 2018 from 11:29 to 13:08 UTC. No SAR observations took place during this period. Data takes few hours before this period may have been affected as well.**
- 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 implementation 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 has been completed on 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
- 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 10th May 2018, a total of 150,085 users have self-registered on the Sentinels Scientific Data Hub; 14.4 million Sentinel-1 product download have been made by users, corresponding to 18.8 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
- Sentinel-1 Yearly Mission Review on 24 May 2018, at ESA-ESRIN

