



Call for innovations in Arctic Earth System Science

SIOS and SSF seek proposals to develop an innovative technology or method to improve observation capability or decrease the environmental footprint of research and monitoring in the field of Earth System Science in Svalbard.

Proposal submission opens **22 June 2023**

Deadline to submit a proposal is **12 September 2023 (noon)**

The award amount is **400 000 NOK**

Background

The Svalbard Integrated Arctic Earth Observing System ([SIOS](https://sios-svalbard.org)) is a regional observing system for long-term measurements in and around Svalbard, Norway, addressing Earth System Science (ESS) questions related to Global Change. The observing system builds on the extensive and diverse world class research infrastructure already established in Svalbard by institutions from many nations. This includes a substantial capability for utilising remote sensing resources to complement ground-based observations. SIOS currently has 29 members from 10 countries who collaborate to develop the observing system and share infrastructure, data and knowledge.

SIOS is offering an award for the best innovative proposal submitted by the deadline.

Who can apply?

Eligibility criteria

The following eligibility criteria must be met:

- Proposals must be related to the core scientific priorities of SIOS to support long-term ESS observations in Svalbard (<https://sios-svalbard.org/ObservingSystem>).
- Applicants must be able to adhere to the SIOS data policy (www.sios-svalbard.org/Documents).
- Students and early career researchers (ECR) are encouraged to apply.

Evaluation criteria

Submitted proposals will be evaluated according to the criteria outlined in appendix 1. The following aspects are emphasised:

- Innovation, technical feasibility, and scientific quality.
- Contribution to optimising the observing system, advancement in Arctic Earth System Science and decreasing the environmental footprint of science.
- The potential to contribute to SIOS Core Data (<https://sios-svalbard.org/CoreData>)

Details of the call

The purpose of the call is to provide seed money to kick start an innovation. The funding will support development of a new technology, methodology or new way of using products and data within Svalbard science and infrastructure operations.

Some suggestions for topics that could be addressed include:

- remote / autonomous platforms



- reduction in power consumption for remote stations
- better technical solutions for communication with instruments in remote locations
- new measurements that can replace fieldwork that currently has a high environmental impact
- pilots for citizen science/community-based observation to support ESS monitoring
- cooperation with a manufacturer to further develop an existing technology.

Applicants should, however, not feel limited by these suggestions, as all innovations to support Earth System Science in and around Svalbard will be considered. **High risk-high gain proposals are encouraged to apply.**

One project will be selected from the submitted applications to receive the award. The awarded funding will be used to develop a “proof of concept” (e.g., a prototype, design or first version of a product, pilot).

Application procedure

Proposals must be submitted electronically at <https://sios-svalbard.org/InnovationAward2023Webform>. A project description (not exceeding 5 pages), a budget (up to 1 page, with a description of costs followed by an itemised list of the main expenses in Norwegian kroner, NOK) and CVs of all partners (up to 1 page per CV) must be attached. Refer to appendix 2 for information on the administrative procedures.

The project description must include:

- A detailed description of the proposed product / prototype / method.
- A proposed timeline for your project.
- Technological readiness level – the award is not limited to any particular level but you must indicate what level you are aiming for.
- Relevance to SIOS, i.e., how your proposal contributes to long-term ESS research and monitoring.

The deadline to submit a proposal is **12 September 2023 (noon)**. The proposal that has won the award will be announced at the [Svalbard Science Conference](#) in October 2023.

Contact details

For further guidance, contact the SIOS Observing Network Infrastructure Officer <https://sios-svalbard.org/Staff#ONIO>.



Appendix 1: Assessment criteria¹

Applications to the innovation award will be assessed based on the following criteria:

Excellence

To what extent does the project represent an ambitious innovation that will support high quality Arctic Earth System Science?

- To what extent does the innovation represent something new?
- To what extent is the innovation targeted towards clear needs or new market opportunities for the Project Owner and the companies that are partners in the project?

Impact

To what extent does the project pave the way for significant benefits for the Project Owner, project partners, and SIOS members, and lay a foundation for other positive impacts for society?

- To what extent will the project entail a potential for sustainable value creation for SIOS members and other polar researchers?
To what extent will the project promote enhanced use of SIOS research infrastructure?
- To what extent can the project have positive external impacts, such as:
 - improving Earth System Science research or monitoring, or providing a substantial environmental benefit compared to the currently available methods / technologies;
 - lowering the environmental footprint (green innovation);
 - helping to disseminate knowledge through networks and publications;
 - producing results that can be used by other industries, the public sector or in society at large;
 - leading to an innovation that can address UN Sustainable Development Goals.
- To what extent are the potential impacts of the project clearly formulated and highly plausible?

Implementation

To what extent does the work plan provide a good basis for implementing the R&D activities and realising the potential for value creation?

- To what extent will the project have access to the necessary R&D expertise and adequate capacity to carry out the R&D tasks?
- To what extent does the project manager have appropriate expertise and experience to lead an R&D project targeted towards innovation? Is the relevant competence demonstrated in the project description and attached CVs of the project team?
- To what extent is the proposed timeline for the project realistic, and will it deliver results within a reasonable time?

