

Guidelines for submitting a Ship Time Application to conduct research aboard the Canadian research icebreaker CCGS *Amundsen*

PART I – GENERAL INFORMATION

The Canadian research icebreaker CCGS *Amundsen* provides Canadian researchers and their international collaborators with access to the Arctic Ocean. The ship's facilities and sophisticated pool of equipment make it a versatile research platform for scientists in the natural, health and social sciences along with their partners from government, industry and northern communities. Every year the *Amundsen* operates for 4-5 months in Arctic and subarctic regions in support of Canadian research programs and collaborations with industry and international partners. Because of the strong demand for ship time and the short window of operations in northern seas, the *Amundsen's* schedule must be carefully planned several months in advance.

Science programs requesting access to the *Amundsen* are required to submit a formal Ship Time Application. User Programs submitting an application should already have secured or anticipate funding for ship time from a funding agency (e.g. NSERC in Canada) through some scientific review process that confirms the scientific excellence of the proposed program. Programs slated to go through such process are encouraged to contact us (see page 5 for contact info) to discuss ship time availability and charter rates.

Ship Time Application applications fall under two types based on the number of berths and amount of dedicated ship time requested to conduct the proposed research program.

Primary applications Application a significant number of berths (>5) on board and/or a significant amount of dedicated ship time, and should be submitted preferably **at least 18 months prior** to their anticipated expedition dates for efficient planning purposes. Official deadline for ship-time application is **30 September** of any given year to join the expedition the following year.

Secondary applications are meant for smaller research teams requesting less than 5 berths onboard the ship, and who want to participate in an already scheduled Expedition. An independent scientific program is necessary (i.e., not part of a larger User Program) in order to submit an application for Secondary use. Secondary applications need also to be submitted before 30 September (i.e., 30 September 2019 for the 2020 Expedition).

The Primary and Secondary application procedure aims to improve the scheduling process for the *Amundsen* by providing sufficient lead-time to plan user access. It also provides small programs a "last minute" option to join the *Amundsen* Expedition (e.g., following funding confirmation).

Evaluation and selection process

All User Programs wishing to conduct research onboard the *Amundsen* must submit a formal Ship Time Application. Allocation of access to the *Amundsen* for science is decided upon an impartial process that reviews Ship Time Application applications and selects the participating research programs. All Ship Time Applications for a given year are reviewed by the Amundsen Science User Advisory Committee which evaluates and ranks the competing programs' applications based on six criteria, selects the participating programs, and establishes a preliminary deployment schedule for the annual Expedition.

Ship Time Application evaluation and selection criteria

Ensure the Ship Time Application follows submission requirements and that the application is complete (see page 5 of these Guidelines).

1. Clarity of the scientific background, objectives and methods (Section B.1).

The assessment of the clarity of the scientific background, objectives and methods, and the cohesiveness of the research program will be evaluated based on the provided Research Summary. User Programs submitting a Ship Time Application should already have gone through some scientific review process that confirms the scientific excellence of the proposed program (e.g., NSERC in Canada). The evaluation of the Ship Time Application should primarily rest on how the *Amundsen's* capacities will enable the research program to achieve its scientific objectives.

- a. Clearly outline the program's scientific objectives and identify gaps in knowledge.
- b. Ensure the proposed methods are appropriate to meet the goals of the research program.
- c. Mention the importance of requested ship time for the advancement of the research program and achievement of the scientific objectives.

2. Relevance to the mission of the Amundsen Science program and relevance for Canada (Section B.2).

The mission of the Amundsen Science program is to enable leading-edge, multidisciplinary and international research in Canada's northern seas to inform environmental, societal and economic issues of strategic importance to Canada.

- a. State how the research program is relevant to the mission of the Amundsen Science program and how it benefits Canada (environmental, economic, policy, etc.).

3. Potential for the training of Highly Qualified Personnel (HQP) (Section B.2).

The impact of the Facility on the quality of training and to trainees' acquisition of high-level skills for research and other careers is a key component of the Amundsen Science program. Additional value shall be given to applications with contributions to quality training at all levels, including undergraduate (theses and summer projects) and graduate students, postdoctoral fellows, technicians and research associates.

- a. State the contributions of the program to the training of HQP during the proposed field expedition (number and level of trainees, type of training, etc.).

