



EXPERIMENT ADVISORY COMMITTEE – TERMS OF REFERENCE

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1.0 PURPOSE

The SNOLAB Experiment Advisory Committee (EAC) is an international peer review committee that advises the Executive Director and Executive Director Office (EDO) on the science program that is undertaken at the SNOLAB deep underground facility. The Committee performs two roles: providing advice during the initial assessment of experiments that are proposed for location at SNOLAB; and providing advice and oversight on the running program at SNOLAB.

2.0 SCOPE

The EAC shall consider and provide advice on New Opportunities and Projects, as described in the *Project Life Cycle Management Procedure*, during all phases of the Project Life Cycle, from Phase 0, *Initiation*, through Phase 5, *Closure*. EAC consideration of a Project will be at the Executive Director's discretion. The Executive Director may choose not to seek the EAC's consideration for Projects deemed to have small Project Risk (as defined in the Project Life Cycle). New Opportunities to be evaluated by the EAC include:

- One-off experiments with specific scientific objectives;
- Experimental programs with multiple stages and possibly evolving scientific objectives;
- Scientific facilities such as test stations proposed to be sited at SNOLAB for scientific programmes that may or may not ultimately be sited at SNOLAB; and
- Prototypes and 'proof of concept' experiments as part of research and development towards future scientific programs that may or may not be sited at SNOLAB.

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3.0 DEFINITIONS

Project - is an Experiment approved by the SNOLAB Executive Director after consideration of a submitted **Expression Of Interest For A New Opportunity at SNOLAB**. Projects are usually initiated by organizations external to SNOLAB but may have SNOLAB scientists participating.

New Opportunity - is a potential Project under consideration for selection by SNOLAB.

Experiment Advisory Committee (EAC) - is an international peer review committee that advises the SNOLAB Executive Director on the Science Program that is undertaken at SNOLAB.

4.0 RESPONSIBILITIES

SNOLAB Executive Director - Is responsible for defining the mandate, constitution, and term of the Experiment Advisory Committee. The Executive Director appoints the members of the EAC and the Chair. The Executive Director, in consultation with the Chair and Director of Research, sets the agendas for the EAC meetings.

SNOLAB Director of Research - Sets the EAC meeting dates (with assistance from the Executive Assistant) and communicates meetings to the EAC membership and Project proponents. Manages the EAC membership (but does not appoint members) including tracking of tenures on the committee and member subject matter competencies. Administers the EAC recommendations to Projects.

EAC Chair - Is responsible for chairing the EAC meetings, assigning Lead Reviewers and the generation of Review Reports. May be called upon by the Executive Director to present to the SNOLAB Institute Board or other stakeholders such as funding agencies.

SNOLAB Executive Assistant - Assists the Director of Research in setting EAC meeting dates. Handles the logistics for meetings including travel, hotels, rooms and catering. Collects submissions for the meetings and manages the EAC records.

Project Representative - is the person designated by the Project to ensure that the Project's responsibilities in the Life Cycle process are met. In particular, the Project Representative is responsible for the development, submission and control of all documents that the Project provides to SNOLAB as part of the Project Life Cycle. The Project Representative is usually the Project's Spokesperson or equivalent.

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Project Spokesperson - is the person with overall responsibility for the Project. The Spokesperson will be responsible for ensuring that all Project Personnel abide by the *General Terms and Conditions Applicable to Projects at SNOLAB* and that the Project follows its Quality Management Plan. Usually the Project Spokesperson is also the Project Representative, and some projects use the title of Project Director rather than Spokesperson.

Lead Reviewer - Each Project will have a Lead Reviewer appointed for each EAC Meeting. The Lead Reviewer is responsible for collating findings, comments and recommendations on the Project and producing the text for the report and close out presentation for that Project.

5.0 REQUIREMENTS

5.1. EAC Membership

The Committee shall consist of a chair and up to six committee members. Each member will normally serve for 3 years. The cycle of committee member will ensure continuity of knowledge within the committee. The Executive Director may choose other periods at their discretion to best fit the needs of the committee and SNOLAB. The membership of the committee is at the discretion of the Executive Director.

The Director of Research shall maintain a matrix of the serving Committee members showing their tenures and their subject matter competencies.

The Director of Research, Director of Operations and Director of Corporate Services will attend the EAC meetings, including in camera sessions, *ex officio*. They will act as a resource to the Committee, providing a SNOLAB perspective and give clarification on technical and facility issues. Should the EAC/SNOLAB request or require additional information, additional members of the SNOLAB team may be co-opted onto the Committee. Additional support to the Committee will be provided by SNOLAB personnel, including support for meeting organization, report collation and note-taking.

