IAF EARTH OBSERVATION SYMPOSIUM (B1)
Earth Observation Data Management Systems (4)

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THE GERMAN COPERNICUS DATA AND EXPLOITATION PLATFORM "CODE-DE" – ONLINE DATA ACCESS AND BIG DATA PROCESSING

Abstract

Copernicus establishes an operational European Earth Observation capacity. Data from multiple sources – first and foremost the Sentinel series of satellite systems - feed services and provide users with reliable and up-to-date information regarding environmental and security issues. The main Sentinel Internet based data access infrastructure is implemented by ESA. In addition, several Copernicus Participating States established national "collaborative ground segments", aiming at the additional use and distribution of Copernicus datasets with a focus on their national demand. Next to that "Copernicus Data and Information Access Services" (DIAS) are currently being set up, contracted by ESA through an European Commission initiative. The German Copernicus Data and Exploitation Platform (CODE-DE) is an infrastructure for data access (Sentinel data, products from the Copernicus Services and national data), on-demand processing and value-added product generation. Since 9 March 2017 the element for a user-friendly online data access is operational and tapped by over 710 registered users until January 2018. During this period more than 57,000 products were downloaded and the global catalogue based on a rolling archive and a reload mechanism for Sentinel-2 data was continuously updated and includes a data volume of 800 TByte. The catalogue client provides an enhanced solution to discover, view, and download available products including time, spatial, additional filters, e.g., polarization mode or cloud cover. It features a browsing to display Sentinel-2 products in full 10 m spatial resolution. In a next step also other satellite data (e.g. science data from our national missions) will be integrated into the portal. Since 30 November 2017 an on-demand processing environment for high-performance cloud processing is operational. The algorithms currently available are part of the Sentinel tool boxes (SNAP) such as generic band math or time series algorithms. Furthermore, the results are optionally mosaicked to cover larger areas or a larger period. The capacity of the processing environment will also be expanded by selected applications, i.e. in the agricultural, maritime or snow and ice context, based on dedicated VMs using "docker". This flexible processing approach supports different use cases – allowing developers, processing experts and data experts to work on the platform in support of their own processing scenarios.