

## Mission Status Report 255

Reference Period: 14 May 2019 – 20 May 2019

# sentinel-1

→ RADAR VISION FOR COPERNICUS

### Mission status

- The ESA Living Planet Symposium took place from 13 to 17 May 2019, in Milan, Italy. An impressive number of presentations and posters based on the exploitation of Sentinel-1 data have been shown in various domains (operational, scientific, commercial), demonstrating the success of the mission. More information at: <https://lps19.esa.int/>
- 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 actions were implemented (NRT data provision from already planned acquisitions) in support of the activation EMSR-0359 from the Copernicus Emergency Management Service (CEMS) related to floods in North Italy, on 15 May 2019. Please see here an example of flood delineation map based on Sentinel-1 imagery, covering the city of Modena: [https://emergency.copernicus.eu/mapping/system/files/components/EMSR359\\_AOI02\\_DEL\\_PR\\_ODUCT\\_r1\\_RTP01\\_v1.jpg](https://emergency.copernicus.eu/mapping/system/files/components/EMSR359_AOI02_DEL_PR_ODUCT_r1_RTP01_v1.jpg)**
- **Specific observations were planned in response to the call 700 from the International Charter Space and Major Disasters on 17<sup>th</sup> May 2019, related to floods in Ascension, Paraguay**
- 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 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.
- 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 16<sup>th</sup> May 2019, a total of 240,994 users have self-registered on the Sentinels Open Access data Hub; 19.8 million Sentinel-1 product download have been made by users, representing 25 PB of data. 3.9 million Sentinel-1 products are available on-line for download, representing 6.2 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, 24 May 2019**

