

Mission Status Report 431

Reference Period: February 2024

sentinel-1

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Mission status

- On the 13th of February the Sentinel-1A RCT-3B thruster used for routine orbit inclination control has shown sign of premature degradation. No redundancy is available since the loss of the propulsion system A-branch in October 2022. For the sake of preserving the spacecraft, it has been recommended to stop the orbit inclination control. The impact at mission level (especially for INSAR) is preliminarily assessed as minor, however it is considered as a major anomaly as impacting the mission operation capacity to perform orbit control as designed.
- The spacecraft is in a stable state, operating in Nominal Mission Mode and fully under control, collision avoidance capacity is not jeopardized by the recent thruster issue.
- The Copernicus Sentinel-1A mission operations went on routinely during the reporting period. The anomaly related to the partial S-1A/EDRS OCPs has been mitigated by adding X-band downlink capacity. Investigations on the anomaly root cause are on-going.
- The Flight Operations Segment (FOS) ensured the monitoring, control and commanding of the satellites nominally. Orbit Control Manoeuvres (OCM). During the reporting period, no Collision Avoidance Manoeuvre (CAM) was performed for S-1A and for S-1B.
- The Sentinel-1 Ground Segment operations have continued smoothly with no major anomaly to report. The sentinel operation dashboard provides up-to-date information on the actual data availability corresponding to every planned data-take.
- The spacecraft and downlink planning has been made successfully:
 - The detailed observation plan in the form of instrument acquisition segments has been [published regularly](#).
 - Wave Mode data is acquired globally over open oceans, systematically processed to Level-2 OCN products, and made available to CMEMS for operational assimilation.
- Specific planning requests were placed to support:
 - 5 Charter calls mainly for flood, landslide and oil spill
 - Monitoring of 2 Tropical cyclone systems
- S-1A Data Quality is nominal and is being checked routinely by the S-1 Mission Performance Center.
- The following articles related to Sentinel-1 were published during the reporting period [Tobago oil spill](#)

Latest news

- Other news regarding Sentinel-1 can be found [here](#).

Sentinel-1B disposal

- Disposal operations are happening at slower pace due unexpected and rapid degradation of the propulsion system. The 25 years in-orbit lifetime being has been reached by the end of February. The depletion of the remaining fuel (<80kg) appears to be a major challenge considering the S/C status and capacity.

