

Mission Status Report 247

Reference Period: 19 March 2019 – 25 March 2019

sentinel-1

→ RADAR VISION FOR COPERNICUS

Mission status

- The Copernicus Sentinel-1A and Sentinel-1B routine operations are on-going
- 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.
- 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, iceberg and swell 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.
- Specific observations were planned in response to the activation EMSR350 from the Copernicus Emergency Management Service (CEMS) related to floods in Australia in two main different areas, due to cyclones Trevor (northeast Australia) and Veronica (northwest Australia), activated on 23rd March 2019**
- Specific Sentinel-1 observations were planned to support the monitoring over sea of the cyclones Trevor and Veronica, near Australia. These acquisitions were planned in such a way to also cover nearby land coastal areas, in anticipation of potential floods**
- Specific Sentinel-1 observations were planned to support the monitoring over sea of the tropical cyclones Rodrigues and Joaninha, both in Indian Ocean**
- Specific observations were planned in response to the call 690 from the International Charter Space and Major Disasters, activated on 19th March 2019, related to floods in Indonesia**
- Further specific observations were planned in response to the call 691 from the International Charter Space and Major Disasters, initially activated on 14th March 2019, related to floods in Mozambique due to the tropical cyclone Idai**
- Additional specific observations were planned in response to the activation EMSR348 from CEMS related to the tropical cyclone Idai in Mozambique, initially activated on 15th March 2019. See here an example of flood delineation map based on Sentinel-1A/B imagery, with a Sentinel-2A image at the background:**
https://emergency.copernicus.eu/mapping/system/files/components/EMSR348_08TICA_01DELINEATION_MONITOR2_v2_100dpi.jpg
- 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
- 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 operational qualification of the Level-2 the OCN Radial Surface Velocity (RV) 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 21st March 2019, a total of 224,818 users have self-registered on the Sentinels Open Access data Hub; 19.2 million Sentinel-1 product download have been made by users, representing 24.6 PB of data. 3.7 million Sentinel-1 products are available on-line for download, representing 5.9 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-1 constellation routine operations