5.2. Responsibilities of the Chair

The EAC Chair's responsibilities include:

- Assignment of Lead Reviewers for each Project;

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- Chairing the EAC meetings;
- Assisting the Executive Director in the preparation of the EAC Meeting agenda;
- Compilation of and submission of Review Reports to the Executive Director;
- Assisting the Executive Director in the selection of Committee members;
- Presenting to the SNOLAB Board or other SNOLAB stakeholders at the request of the Executive Director;

It is anticipated that the Chair of the EAC will remain in frequent contact with the Executive Director to ensure the EAC is fully cognizant of the SNOLAB scientific program. In addition to the formal review of the experimental projects seeking deployment at SNOLAB, the EAC may also, through the Chair, be asked for periodic comment on proposals for research and development and test programs at SNOLAB and the utilization of SNOLAB resources. The Chair may exercise prerogative in providing an executive assessment for small scale, or research and development projects.

5.3. Responsibilities of the Lead Reviewer

At each EAC meeting, the Chair shall appoint a Lead Reviewer for each Project or New Opportunity. The Lead Reviewer for a Project may change from meeting to meeting. The responsibilities of the Lead Reviewer include:

- Being the primary person for assessing the Project or New Opportunity submissions;
- Collecting and collating input on the evaluation of the Project or New Opportunity from other members of the Committee; and
- Producing the close out presentation and Review Report sections relevant to the Project or New Opportunity.

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5.4. Meetings and Deliverables

Nominally, the EAC shall meet bi-annually in person to evaluate both ongoing Projects and New Opportunities. All experiments will be reviewed at this meeting to provide a complete snapshot of the SNOLAB experimental program, and to allow consistent assessment of the requirements for resource allocations. Review of Projects and New Opportunities may be through written submission and/or in-person presentations. The Committee may also undertake business through e-mail and videoconference or convene extraordinary in person meetings at any time, should this be warranted by circumstances and at the discretion of the EAC Chair and Executive Director

5.4.1. EAC Meeting Agenda

The agenda for the EAC meetings shall be set by the Executive Director in consultation with the EAC Chair and the Director of Research.

5.4.2. Biannual EAC Meeting Submissions

All Projects past Life Cycle Gateway 0, *Initiation Approval*, shall submit a bi-annual report to the EAC in advance of the biannual meeting for the EAC's and SNOLAB's consideration. The Bi-Annual Report shall follow a pre-defined template provided by SNOLAB. The call to the Projects will be at least four weeks in advance of the EAC meeting with specified submission dates. Projects are required to provide their Bi-Annual Reports by the specified submission dates if they are to receive full consideration by the EAC. New Opportunities are also required to submit *Expressions of Interest* by the submission date if they are to receive full consideration by the EAC.

5.4.3. EAC Meeting Format

The EAC may meet informally prior to the beginning of the formal meeting, typically over dinner the day before the main review meeting. The formal meeting will nominally follow the format of:

- At the beginning of the formal meeting, the EAC shall convene in camera with the appropriate SNOLAB management to review objectives for the meeting and to confirm assignments such as the designation of Lead Reviewers for the Projects. During this in camera session the Executive Director may choose to communicate specific instructions or context to the Committee.

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- A series of closed sessions with each Project consisting of a presentation followed by a question-and-answer period. These sessions with the Projects will be private with only the EAC, ex-officio SNOLAB personnel, and the Project proponents being present.
- In camera session(s) to discuss the information learned from the Projects and to prepare the EAC report.
- A series of close out sessions with each Project. Again, each session will be closed with only the EAC, ex-officio SNOLAB personnel, and the Project personnel being present.

Not all projects will be reviewed by in person sessions. At the discretion of the Executive Director and EAC Chair, a Project may be reviewed by the submission of the bi-annual report only. Typically, this will be done for small Projects and for Projects that are not managing major work.

Each Project during the review meeting will have a Lead Reviewer assigned to it by the Chair. While all members of the EAC are expected to participate in the review of each Project, the Lead Reviewer is responsible for collating findings, comments and recommendations from the EAC and for producing the review report and close out presentation for the assigned Project.

5.4.4. EAC Meeting Output

Output from the meeting will consist of:

- A close out presentation to the Project (if the Project was reviewed in person); and
- A formal report to the Executive Director.

