Mission Status Report 177
Reference Period: October 2021

sentinel-2
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Mission Status

- A set of products upgrades is being prepared as further described in the Outlook section below.
- Despite the situation due to the COVID-19 pandemic, Sentinel-2 mission operations remained nominal.
- The mission is sensing systematically all land and water areas indicated here, and the detailed mission acquisition plans are regularly published here
- An ad-hoc acquisition campaign is performing till March 2022 an extended coverage of the Seychelles for supporting scientific studies aiming at better estimating the carbon stock in seagrass soils.
- Level-1C (top-of-atmosphere reflectance) and Level-2A (surface reflectance) products are available on Copernicus Open Access Hub and on Data and Information Access Service (DIAS) platforms.
- The Copernicus Sentinel Data Access Annual Report 2020 has been published and it is available here.
- Information on data quality is available in two reports, one for L1C products and one for L2A products.
- Since 23 August, the geometric refinement of products has been extended worldwide, improving the multi-temporal registration and absolute geolocation accuracies of Level-1C and Level-2A products. Further details available here.
- Some Data Hub anomalies and outages impacted the availability of the data access during the period. Please refer to the news page for the list of the single events.
- The following articles related to Sentinel-2 were published during the reporting period:
    - La Palma volcano: How satellites help us monitor eruptions
    - Release of the 10m WorldCover Map
    - The Copernicus Contribution to the latest Intergovernmental Panel on Climate Change
    - New platform for sharing Copernicus Sentinel resources
- Sentinel-2 videos and images have been published and are available here.
- Sentinel-2 remained in 2020 as the top European mission in terms of scientific peer-reviewed publications (1200 during 2020) and data volume distributed to users.

Outlook

- Upgrade of the processing baseline for both Level-1C and Level-2A featuring several improvements in the algorithms and modifying elements of the products format.
  The change is planned by early January 2022 and further details are available here.
  Regarding Level-1C products, the following evolutions will be included:
    - Correction of the radiometric bias between Sentinel-2A and Sentinel-2B;
    - Provision of Level-1C quality masks in raster format;
    - Addition of ECMWF (European Centre for Medium-Range Weather Forecasts) parameters;
    - Addition of CAMS (Copernicus Atmosphere Monitoring Service) parameters;
    - Addition of Level-1C snow/ice mask;
    - Provision of negative radiometric values (implementing an offset);
    - Addition of a DOI (Digital Object Identifier).

  Regarding the Sentinel-2 Level-2A products, the first five above-mentioned evolutions are directly inherited from Level-1C product and additional evolutions include:
    - Provision of negative radiometric values (implementing an offset);
    - Provision of Band 01 sampled at 20 m spatial resolution;
    - Addition of Level-2A Quality Indicators;
    - Aerosol correction using CAMS auxiliary data;
    - Improvement of clouds and cloud shadows detection;
    - Improvement of the topographic and casted shadows;
    - Improvement of the bright target classification over coastal areas;
    - Addition of a DOI.