



The Svalbard Integrated Arctic Earth Observing System (SIOS) ESFRI Initiative – A possible future cornerstone of European Arctic research

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The Norwegian initiative “Svalbard Integrated Arctic Earth Observing System (SIOS) was included in the Revised Roadmap of the European Strategy Forum on Research Infrastructures (ESFRI) in 2009; an application to perform a preparatory phase project is currently under evaluation.

The main aim of the SIOS initiative is to establish an Earth System observation platform in the European Arctic that is capable to match the whole scope of Earth System Models (ESM) on the observational side, ranging from solar/space-terrestrial interaction via atmosphere-ocean land-cryosphere coupling at the ground to geosphere-biosphere coupling. To this end, it is planned to integrate and upgrade all Arctic research stations on- and offshore in the Svalbard region which are currently operated by 15 nations, both European and worldwide. The initiative will also include the comprehensive marine and airborne monitoring and research activities and utilize the easy access to remote sensing data emerging from the satellite receiving activities at Longyearbyen.

The already very comprehensive activity - though with limited international coordination - on Svalbard preconditions, as a first step, a thorough gap analysis of existing infrastructure in light of the needs of the modeling community and a careful design of the future overarching infrastructure. The interdisciplinary scientific character of SIOS makes the initiative well-suited to serve as a catalyser and integrator of the environmental ESFRI initiatives in the Arctic, while the truly global composition of the consortium may serve as a model for the envisaged pan-Arctic observing system SAON.