4. Adequacy of the proposed methods, planned field operations and time frame to achieve the research program (Section C)

The proposed field work program must be consistent throughout the sub-sections pertaining to expedition logistics, including expedition timing and duration, geographic areas, work program & timeline of operations, and facilities & equipment requirements.

- a. Make sure the proposed work program is clear and appropriate, and contributes to attain the stated research goals. State how the objectives will be reached within the proposed time frame.
- b. Ensure the methods are feasible within the requested ship time (dedicated work days) and logistical constraints (time, locations, equipment, etc.).
- c. Clearly justify any time and logistical constraints. Clearly map and list the geographic areas and locations of stations/research sites.
- d. If the proposed scientific program necessitates licenses and permits, verify they can be obtained for the designated regions and within the time frame of the Expedition. Propose alternative regions or times to conduct the work.
- e. Clearly plan the timeline of operations and make sure it is feasible and in line with the amount of dedicated work days requested (i.e. ship time).
- f. List the required equipment and facilities and ensure they are in agreement with the methodologies and field work program. Clearly detail and justify any additional requirements.

5. Confirmation of ship time funding from other sources and appropriateness of the budget relative to the requested ship time (Section D.1)

6. Demonstrated need for supplemental funding by the Amundsen Science Ship Time Fund to complete the proposed field program and achieve the needed ship time (Sections D.2 and D.3; see eligibility and selection/allocation process below).

Clearly justify the need for this financial support to complete the proposed field program and cover the total ship time costs related to the requested number of work days and/or berths. This section is of the utmost importance in the review process by the User Advisory Committee to prioritize ship time Applications and funding applications, and decide how to allocate the funds among the selected research programs.

Following its review of all Ship Time Application applications, the Amundsen Science User Advisory Committee formulates recommendations regarding the selection and prioritization of programs, and submits a preliminary Expedition schedule to the Amundsen Science Board of Directors for review and approval.

The programs selected for the upcoming scientific expedition are invited to participate in the *Amundsen* Expedition Planning Workshop (Users Committee meeting) to refine the annual deployment schedule and coordinate activities and logistics amongst participating programs and research teams.

Supplemental ship time funding from the Amundsen Science program

Eligible programs submitting a Ship Time Application can also apply for financial support from the Amundsen Science Ship Time Fund to supplement their secured/anticipated ship time funding up to 60% (as of 2020). These funding applications are evaluated by the Amundsen Science User Advisory Committee as part of the Ship Time Application review process (see criteria #6 above). The User Advisory Committee identifies programs eligible for funding and makes recommendations to the Amundsen Science Board of Directors concerning the selection and prioritization of applications, and the allocation of funds among the selected programs.

Eligibility for Amundsen Science Ship Time funding based on five categories of User Programs:

Private sector-academic joint program: non-eligible for supplemental ship time funding from the Amundsen Science program. The private sector partner is responsible for covering 100% of the program's ship time costs plus the administrative, maintenance and recapitalization costs of the pool of equipment.

International academic program with no Canadian participation: non-eligible for supplemental ship time funding from the Amundsen Science program. The program is responsible for covering 100% of the program's ship time costs.

Canadian Government-academic program: eligible for supplemental ship time funding from the Amundsen Science program. The Amundsen Science program can provide supplemental financial support up to a maximum of 60% of the total secured/anticipated program funding for ship time. Supplemental funding applies to ship time costs only, not research costs. The funds granted must be used towards providing access to the Facility for Canadian academics in the program.

Canadian-international academic program: eligible for supplemental ship time funding from the Amundsen Science program. The Amundsen Science program can provide supplemental financial support up to a maximum of 60% of the total secured/anticipated program funding for ship time. Supplemental funding applies to ship time costs only, not research costs. The funds granted must be used towards providing access to the Facility for Canadian academics in the program.

Canadian academic-led program: eligible for supplemental ship time funding from the Amundsen Science program. The Amundsen Science program can provide supplemental financial support up to a maximum of 60% of the total secured/anticipated program funding for ship time. Supplemental funding applies to ship time costs only, not research costs. The funds granted must be used towards providing access to the Facility for Canadian academics in the program.

