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# The Siberian Earth System Science Cluster (SIB-ESS-C)

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In this paper the concept of the Siberian Earth System Science Cluster (SIB-ESS-C) being established at the University of Jena (Germany) is presented. SIB-ESS-C is a spatial data infrastructure for remote sensing product generation, data dissemination and scientific data analysis. The prime objective is to enable researchers to extract information on the state of the Siberian environment and the changes that are occurring using Web-based tools. The region under study covers the entire Asian part of the Russian Federation from the Ural to the Pacific Ocean including the Ob-, Lena- and Yenissey river catchments. Taking into account the large extent of this region the focus is on remote sensing data as the primary data source. A key aspect is to create and analyze long-term time series of various environmental parameters derived from Earth Observation data. The SIB-ESS-C infrastructure is to provide the technical means by which remote sensing time series can be created, distributed and analyzed through Web-based tools. The development of the SIB-ESS-C system follows a service oriented architecture (SOA) approach. Interoperable Web services are being implemented based on standards published by the Open Geospatial Consortium (OGC) and the International Organization for Standardization (ISO). The main components of the system comprise a Catalogue Service (CSW) publishing metadata on available data products and services, Feature and Coverage Services (WFS, WCS) providing direct access to existing datasets and Web Processing Services (WPS) for spatio-temporal analysis and visualization.