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DATA MANAGEMENT WITHIN THE SVALBARD INTEGRATED ARCTIC OBSERVING SYSTEM

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Svalbard is located in a region with a very large climate gradient, being alternately influenced by cold central Arctic or mild marine climate conditions at time scales of weeks to years. It is also located in the region with the strongest inflow and outflow processes between the Arctic and lower-latitude oceans. In addition, Svalbard is the only region in the world (and has the facilities) where one can study and quantify one of the remaining unknowns in the climate puzzle: the extraterrestrial and especially solar influence on climate.

The vision for the Svalbard integrated Earth observing system (SIOS) is to be a regional observational system for long term acquisition and proliferation of fundamental knowledge on global environmental change (GEC) within an Earth System Science (ESS) perspective in and around Svalbard. SIOS will systematically develop and implement methods for how observational networks are to be implemented and thus become a leader in observational systems in the Arctic and Polar regions.

The SIOS data sets and their associated metadata are held by several distributed Data Centres. Each Data Centre will have its own set of Data Management Facilities for ingestion of new data (and associated metadata), maintenance of the data sets (including metadata) and for data curation. The Data Ingestion component allows new data sets to be registered and stored in the system, verifying data formats and ensuring all needed metadata is provided. The Data Maintenance component allows for updates to the data sets, and the Data Curation component provides support to users requesting additional information or help with deciding whether a given data set is suitable for a particular task.

Integration of the information hosted by the contributing data centres is based on extensive utilisation of internationally accepted interoperability protocols and documentation of data and interfaces to data through metadata. Four specific implementation areas have been identified. These are (1) hardware, (2) software, (3) procedures and management structures, and (4) personnel.

The SIOS Preparatory Phase has just ended and the project is now entering the implementation phase. Status of the SIOS Data Management System implementation process is presented along with the SIOS Data Policy emphasizing free and open sharing of data.