¹ Assessment criteria modified from the Research Council of Norway:
<https://www.forskningsradet.no/en/call-for-proposals/2023/innovation-project/#AssessmentCriteriaTitle>



- To what extent is the plan for implementation of R&D results and realisation of benefits relevant and appropriate, for instance regarding:
 - Intellectual Property Rights issues,
 - assessment of the competitive framework and market risks,
 - investment needs and plans,
 - needs and plans regarding partnerships for commercialisation or industrialisation,
 - need to develop business models.
- How sound is consideration of the gender dimension in the innovation?

Relevance to the call and to SIOS

To what extent does the project meet the requirements and guidelines set out in the call for proposals?

- To what extent does the proposal contribute to the core priorities of this call (innovative, useful to science and society)?
- To what extent is the proposal relevant to supporting the development of an observing system for Earth System Science in Svalbard, in line with the goals of SIOS? See <https://sios-svalbard.org/ObservingSystem> for information about the scientific priorities of SIOS.
- To what extent will this improve the availability of SIOS Core Data

Evaluation process:

The proposal will be scored on a scale² from 1-7 for the criteria outlined above. The scores will then be added together to create a ranking of the proposals. The final decision on the winning proposal will be made by the SIOS Board of Directors.

Scores will be allocated according to the following definitions:

7 = Exceptional	The proposal addresses all relevant aspects of the criterion exceptionally well. Shortcomings are not present or are only very minor.
6 = Excellent	The proposal successfully addresses all relevant aspects of the criterion. Only minor shortcomings are present.
5 = Very Good	The proposal addresses the criterion very well. A small number of shortcomings are present.
4 = Good	The proposal addresses the criterion well. A number of shortcomings are present.
3 = Fair	The proposal broadly addresses the criterion, but there are a number of significant weaknesses.
2 = Weak	The criterion is inadequately addressed, or there are serious inherent weaknesses.
1 = Poor	The proposal fails to address the criterion or cannot be assessed due to missing or incomplete information.

²This scale is from the Research Council of Norway: <https://www.forskningsradet.no/en/processing-grant-applications/processing-applications/Scale-marks-assessment-criteria/>



Appendix 2: Administrative procedure

SIOS Knowledge Centre (SIOS-KC) oversees the administrative procedures in relation to the Innovation Award.

The evaluation panel will consist of members from the Science Optimisation Advisory Group (SOAG), Research Infrastructure Coordination Committee (RICC), Remote Sensing Working (RSWG) Group, and SIOS-KC. The evaluation panel may also use external experts for evaluations. The panel must perform their work impartially and take all measures to prevent any situation that could cast a doubt on their impartiality. The evaluation must not be influenced by economic interest, political or national affinity, family or emotional ties or any other shared interest ('conflict of interests'). Panel members with a conflict of interest are excluded from the evaluation. SIOS is committed to equity, diversity, and inclusion and will ensure a fair and non-discriminatory selection process.

The recipient of the award will need to sign a contract with SIOS which will stipulate terms such as the criteria for reporting to SIOS. Payment of the award amount will be made up front to the recipient. The payment is subject to fulfilling the criteria in the contract with SIOS by the agreed upon deadline.

The application must be submitted using the webform on the SIOS website (<https://sios-svalbard.org/InnovationAward2023Webform>). There are three mandatory attachments that must be uploaded with your application: a project description (not exceeding 5 pages), budget (up to 1 page) and CV of all named applicants (1 page per CV). The project description should follow the template in appendix 3.

Applications submitted to the Innovation Award, including any related information, data, and documents received by SIOS-KC, will be treated confidentially. An obligation of confidentiality also binds the evaluators. Applicants retain full and exclusive ownership of their prior information and intellectual property rights. The recipient of the award undertakes to ensure the confidentiality of the ideas and projects presented and developed throughout the project period. The award recipient is responsible for being the owner of the idea and, if applicable, being entitled to intellectual property rights of their respective innovations developed through the project. Infringements of intellectual property rights are the sole responsibility of the participants.

Earth System Science data that are relevant to the SIOS community these data should be shared via the SIOS Data Management System according to the [SIOS data policy](#). Refer to the [Guidelines for Data Sharing](#) for further information.



Appendix 3: Template for project proposal (not exceeding 5 pages)

Introduction

Short introduction to the scientific background to the proposal and the problem that your innovation is aiming to solve.

Project description

Description of the proposed innovation: what is it, what is the current state of the art, and how is this idea innovative? Focus on describing the problem to be addressed and how it will be solved with the proposed innovation, and how this will benefit science, industry and society.

Project team

List the project team and the contributions of each to the proposed project.

Relevance to SIOS

Describe the relevance of the proposed project to SIOS. How can it be used by SIOS members? How does it contribute to developing an observing system for Earth system science in Svalbard? Which SIOS goal or recommendation from a SESS report does it address? How does it benefit SIOS in the long term?

Technological readiness level

State the technological readiness level the proposed project is aiming for, according to the EC definitions: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/faq/2890>. The award is not limited to any particular level, but you must indicate what you are aiming for and why.

Timeline

Propose timeline for your project, including major milestones and a date for delivering project results. This will be used by SIOS to set a deadline for delivery in your contract in the event you are the award recipient.