

A large, central image showing a close-up of an astronaut's helmet and visor. The helmet is white with a clear visor that reflects the Earth and the sun. The astronaut is wearing a white spacesuit with a red maple leaf on the shoulder. The background is a view of Earth from space, with the sun low on the horizon, creating a bright glow. The entire scene is framed by a large, semi-transparent circular graphic that looks like a window or a hatch.

# **Notice for the General Support Technology Program (GSTP) of the European Space Agency (ESA)**



Canadian Space Agency  
Agence spatiale canadienne

Canada



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## Introduction

Canada and the European Space Agency (ESA) have been cooperating in space activities since the early 1970s. Formal cooperation began in 1979 with the signing of the first Cooperation Agreement. The Agreement has been renewed five times since. The most recent Cooperation Agreement is in effect until January 1, 2030.

The Cooperation Agreement between Canada and ESA enables companies from the Canadian space sector to participate in ESA activities and programs and allows Canada to be part of ESA's decision-making process. Through this unique agreement (Canada is the only non-European cooperating state), Canadian organizations are allowed to bid on tenders for ESA contract related to activities and programs in which Canada participates. It provides opportunities for them to create alliances with European industry and access to space qualification or flight opportunities for their technologies and products. The implementation of the Cooperation Agreement is primarily accomplished through a contribution program.

This notice aims to inform the Canadian space sector on the procedures to seek funding for the General Support Technology Program (GSTP).

GSTP is an optional program of ESA in which Canada has been participating since 1995. It aims to convert promising engineering concepts into a broad spectrum of mature products – everything from individual components to subsystems up to complete satellites – right up to the brink of spaceflight or beyond. GSTP enables missions helping novel technology to reach the right maturity level, thus ensuring the right technology is available at the right time.

At the 2019 ESA Ministerial Meeting, the Canadian Space Agency (CSA) has renewed its participation in GSTP, by committing €0.7M (approximately \$1M). It is important to note that this amount include ESA overhead to manage the program element, which generally vary between 15% and 20% of the amount committed, according to their level of involvement.

## Objectives of the Program

GSTP ensures the right technology with the right maturity is available at the right time. The program has the following main objectives:

- Increase the funding level for technology R&D, in order to face the drastic increase in the complexity of European space programs;
- Ensure the necessary continuity in the development of identified technologies, after their feasibility has been demonstrated in other programs, by supporting pre-developments, product developments and demonstrating flight suitability, before these technologies can be included at acceptable levels of risk in the future programs;



- Provide an effective and durable solution for the management and funding of preparatory and supporting technology developments for all future programs;
- Improve coherence among the various technology development efforts at present performed by ESA and its Member States, thus providing the means to enhance the cost-effectiveness of these efforts by avoiding unnecessary duplication and improving the complementarity of these developments, by taking into consideration the roadmaps produced by ESA's Harmonization process;
- Give ESA and the Participating States the means of an industrial policy that provides closer coordination of the various technology programs and foster medium and long-term specialization by firms in the Participating States;
- Provide Participating States with suitable and effective technology preparation in relation to their intended level of participation in the appropriate programs, thus ensuring a fair and equitable industrial participation in all ESA future programs;
- Create, strengthen and further elaborate the industrial expertise in order to strengthen the position of the European industry in the competitive environment and to increase European non-dependence for critical technologies;
- Conduct in-orbit demonstration activities, maturation of future missions and development and implementation of missions of interest, partially or fully outside the scope of other ESA programs;
- Promote a spin-in of multiple use technologies for utilization in space; and
- Provide the opportunity to further support continuation of technology transfer activities.

Additional information on the program can be found on the [ESA website](#).

Canada is participating in GSTP with the following Canadian objectives:

- Improve the capacity and competitiveness of the Canadian space industry by involving it in areas complementary to CSA's Space Technology Development Program;
- Increase the technology readiness level of Canadian technologies for ESA programs in which Canada intends to participate or to respond to specific ESA missions' needs;
- Provide Canadian companies access to flight opportunities for their technologies and products; and
- Facilitate access to European market for Canadian companies by creating them opportunities to collaborate or partner with the European industry.