Both presentation and report will follow the standard format of Findings, Comments and Recommendations. The EAC formal report will be comprised of:

- General findings, comments and recommendations specific to the Executive Director. This section of the report usually makes reference to the overall science program and operation of the facility; and
- Findings, comments and recommendations directed to each Project.

Usually, the EAC report will concatenate the reports on all the Projects

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into a single document addressed to the Executive Director and copied to the SNOLAB Directors. The Executive Assistant will usually do this by splitting the EAC report into individual reports that will be issued by the Director or Research to each Project. If the EAC chooses to make private findings/comments/recommendations on a Project to the Executive Director, the report to that Project will be appropriately redacted.

The EAC report and recommendations will be made available to SNOLAB stakeholders including the SNOLAB Institute Board and funding agencies.

5.4.5. Response to Recommendations from the Projects and Recommendation Tracking

Following the standard convention, findings and comments do not require formal response or actions from the Project. Recommendations, however, are expected to be formally addressed by the Project. Each Project is required to formally respond to the recommendations it receives from the EAC report after receiving them – and finalize the project's response to the recommendation at the next EAC meeting. A Project may choose to accept a recommendation, ask for clarification on a recommendation or it may contest a recommendation. The EAC Chair will consider clarifications or the contesting of a recommendation. If agreement cannot be achieved on a recommendation, the Executive Director shall be the final arbitrator.

Once issues with recommendations have been resolved, the record of the recommendations will be maintained for each Project by the Director of Research. Usually, the Projects will be expected to close out recommendations prior to the next EAC meeting and will be required to update the EAC on those recommendations as part of their Bi-Annual Report.

5.4.6. EAC Recommendation for Director's Review

Under some circumstances, as part of its review of a Project, the EAC may choose to recommend to the Executive Director that SNOLAB perform a Director's Review of the Project. Reasons for making such a recommendation include but are not exclusive to:

- The scientific case presented by a New Opportunity is either in insufficient detail to assess or the EAC does not have the necessary expertise to assess the scientific merit of the New Opportunity;

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- The Project has met with significant technical challenges and an in depth review is required to determine if the Project can overcome them and continue to have scientific merit.

If the EAC recommends a Director's Review of the Project, it will include in its recommendation guidance on the objectives of such a review. The EAC Lead Reviewer, and any other EAC members agreed upon by the Executive Director and EAC Chair, for the project will be invited to participate in the Director's Review.

5.5. EAC Responsibilities during the Project Life Cycle

The EAC is expected to provide expert advice on Projects through all phases of the Life Cycle. The review of each individual Project is specific to the project and it is only possible to give general guidance in this document as to what is expected from the EAC members. The following sections are intended to guide the Committee rather than be absolute.

5.5.1. Phase 0, Initiation

During the initiation phase the EAC will provide advice to the EDO on the scientific merit and timeliness of a *New Opportunity*, the match to the SNOLAB science program and the feasibility and state of readiness of the New Opportunity. This initial evaluation of the New Opportunity will usually be based on template provided by SNOLAB, but in some cases the New Opportunity may choose to submit a full proposal. In the EAC's evaluation of the New Opportunity, it will consider:

- The scientific merit of the New Opportunity;
- The research capability of the proposed collaboration;
- The funding potential;
- The technical feasibility;
- The match to the existing SNOLAB experimental program and relative priorities; and

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- The readiness to mount the experiment;

The evaluation by the EAC will be in conjunction with a *Facility Impact Assessment* performed by the Project Management Office which will evaluate the potential impact of the New Opportunity on the SNOLAB facility and infrastructure. The EAC will make a recommendation to the Executive Director on whether to adopt the New Opportunity as a full SNOLAB Project. The EAC may also make recommendations on the allocation of initial SNOLAB resources such as design effort to the Project.

5.5.2. Phase 1, Definition

During the Definition Phase of the Life Cycle, the Project has not yet had space allocated for it by SNOLAB. The Project is refining a Conceptual Design that will:

- Present a full concept for implementation of the Project at SNOLAB;
- Identify the requirements for SNOLAB space and resources;
- Identify and present management strategies for potential hazards; and
- Identify any outstanding research and development issues that must be completed for the successful implementation of the Project.

