

## Mission Status Report 316

Reference Period: 28 July 2020 – 3 August 2020

# sentinel-1

→ RADAR VISION FOR COPERNICUS

### Mission status

- The Copernicus Sentinel-1A and Sentinel-1B routine operations are on-going.
- **Despite the critical situation in Europe due to the COVID-19, important efforts are being made to ensure the continuity of the Sentinel-1 mission operations**
- 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 for CleanSeaNet services; operations with EMSA service providers local stations are on-going.
- The Copernicus Global Land Service operationally uses Sentinel-1 imagery for the generation of Surface Soil Moisture & Soil Water Index products, over Europe
- **Specific Sentinel-1 observations have been planned over seas and coastal areas to support the monitoring of the tropical cyclone Isaias (Atlantic Ocean / Caribbean / USA)**
- **Sentinel-1 specific observations continue to be used in the frame of the call 764 from the International Charter Space and Major Disasters on 22 July 2020, related to major floods in India. Here is an example of a flood map based on Sentinel-1 imagery acquired on 29 July 2020: [https://disasterscharter.org/image/journal/article.jpg?img\\_id=6601683&t=1596128837596](https://disasterscharter.org/image/journal/article.jpg?img_id=6601683&t=1596128837596)**
- 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. All other PDGS operational services (i.e. Mission Performance, Precise Orbit Determination, Wide Area Network) are operating nominally
- **By 30<sup>th</sup> July 2020, a total of 366,510 users have self-registered on the Sentinels Open Access data Hub; 27.6 million Sentinel-1 product download have been made by users, representing 35 PB of data. 5.5 million Sentinel-1 products are available on-line for download, representing 8.9 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

