

# Germany

Delivering free, seamless, cloudless mosaic images of Europe to the world

In Germany, the Federal Agency for Cartography and Geodesy (BKG) delivers high quality remote sensing products as open data.

Remote sensing through satellite imagery is an important source and method for specialised services provided by BKG, such as surface models for air traffic control and landcover changes for spatial planning. These and other satellite products are important contributions to issues of public relevance, for example civil security and environmental monitoring.

BKG has established a process chain for high quality mosaics that allows for the harmonisation of any optical remote sensing data and for any area on Earth. This is particularly beneficial to the Federal Administration in Germany and, whenever legally permitted, for the public as open data.

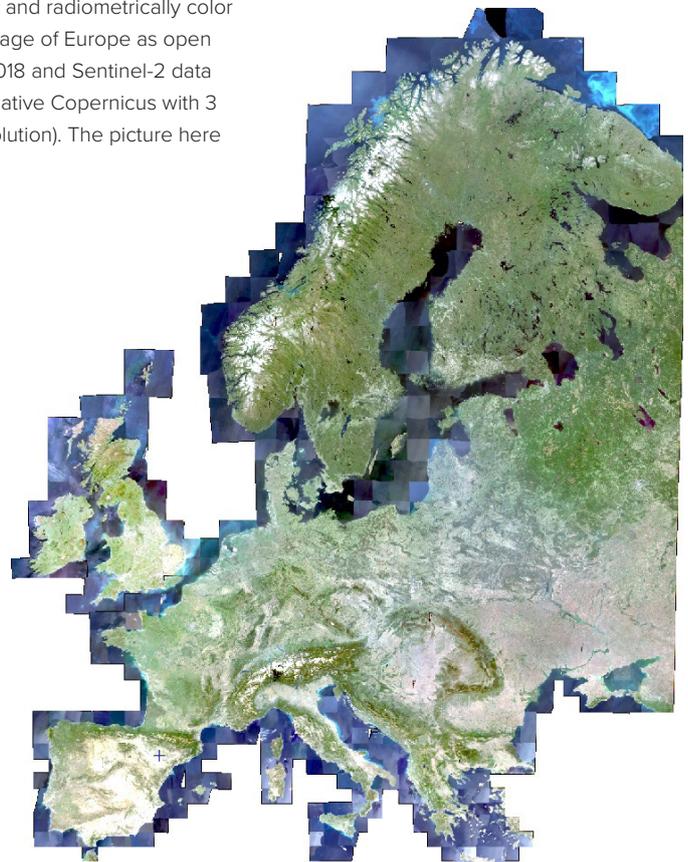
BKG's technologies and services allow the production of time-shifted data sets. For example, offering nationwide remote sensing data and the corresponding derived products from 2009, 2012, 2015, 2017 and 2018. Due to copyright restrictions, the first generation of these products could only be provided for internal use within the Federal Administration.

With the EU-financed Copernicus programme and the corresponding open data policy, BKG is now able to publish the derived mosaics for free. For example, a complete, almost cloudless and high-quality mosaic of Germany in 2018 and 2019 from Sentinel-2 datasets is now published as a web map service and shared on various platforms. The requests for this service are very high and still rising; from March to December 2019, it was accessed more than 8 million times with 430 Gigabytes transferred.

In addition, the established process of creating a mosaic from multiple satellite images is enabling BKG to produce a free, seamless, cloudless and radiometrically color balanced mosaic image of Europe as open data (data source 2018 and Sentinel-2 data of the European initiative Copernicus with 3 bands and 10m resolution). The picture here

gives an impression of this new product which will be published in the first half of 2020.

BKG will continue to expand the time series (past and current ones) of remote sensing data in the future. Commercial and open data will be used. BKG will continue to keep its datasets and mosaics as open as possible.



Mosaic image of the entire Europe (2018)