

sentinel-1

→ RADAR VISION FOR COPERNICUS

Mission Status Report 182

Reference Period: 14 November – 20 November 2017

Mission status

- The Sentinel-1A and Sentinel-1B routine operations are on-going
- World maps as of May 2017 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. **Very good feedback from various partners and users involved in CleanSeaNet regarding the operational use of Sentinel-1 data was given at the conference “Celebrating 10 years of the CleanSeaNet service and cooperation between ESA and EMSA”, that took place at EMSA in Lisbon on 14-15 November.**
- Following specific Sentinel-1B tasking in addition to Sentinel-1A existing planning, 6-day interferograms characterising the ground deformation due to the M 7.3 major earthquake that occurred in Iran / Iraq on 12 November 2017, have been generated by scientists. Examples are available from <https://twitter.com/insarinfo>
- Sentinel-1 imagery has been used by the International Charter Space and Major Disasters for the activation related to major floods in Vietnam due to the Typhoon Damrey. See at: <https://disasterscharter.org/web/guest/activations/-/article/cyclone-in-viet-nam-activation-557->
- Specific acquisitions are being planned with Sentinel-1A and Sentinel-1B in support of the Charter call related to the search and rescue of the Argentinian military submarine.
- The use of the EDRS-A service by Sentinel-1A and Sentinel-1B is on-going as part of the routine operations
- 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 from 18 November at 20:48 UTC to 19 November at 10:02 UTC, due to a SAR anomaly. No data were generated during this period**
- **The 6th Sentinel-1 satellite In-Orbit Performance Review took place from 14 to 16 November 2017 in Rome, at Thales Alenia Space premises. Good health of both Sentinel-1A and Sentinel-1B satellites has been confirmed at the meeting**
- 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.** 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 16th November 2017, a total of 112,427 users have self-registered on the Sentinels Scientific Data Hub; more than 11 million Sentinel-1 product download have been made by users, corresponding to 14 PB of data. 1.93 million Sentinel-1 products are available on-line for download, representing 3 PB of data. Statistics of last 24 hours are available in real time at the Data Hub home page: <https://scihub.copernicus.eu>**

Outlook

- Continuation of Sentinel-1 constellation routine operations