GSTP is complementary to national programs since it:

- Builds industrial relationships with European companies;
- Provides advancements in R&D and opportunities to test and prove Canadian technologies; and





- Involves Canadian participation in large, complex and innovative projects.

## Program Overview

GSTP activities are performed under three elements:

- Element 1 “Develop”: Technology developments for future missions, ground applications and tools;
- Element 2 “Make”: Development of technology and market driven activities; and
- Element 3 “Fly”: In-orbit demonstration of new technologies, preparation of future missions, small missions.

## Element 1 “Develop”

Below is a description of the Element 1 “Develop” and information about how to submit a proposal.

### Description

The activities performed under the Element “Develop” are dedicated to the development of technologies, building blocks, components and test beds for projects and the economic operators, i.e. small and medium-sized enterprises (SMEs), large enterprises, industry, satellite operators, satellite providers, universities and research organizations, from low Technology Readiness Level (TRL) to qualification and covering the following themes:

- Earth observation;
- Science;
- Human spaceflight and robotic exploration;
- Space transportation;
- Navigation;
- Technology developments to support the Space Safety Program;
- Generic technologies and techniques, including operations and cross-cutting technologies such as clean space, advanced manufacturing, digital design to produce, and cyber-safety/security;
- Preparatory activities for in-orbit servicing and technology developments in the relevant fields; and
- Technology transfer.

It is a work plan driven envelope element that fully support the development, and exceptionally support co-funded activities in direct negotiation (maximum 50% co-funding).



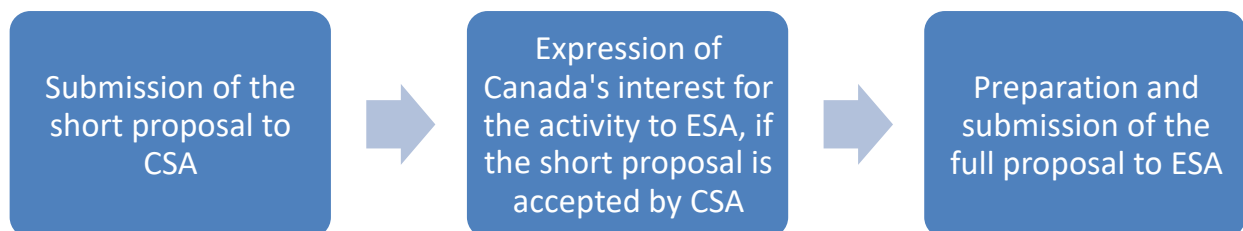
## How to Apply

This element is implemented using the GSTP work plan, in which R&D activities are identified with funding and schedule constraints. The main source of activities is the GSTP Compendium, which contains a list of candidate activities of relevant importance for the future development of space systems. It is available on [EMITS](#) (ESA's equivalent to Canada's Buy & Sell Website). The objective of the Compendium is to trigger discussions among industry and delegations of the GSTP Participating States, so that the activities that Participating States intend to support can be included in the draft work plan update (activities can be proposed by ESA, the industry or the Participating States). The draft work plan is then presented for approval by the delegates of the Participating States at the ESA Industrial Policy Committee. Upon approval, Invitation to Tender/Request for Quotation are issued, restricted to the countries that have expressed interest.

Of note, the Canadian delegation may propose an activity to ESA, whether or not a Canadian company has shown interest in the activity; or may provide indication of financial support for an activity to ESA, whether or not a Canadian company has shown interest in the activity. In addition, ad-hoc targeted proposals that meet GSTP criteria that arise interest from delegations can be considered for the work plan update, in the same way as compendium activity proposals.