PART II – SHIP TIME APPLICATION

Ship Time Applications must be submitted using the Amundsen Ship Time Application form. The form is comprised of 5 sections: A) Program Information, B) Description of the Research, C) Expedition Logistics, D) Budget, and E) Signature. The following instructions must be followed when writing the application:

- A Ship Time Application may be submitted in French or English.
- Carefully read and follow the *Guidelines* provided in this document; fill in all sections of the form and provide all the required documents (see list of required documents below).
- Submit the Application using the Amundsen Ship Time Application form, signed and saved in PDF format. Make sure the text fits in the space allotted.
- Text attachments must be submitted as PDFs using Arial font (11 pt and 1.0 line spacing minimum) with margins at least 1" (2.5 cm) all around. Do not exceed the length limit, as any extra pages will be removed.
- Images and figures must be in .gif or .jpg format with a size limit of 500 KB.
- The name of the User Program must appear in the title of each document (form and attachments).
- The form and all attachments (see list of required documents below) must be saved in a single PDF document and emailed to:

Alexandre Forest
alexandre.forest@as.ulaval.ca
Executive Director – Amundsen Science
1045 avenue de la Médecine, Local
4075 Université Laval, Québec (QC),
G1V 0A6
Tel: 1-418-656-2340

List of documents required for a complete application:

- Completed Amundsen Ship Time Application form.
- Attachment to Section B – Description of the Research (3 pages maximum)
 1. Research summary (1 pages maximum, figures/graphs included)
 2. References cited (1 page maximum)
 3. Relevance (1 page maximum)
- Attachment to Section C – Expedition Logistics (2 pages maximum)
Map(s) of targeted area(s) with location and identification of stations

SECTION A – PROGRAM INFORMATION

1. PROGRAM PROPONENT

The program proponent is the organization or person responsible for the User Program and is the primary contact with respect to the evaluation and selection process.

2. PROGRAM TITLE

Provide a descriptive title for the program as well as a short title (max. 20 characters) to be used in correspondence. Identify the subject area or topic (e.g., physical oceanography, marine geology, biogeochemistry, marine biology), and select a few keywords describing the research that will be conducted.

3. OVERVIEW OF PROGRAM REQUIREMENTS

Define the type of application and the broad requirements of the research program in terms of dedicated work days and berths, dividing the number of berths into the four categories of participants identified in the application form.

Application type: Choose Primary or Secondary; see Box at the beginning of the application form for definitions and submission deadlines.

Funding: The User Program must have already secured funding, or have submitted an application for funding, to cover the costs of ship time. If you are awaiting the decision on a ship time funding application, indicate the expected date of confirmation.

Supplemental funding by Amundsen Science Ship Time Fund: Indicate if you are applying for supplemental financial support; see Box at the beginning of the application form for eligibility criteria based on the categories of User Programs.

Expedition year: Indicate the year for which you are applying for ship time; see Box at the beginning of the application form for submission deadlines.

Geographic area(s): List the broad region(s) where the field campaign will be conducted. For example: Labrador Sea, Hudson Bay.

Number of days requested: Write the total number of dedicated work days requested to conduct the proposed research program. The total should reflect the information given in Section C – Expedition Logistics. Indicate if you are requesting a full leg, which is 42 days and generally corresponds with Coast Guard crew changes.

Number of berths requested: Indicate the number and category of participants (private sector, international, Canadian government and Canadian academic) who will be on board during the expedition. Note that a maximum of 40 berths are available for scientific personnel on board the *Amundsen*, so the total must not exceed 40 persons.

SECTION B – DESCRIPTION OF THE RESEARCH

1. RESEARCH SUMMARY

Provide a summary (max. 1 page) of the research program, including scientific objectives and methodology. Particular emphasis should be placed on how the *Amundsen's* capacities will enable the research program to achieve its scientific objectives and on the importance of ship time for the advancement of the research program. A list of cited references (max. 1 page) can be added after the summary.

2. RELEVANCE

Provide a short explanation (max. 1 page) stating how the proposed research program is relevant to Canada and to the mission of the Amundsen Science program. State the potential of the program for the training of highly qualified personnel (HQP).

SECTION C – EXPEDITION LOGISTICS

Note that final timing, duration, exact location of the research sites, and the schedule and sequence of operations will ultimately be dictated by the feasibility of integrating the needs of the different programs (at the Users Committee meeting) and from the overarching constraints determined by the annual Expedition Plan (e.g., timing and locations of crew changes). If a specific time, period, site location or piece of equipment is absolutely required for the success of the field work program, clearly justify this need or constraint in the appropriate sections of the form.

