Guidance for scientific reviewers

Purpose of the SIOS Access Call

The Svalbard Integrated Arctic Earth Observing System (SIOS) is a regional observing system for long-term measurements in and around Svalbard, 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. From this foundation, SIOS works towards a systematic development of new methods and experimental design for the implementation of observational networks in Arctic environments.

In order to promote more efficient use and better integration of the observing system, SIOS offers funded access to the research infrastructure (RI) owned by SIOS members. Users may also access data, expertise and logistical support from members of the SIOS consortium.

Evaluation criteria

The call for access to RI is open to researchers from any institution, provided they meet the criteria outlined in the call text. Scientific reviewers are asked to assess how well a proposal meets the evaluation criteria below.

Evaluation criteria

Submitted proposals will be evaluated according to the following criteria:

- Scientific quality, innovation, and technical and logistical feasibility.
- Contribution to optimising the observing system and advancement in Arctic Earth System Science.
- Contribution towards one or more of the highlighted topics for this call:
  - Expanding existing measurement networks
  - Integration of different disciplines and observations in existing locations
  - New monitoring techniques, methodologies, and data harmonisation
  - Linking existing datasets or using data in new ways (e.g. modelling)
  - Specifically addressing recommendations from the SESS report

A summary of the recommendations from the SESS report is available online for reference: https://sios-svalbard.org/sites/sios-svalbard.org/files/common/SESS_recommendations_summary.pdf

Evaluation procedure

Each reviewer will be assigned one or more proposals that they are asked to review. For each of their assigned proposals they are asked to complete an online form, which may be found by following this link: https://sios-svalbard.org/AccessCall2020_Evaluation

➢ Part 1: Project details

In the first part of the form the reviewer is asked to write the project number of the proposal that is being reviewed and their own name. They should also declare if they have any conflicts of interest.

➢ Part 2: Scientific evaluation

In the second part of the form the reviewer is asked to complete a table, where the project is given a score from 1-4 on the following criteria:

- Scientific excellence
- Technical feasibility
- Relevance to SIOS
- Contribution to the highlighted topics for the call

Scores must be allocated according to the following definitions:

4 = Excellent	The proposal meets the requirements in an exemplary manner, is internationally leading and can be expected to lead to ground-breaking results.
3 = Good	The proposal meets the requirements to a high level, is internationally competitive and should lead to significant results. Shortcomings, if any, are minor.
2 = Acceptable	The proposal meets most requirements to a satisfactory standard. Relevant results are expected. Moderate shortcomings.
1 = Unacceptable	The requirements are not met to a satisfactory standard. Major shortcomings. Not fundable.

The reviewers should consider the following questions when making their evaluation:

Scientific excellence

- Is the proposal of a high standard?
- Are the scientific questions described relevant within the field and internationally?
- Is the proposal scientifically feasible, i.e. do the proposed methods have a realistic chance of answering the questions posed?
- Will the results of the proposed project be of high relevance to the SIOS / Arctic Earth System Science community?

Technical feasibility

- Are the proposed methods technically feasible?

Relevance to SIOS

- Does the proposal fit into the broad scope of Earth System Science?
- Does the proposal contribute to building an observing system for the greater understanding of the Earth System in Svalbard?
- Does the proposal lead to long term data sets that may be useful to other SIOS researchers, and will the participants share their data using FAIR standards?
- Does the proposal integrate knowledge between different spheres and promote interdisciplinarity?
- Does the proposal promote cooperation between SIOS partners?

➢ Part 3: Highlighted topics

In the third part of the form, reviewers are asked to identify which, if any, of the highlighted topics in the call the proposal seeks to address. This section takes the form of a tick-box list, where the reviewer can tick all the boxes that apply. The reviewers should also rate the contribution of the proposal to the highlighted topic from 1 to 4, using the criteria outlined in part 2.

➢ Part 4: Assessment summary and overall score

In the final part of the form, the reviewers are asked to give a brief summary of their overall assessment of the proposal. They are also required to give an overall score for the proposal, rating it between 1 and 4 using the same criteria as in part 2.

If the reviewer wishes to provide anonymous feedback to the applicant, they may do so in the final box of the form.