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SIOS REMOTE SENSING SERVICE

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Svalbard Integrated Arctic Earth Observing System (SIOS) will be a new coordinating research infrastructure organisation with the aim to promote more openness, better access, data sharing and knowledge management for the international research community. SIOS shall coordinate and develop existing and new research infrastructure in Svalbard. The vision of SIOS is to establish a cooperating research infrastructure which will give better estimates of the future environmental and climate changes in the Arctic.

The remote sensing service is one of the services to be delivered by SIOS. The SIOS Knowledge Centre (SIOS KC) will be the entry point for remote sensing resources and services, and the SIOS KC will serve as the integration node.

The remote sensing service will provide support for scientists working in the Svalbard area aiming to facilitate and increase the usage of remote sensing data by easing the access. The remote sensing service will allow Svalbard to gain a leading role in providing quality-controlled remote sensing data for polar research, climate research and ultimately in Earth System Science (ESS). It's also worth noting that, because of high latitude location, the SIOS area is very frequently covered by polar orbiting satellites. This is particularly appealing for calibration and validation of satellite data.

The reasoning for this service is threefold;

- to ensure that field work and other surface scientific investigation can be covered with the relevant information provided from space;
- to provide satellite owners the best possible high arctic surface measurements for calibration and validation;
- to promote the integration of satellite data on different space platforms.

The service will provide general access to satellite data, specific datasets and satellite images relevant for SIOS. Visualisation and download of data will be possible. SIOS RS service will be used for education and outreach in SIOS. Cal/Val activities, supported by SIOS KC, will often be linked to support to campaign and field activities, allowing both the campaign and satellite owners to benefit from the activities. Example cases will be presented.

The radar satellite Sentinel-1 is now operational and will provide SIOS with valuable data. The optical satellite Sentinel-2 will be launched in 2015. An example data product to be provided from SIOS is cloud free Sentinel-2 images over Svalbard. For this data product, Sentinel-2 data needs to be orthorectified with the best terrain model for Svalbard. The Norwegian Polar Institute will release their terrain model for Svalbard 1.januar 2015, and this model will be available to the remote sensing service in SIOS. The SIOS Sentinel-2 data product will therefore be an added value product for researchers working with Earth System Science on Svalbard.

SIOS Remote Sensing service is foreseen to expand through continuous development, in relation to the achieved results and desired level of ambition. The SIOS Preparatory Phase has just ended and SIOS is now entering the implementation phase. Status of the SIOS Remote Sensing Service implementation process will be presented.