THE CRYOCLIM SYSTEM FOR CRYOSPHERIC CLIMATE MONITORING

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The vision of the CryoClim project is to develop a new operational and permanent service for long-term systematic climate monitoring of the cryosphere. The product production and the product repositories are hosted by mandated organisations, and the service is to be delivered through a state-of-the-art web service. The web service includes a portal with manual searching, viewing and downloading capabilities. In addition, there is a machine interface making the CryoClim service accessible for other web services and applications. The service is to be free of charge. The databases are connected over the Internet in a seamless and scalable network, open for inclusion of more databases/sub-services. The system and service is a contribution to the Global Earth Observation System of Systems (GEOSS) and the Global Cryosphere Watch (GCW) according to the climate monitoring principles recommended by the Global Climate Observing System (GEOS).

The project currently develops sub-services for sea ice and snow products of global coverage and glacier products covering Norway (mainland and Svalbard). The current project partners are the Norwegian Computing Center (NR; project coordinator), Norwegian Meteorological Institute (METNO), Norwegian Water Resources and Energy Directorate (NVE) and Norwegian Polar Institute (NPI). CryoClim is an ESA PRODEX project funded by the Norwegian Space Centre.

The project is now close to the end of the third phase out of four phases. At this stage the project has developed the first (incomplete) version of the web service (including a portal), mostly completed the sub-service for sea ice, developed the passive microwave component and essential parts of the snow sub-service, made almost two full glacier product coverages for mainland Norway based on optical data and implemented SAR-based algorithms for glacier monitoring in Svalbard. The final project phase intends to complete the sub-services, produce the full time series of cryospheric products and establish fully operational production to permanently update the product sets (in near real-time for sea ice and snow). The web service will be completed with an operational backend system and with a portal and a machine-readable interface.

The presentation will give an overview of the project results so far, including algorithms applied to satellite data, and outline the final challenges and work towards a fully operational service in 2012.