1. EXPEDITION TIMING AND DURATION

Define the preferred dates for the expedition and provide the relevant details regarding timing or duration of the field work (e.g., minimum number of work days required, earliest or latest start date). The number of dedicated work days indicated in this section must reflect the total ship time requested in Section C.3. Justify any time or logistical constraints that should be taken into account in the planning of the expedition. For example, *The cruise needs to start as early as possible in the spring for sea ice to be present in the area to conduct the proposed on-ice operations successfully.*

2. GEOGRAPHIC AREAS

Define the locations of sampling or research sites.

Map: A map showing the area of interest with stations/research sites may be enclosed with the application (see image attachment requirements on page 3). A table listing the stations and research sites shown on this map, along with their coordinates must be inserted in the *Information relative to expedition location* section.

Working in foreign waters – Research permits: If research is to be carried out in a foreign Exclusive Economic Zone (EEZ), state which country.

Information relative to expedition location: Provide any relevant details regarding the location of the expedition and insert a table listing all the stations with ID and coordinates (latitudes and longitudes in Degrees Decimal Minutes). Justify any specific need or constraint that should be taken into account in the planning of the expedition. For example, a specific port/point of embarkation or destination.

3. WORK PROGRAM AND TIMELINE OF OPERATIONS

For each station/research site listed in Section C.2, provide a description of the methods and/or operations that require dedicated ship time on site, such as sampling activities, multibeam surveys, etc. Estimate the time required on site to carry out these operations, and tally the resulting total ship time at the end.

For example, state the number of box cores that will be conducted at each station and estimate the time needed for deck operations related to this sampling operation. Do not include the time needed for processing of the cores or time spent in the laboratory after collecting the samples (i.e., time which is not direct ship time).

The work program and timeline of operations outlined here is of utmost importance to the evaluation of the application and serves to coherently justify the requirements for each working day of the ship and for the facilities and equipment listed below in Section C.4.

4. FACILITIES AND EQUIPMENT REQUIREMENTS

The equipment, facilities and instrumentation available on the *Amundsen* are presented under the components outlined on the *Amundsen* website in the *Capacity/Scientific Equipment* tab (www.amundsen.ulaval.ca). Select the required facilities, sampling equipment and instrumentation needed to conduct the proposed research program. List and provide details of any additional requirements (i.e., not listed) at the end of each subsection (4.1 to 4.6).

In the case of mooring operations (section 4.3) and on-ice operations (section 4.4), describe briefly the activities, methodologies and equipment needed to conduct the proposed work.

If you plan on bringing any specialized sampling gear or equipment on board that is not part of the *Amundsen* equipment pool and will require dedicated ship time to deploy or operate, list these items with a short description in the space provided at the end of section 4.7.

Some equipment and instruments, such as the ROV, require qualified professionals to operate. These specialized professionals are not part of the *Amundsen's* technical & professional team and need to be hired for the period of operation, thus representing extra costs that need to be considered by the program and factored into the ship time budget.

SECTION D – BUDGET

1. BUDGET

List each source of funding and corresponding amount being provided for ship time for the User Program. The program **MUST** have already secured funding or have submitted an application for funding to cover the costs of ship time. If you are waiting for a decision concerning a ship time funding application, list it with the expected date of confirmation. State the requested support from the Amundsen Science Ship Time Fund, if applicable. Indicate the number of berths provided for each category of participants through each source of funding. For Amundsen Science Ship Time support, the funds granted must be used towards the participation of Canadian academics in the program (see PART I – General Information).

2. ELIGIBILITY FOR AMUNDSEN SCIENCE SHIP TIME FUNDING

Select the category of User Program and indicate if you require supplemental financial support from the Amundsen Science Ship Time Fund.

3. AMUNDSEN SCIENCE SHIP TIME FUND

If you are applying for funding from the Amundsen Science Ship Time Fund, clearly justify the need for this financial support to complete the proposed field program and cover the total ship time costs related to the requested number of work days and/or berths. This section is of the utmost importance in the review process by the User Advisory Committee to prioritize ship time applications and funding applications, and decide how to allocate the funds among the selected research programs.

SECTION E –SIGNATURE

The proposal must be signed by the Program Proponent (scanned or electronic signature).