In Phase 1, the EAC will evaluate the Project for:

- Progress towards its scientific objectives;
- Project management and collaboration organization and resourcing;
- Funding;
- Progress on outstanding research and development necessary to demonstrate viability of the Project;
- Any areas that the Committee feels are not sufficiently addressed by the Project; and
- Readiness for allocation of space at SNOLAB;

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In addition to the bi-annual EAC reviews of the Project in Phase 1, SNOLAB will conduct a Conceptual Design Review of the Project to assess the hazard management plan for the Project and whether it is sufficiently mature to warrant space allocation. It is not expected that the EAC will normally participate in this detailed review. However, the EAC may recommend that:

- Particular topics be addressed in the Conceptual Design Review;
- Particular conditions be placed on the Project prior to space approval; or
- The EAC review certain aspects of the Project prior to space approval.

The EAC will make recommendations to the Executive Director on the progress of the Project and whether it still maintains scientific relevancy and whether (from a scientific, management and funding perspective) it is ready for space allocation at SNOLAB. The EAC may also make recommendations on the allocation of SNOLAB resources to the Project.

5.5.3. Phase 1A, Proposal, and Phase 2, Development

In Phase 1A, *Proposal* (if this phase is required), and Phase 2, *Development*, the Project has been allocated space but not yet given approval to begin installation at SNOLAB. In these phases, the EAC will monitor the Project to ensure it continues to make satisfactory progress towards its scientific goals. During Phase 1A and Phase 2 the Project goes through final design in preparation for installation at SNOLAB. The Project undergoes technical reviews to ensure the safety and technical viability. While it is not expected that the EAC participate in these reviews, it is appropriate for the EAC to make recommendations that:

- Particular topics be addressed in Project Life Cycle Gateway reviews;
- Particular conditions be placed on the Project prior to Gateway approvals; or
- The EAC review certain aspects of the Project prior Gateway approvals.

The EAC will make recommendations to the Executive Director on whether the Project is making satisfactory progress and whether it still maintains

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scientific relevancy. The EAC may also make recommendations on the allocation of SNOLAB resources to the Project.

5.5.4. Phase 3, Implementation

In Phase 3, *Implementation*, the Project undergoes installation at SNOLAB. In addition to an Installation Review prior to equipment being installed at SNOLAB, the Project will undergo an Operations Readiness Review prior to beginning operations. While it is not expected that the EAC participate in these reviews, it is appropriate for the EAC to make recommendations that:

- Particular topics be addressed in the reviews;
- Particular conditions be placed on the Project prior to installation or operations approval; or
- The EAC review certain aspects of the Project prior to installation or operations.

The EAC will make recommendations to the Executive Director on whether the Project is making satisfactory progress and whether it still maintains scientific relevancy. The EAC may also make recommendations on the allocation of SNOLAB resources to the Project.

5.5.5. Phase 4, Operations

In Phase 4, *Operations*, the Project is running and taking data. The EAC will monitor the Project to ensure that it:

- Is advancing the science program satisfactorily;
- Continues to be appropriately resourced; and
- Is making satisfactory progress towards publications.

The EAC will make recommendations to the Executive Director on whether the Project is making satisfactory progress and whether it should continue to operate at SNOLAB. The EAC may also make recommendations on the allocation of SNOLAB resources to the Project.

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5.5.6. Phase 5, Closure

In Phase 5, Closure, the Project has ceased operations and is in the process of decommissioning. It is expected that it is still likely that the Project is still performing analysis and preparing publications. The EAC will monitor the Project to ensure that it continues to be appropriately resourced and is making satisfactory progress towards publications.

6.0 RECORDS

The following EAC records shall be maintained:

- a) Project Bi-Annual Reports;
- b) EAC Membership;
- c) EAC Bi-Annual Review Reports.

7.0 SUPPORTING DOCUMENTS

- SL-SCI-RES-60-001-F02 Project Expression of Interest Template
- SL-SCI-RES-60-002-F02 Project Bi-Annual Report Template

8.0 REFERENCES

- *SL-SCI-RES-60-001-P Project Life Cycle Management*

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9.0 REVISION HISTORY

ORIGINATING DATE: 2015-01-28					
REV NO.	APPROVAL DATE (YYYY-MM-DD)	AUTHOR	REVIEWER	APPROVER	SUMMARY OF CHANGE
00	2015-01-28	N. Smith		N. Smith	Original issue.
01	2016-02-24	F. Duncan	F. Duncan	N. Smith	Migrate original terms of reference to new format and align with new Project Life Cycle and process as it is presently conducted. Define roles and responsibilities of the Associate Director Programme Development and Science and Executive Secretary. Biannual reports and EAC Tracker added to records.
02	2023-08-15	J. Cooley/ J. Hall	J. Hall	J. Cooley	Updated titles and roles of SNOLAB staff. Realigned some details to current practice. Membership tracker moved from templates to records. Recommendation tracker removed.