

# sentinel-1

## Mission Status Report 107

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Reference Period: 17 May 2016 – 23 May 2016

→ RADAR VISION FOR COPERNICUS

### Mission status

- The Sentinel-1A routine operations are on-going
- Sentinel-1B has been launched on 25 April 2016, the Commissioning Phase is on-going – see next page
- Sentinel-1A data can be accessed from: <https://sentinels.copernicus.eu>
- The observation scenario supports the systematic coverage of a first set of Copernicus Services areas of interest, of European land and coastal waters, of global tectonic/volcanic areas, as well as of other specific areas worldwide for various applications. The observation plan also includes regular mapping of all land areas worldwide. An overview of the observation scenario is available at: <https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-1/observation-scenario>
- The detailed observation plan in the form of instrument acquisition segments is published at: <https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-1/observation-scenario/acquisition-segments>
- The operational use of Sentinel-1A data by the Copernicus Marine Environment Monitoring Service for sea-ice and iceberg monitoring activities is on-going
- The European Maritime Safety Agency (EMSA) has introduced in the CleanSeaNet service the use of Sentinel-1 imagery in quasi-real time. Preliminary operations with first EMSA local stations are on-going
- Following the loss of contact with the EgyptAir airplane MS804 during the night of 18-19 May 2016, a re-tasking of Sentinel-1A from IW mode to EW mode was urgently performed on 19 May so that the first acquisitions taking place on 19 May at 16:00 UTC and on 20 May at 04:00 UTC would cover the area of the last known location of the airplane. Although there was no guarantee that the slick spotted on a Sentinel-1A image in the relevant area would come from the missing airplane, this information was provided to authorities to support the search. More information at: [http://www.esa.int/Our\\_Activities/Observing\\_the\\_Earth/Copernicus/Sentinel-1/Sentinel-1A\\_spots\\_potential\\_oil\\_slick\\_from\\_missing\\_EgyptAir\\_plane](http://www.esa.int/Our_Activities/Observing_the_Earth/Copernicus/Sentinel-1/Sentinel-1A_spots_potential_oil_slick_from_missing_EgyptAir_plane)
- Specific operations and satellite tasking have been performed to support the activation EMSR164 related to a tropical cyclone in Bangladesh. Examples of flood delineation maps based on Sentinel-1 data are available at: <http://emergency.copernicus.eu/mapping/list-of-components/EMSR164>
- Specific satellite tasking has been made to support the call from the International Charter on Space and Major Disasters related to floods in Sri Lanka. Example of flood delineation maps based on Sentinel-1 data available at: [https://www.disasterscharter.org/image/journal/article.jpg?img\\_id=269385&t=1464073656354](https://www.disasterscharter.org/image/journal/article.jpg?img_id=269385&t=1464073656354)
- A satellite unavailability occurred on 22 May 2016 from 14:51 UTC to 18:11 UTC
- The Sentinel-1A spacecraft is in a stable state, operating in Nominal Mission Mode (NMM). The Flight Operations Segment (FOS) ensuring the monitoring, control and commanding of the satellite is operating nominally. Orbit control manoeuvres are performed once a week
- 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 Scientific Data Hub. The operational qualification of Level-2 OCN products is on-going (geophysical validation of the Radial Surface Velocity component)
- 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
- Since 21 July 2015, 100% of the IW and SM data over land are systematically produced to level 1 SLC. SLC production has been extended to all data at global level, i.e. acquired over seas and sea-ice as well
- By 19 May 2016, a total of 34,133 users have self-registered on the Sentinels Scientific Data Hub; 4,347,675 product download have been made by users, corresponding to 4.95 PB of data. At the time of publishing this report, more than 535,000 Sentinel-1A products are available on-line for download, representing 684 TB of data. Statistics of last 24 hours are available in real time at the Data Hub home page (<https://scihub.copernicus.eu>).
- The overall operations mission performance is nominal

### Outlook

- Start of EDRS-A - Sentinel-1A user commissioning
- Continuation of Sentinel-1A routine mission operations



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### Sentinel-1B Commissioning Phase

- Sentinel-1B was launched on 25 April 2016 from Kourou, French Guiana
- The Launch and Early Orbit Phase (LEOP) was successfully completed on 28 April. All deployments were successfully performed during the first 10 hours after launch (i.e. SAR antenna and solar panels) and initial checks of the various Platform and Payload sub-systems were successfully executed
- The SAR payload was activated on 28 April, the first data takes were acquired at 05:37 UTC, only 56 hours after lift-off, and downloaded at the Matera station few minutes later. These data were immediately processed by the Payload Data Ground Segment
- The first Sentinel-1B images were published on 28 April, less than three days after lift-off. See more information at: [http://www.esa.int/Our\\_Activities/Observing\\_the\\_Earth/Copernicus/Sentinel-1/Sentinel-1B\\_delivers](http://www.esa.int/Our_Activities/Observing_the_Earth/Copernicus/Sentinel-1/Sentinel-1B_delivers)
- The satellite Commissioning Phase started on 29 April. All equipment and sub-systems are nominal and running on the prime units
- The commissioning of the Propulsion subsystem and the characterisation of the propulsion thrusters has been completed and the orbital manoeuvre strategy to reach the reference orbit has been consolidated. The Commissioning of the Attitude and Orbit Control System (AOCS) is on-going
- The satellite is planned to reach its orbital location by mid-June 2016, synchronised with Sentinel-1A at 180 deg. in the same orbital plane
- Detailed tests, characterisation and calibration activities will be pursued during the Commissioning Phase
- The SAR calibration and characterisation activities will start mid June once the orbital location is reached. In advance, the SAR thermal characterisation measurement campaign has been completed

### Outlook

- Continuation of the Sentinel-1B Commissioning Phase
- Continuation of orbital manoeuvres to reach the nominal orbit
- Completion of the Commissioning of the Platform Sub-systems

