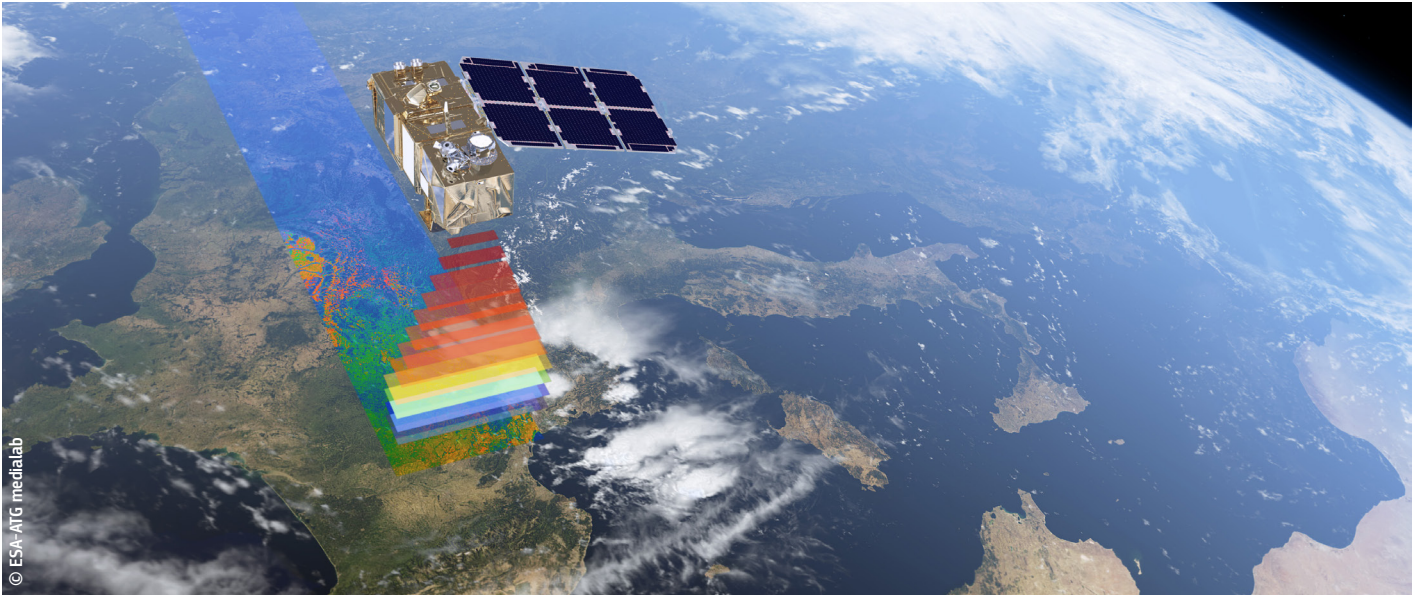


Sentinel-2



What is Sentinel-2?

Sentinel-2A was launched from Europe's Spaceport in Kourou (French Guiana) on 22 June 2015 (local time) on top of a Vega launcher and Sentinel-2B followed on 7 March 2017.

Sentinel-2 is a polar-orbiting, multispectral high-resolution imaging mission for land monitoring to provide, for example, imagery of vegetation, soil and water cover, inland waterways and coastal areas.

Sentinel 2 is a key element of the Copernicus programme of the European Union and features a two-satellite land monitoring constellation designed by the European Space Agency (ESA) and built by Airbus Defence and Space. The satellites' development capitalises on the know-how and advanced space technologies from sixty European industrial partners. Cooperation agreements between ESA and national space agencies have been established in the area of image quality (with the French CNES), inter-orbit optical communications (with the German DLR), and for cross-calibrations (with NASA in the U.S.).

With a 290 km-wide field of view, Sentinel 2 will deliver images of Earth's changing land with an unprecedented frequency and level of detail and accuracy. Sentinel 2B which will complete the constellation is expected for launch mid-2016.

Sentinel-2 mission

With its systematic and frequent coverage, Sentinel 2 makes a significant contribution to Land Monitoring Services by providing input data for land cover change mapping, as well as supporting the assessment of bio-geophysical parameters of vegetation like Leaf Area Index (LAI), Leaf Chlorophyll Content (LCC) and Leaf Cover (LC).

Sentinel 2's instruments comprise 13 spectral channels with a 290 km swath and spatial resolutions of 10 m (4 visible and near infrared bands), 20 m (6 red-edge/shortwave infrared bands) and 60 m (3 atmospheric correction bands). It is able to support a wide range of land studies and geophysical applications, reducing the time required to build a rich and worldwide cloud-free imaging archive. The spectral bands of Sentinel 2 provides data for land cover and change classification, atmospheric correction and separation between cloud and snow.

Operational information from this latest Copernicus mission helps improve agricultural practices, monitor desertification and the state of the world's forests, detect pollution in lakes and coastal waters, contribute to disaster mapping and much more. These high-level objectives specified in 2007, after intense consultation with user communities, make Sentinel 2 a significant asset for Copernicus Services such as Land Monitoring, Emergency Management, Security and Climate Change.

The Sentinel 2 mission supports broader policy objectives of the European Union, particularly in the areas of climate and environment.



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Concrete applications

- 📡 **Agricultural monitoring:** food security monitoring, agricultural production estimation, crop area monitoring for agricultural statistics;
- 📡 **Disaster monitoring:** responses to major disasters in the shortest possible time, assisting in the identification of priority areas for humanitarian and financial aid, providing essential geographical information for remote areas where the information is absent or inaccurate (e.g. following flooding or earthquakes);
- 📡 **Forest monitoring:** contribution to the conservation of biodiversity in forests, soil conservation;
- 📡 **Urban planning:** supporting urban planning in order to ensure sustainable and balanced development, providing the means for a consistent basis of comparison across Europe, allowing the tracking of urban developments to understand how policies trigger or suppress urban expansion;

📡 **Water monitoring:** water stress assessment and water scarcity forecasting, as information on the extent and impact of water scarcity and drought is indispensable for decision-making at national and continental scale;

📡 **Cryosphere:** assisting in improving the understanding of the water cycle and climate, supporting decision-making at the public and private levels, supporting flood forecasting and early warning systems;



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- 📡 **Soil conservation:** supporting European decision-making and spatial planning authorities with consistent and comparable EU-wide information products to analyse current and potential future trends and impacts of land use changes for urban developments and infrastructure investment, the prevention of land degradation;
- 📡 **Biodiversity monitoring:** supporting European, national and local authorities in monitoring the state of European habitats, supporting research monitoring and the assessment of biodiversity.