The Element "Develop" requires some form of support from the Canadian delegates at the Industrial Policy Committee to be considered by ESA. A short proposal is hence requested, as a mean for the applicant that seeks funding under that program to obtain support from the CSA. To minimize the level of effort required, the template is based on the information that the applicant will have to submit eventually to ESA for the submission of the proposal, with the addition of a few elements specific to Canada, to ensure the selection of proposals is aligned with the ESA Program objectives and Canadian objectives specific to its participation in GSTP. The template is available in the Guidelines for the Preparation of a Proposal under GSTP (this document is available upon request).

The process is as follows:





It is important to note that the entire procurement process (e.g. planning and preparation of invitations of tender, release of invitations to tender, reception, evaluation and selection of proposals, award of contracts, and debriefing to unsuccessful bidders) is managed by ESA.

If you would like to participate in an activity, please contact us so that we can accompany you and take the required actions.

## Element 2 “Make”

Below is a description of the Element 2 “Make” and information about how to submit a proposal.

### Description

The activities performed under the Element “Make” are co-funded with industry. They aim at strengthening worldwide competitiveness in new and existing markets and developing products in response to gaps in the supply chain (e.g. by environmental regulations, migration to new technology and other causes). Depending on the TRL and the type of organization submitting the proposal, ESA could fund up to 75% of the total cost of the proposed activity.

It is an industry initiated, co-funded direct negotiation envelope element for technology maturation leading to products.

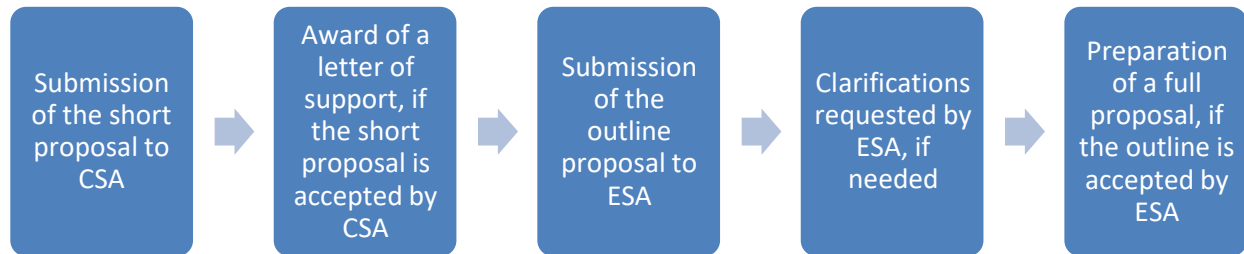
### How to Apply

ESA issued a permanently open call for proposals referred to as Announcement of Opportunity, seeking offers from industry and research institutions at any time for market-oriented technology activities. ESA will consider an offer only if it is accompanied by a written statement of financial support from their national delegation (CSA in the case of Canada).

A short proposal is requested as a mean for the applicant that seeks funding under that program to obtain support from the CSA. To minimize the level of effort required, the template is based on the information that the applicant will have to submit eventually to ESA for the submission of the outline proposal, with the addition of a few elements specific to Canada, to ensure the selection of proposals is aligned with the ESA Program objectives and Canadian objectives specific to its participation in GSTP. The template is available in the Guidelines for the Preparation of a Proposal under GSTP (this document is available upon request).



The process is as follows:



It is important to note that the entire procurement process (e.g. planning and preparation of invitations of tender, release of invitations to tender, reception, evaluation and selection of proposals, award of contracts, and debriefing to unsuccessful bidders) is managed by ESA.

If you would like to submit a short proposal, please contact us so that we can accompany you and take the required actions.

## Element 3 “Fly”

Below is a description of the Element 3 “Fly” and information about how to submit a proposal.

### Description

The activities performed under the Element “Fly” aim at:

- Implementing in-orbit demonstration of technologies, either as products in need of acquiring flight heritage, hosted payloads, cubesats, or complete small missions;
- Conducting investigations and studies to prepare for future missions, in particular breakthrough and new generation types of missions; and
- Conducting ad hoc small missions, including related enabling developments.

Missions can be proposed by ESA, either as to be fully implemented in the Element “Fly” or with programmatic implementation in another program, or by Participating States for implementation in the program, either fully, or shared with a national initiative, and with other participants if desired.

For new technologies or products in need of a flight, typically a minimum TRL of 5 or 6 shall have been achieved at the time of the proposal. The technology flight demonstrator shall lead to an increase in the TRL to level 8-9.



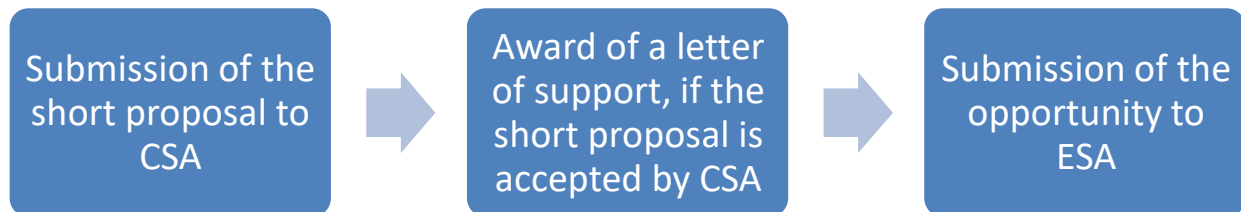


## How to Apply

ESA issued a permanently open call for proposals referred to as an Open Call for Technology Flight Demonstrators and Carrier Flight Opportunities. This open call is open to the space industry, research institutions and national agencies of all GSTP-participating countries. ESA will consider a request only if it is accompanied by a written statement of financial support from their national delegation (CSA in the case of Canada) for both the accommodation study and implementation project.

A short proposal is requested as a mean for the applicant that seeks a flight under that program to obtain support from the CSA. To minimize the level of effort required, the template is based on the information that the applicant will have to submit eventually to ESA, with the addition of a few elements specific to Canada, to ensure the selection of proposals is aligned with the ESA Program objectives and Canadian objectives specific to its participation in GSTP. The template is available in the Guidelines for the Preparation of a Proposal under GSTP (this document is available upon request).

The process is as follows:



It is important to note that the entire technology flight opportunities process (e.g. planning and preparation of open calls, selection of proposals, accommodation studies, flight preparation, carrier integration, launch, and flight data exploitation) is managed by ESA.

If you would like to submit a short proposal, please contact us so that we can accompany you and take the required actions.

Additional information about this GSTP element can be found on the [ESA website](#).

## Proposal Selection Framework

At the beginning of each calendar year, CSA year mark a portion of the funds subscribed at the 2019 ESA Ministerial meeting for allocation during the year. All proposals will be evaluated



by a knowledgeable technical team at CSA upon reception in order to provide early feedback to the applicant.

Based on the assessment made by the CSA experts and pending budget availability, a recommendation will be provided to the CSA upper management team. Upon approval of the recommendation, the ESA Program Office will prepare a letter to inform the applicant whether its proposed activity can be supported or not under GSTP. The amount of support will be determined according to the total cost of the project, as well as the other sources of funds invested by other stakeholders and the applicant.

In addition, before a final decision is made, the CSA may seek input and advice from other organizations, including, but not limited to federal, provincial, territorial, and municipal government agencies and organizations. Finally, it is important to note that CSA will also make its funding decisions based on the best interests of the Canadian space program and in order to promote a balanced approach to favor a healthy, diversified and competitive Canadian satcom industry.

## Contact

Should you have any questions about the cooperation between Canada and ESA, or about how to submit a proposal under GSTP, contact us at [asc.esa\\_programme-esa\\_program.csa@canada.ca](mailto:asc.esa_programme-esa_program.csa@canada.ca).