



National
Defence

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CANADIAN
ARMED FORCES



FORCES ARMÉES
CANADIENNES

Innovation for Defence Excellence and Security

Speed meets Strategy: Building Canada's Hypersonic Innovation Network

Innovation Network
APPLICANT GUIDE




IDEaS

**INNOVATION FOR DEFENCE
EXCELLENCE AND SECURITY**



Canada 

 Innovation Networks	Summary of Key Information
	<ul style="list-style-type: none"> • Funding mechanism: Non-repayable contribution • Maximum amount per proposal: \$1,000,000 • Duration of contribution: Up to the end of January 2028 • Team composition: Proposals must include multidisciplinary teams of partners from at least three separate eligible organizations and/or institutions, one of which must be a Canadian university • Initial recipient: must be a Canadian university

1. Context

The [Innovation for Defence Excellence and Security \(IDEaS\)](#) program supports, expands, and sustains Science & Technology (S&T) community capacity outside of the Department for National Defence (DND) that can generate new ideas and formulate solutions to Canada's current and future defence and security innovation challenges. These innovative solutions are critical for Canada and its allies to mitigate new threats and stay ahead of potential adversaries, while generating knowledge and economic benefits for Canada.

An Innovation Network is a self-organized multidisciplinary group of researchers who work on the advancement of knowledge in a specific domain of common interest. Academics, industry and other partners are encouraged to come together to form collaborative smaller innovation networks, or *Micro-nets*, that perform research on one or more aspects of a Challenge. A micro-net is a multidisciplinary team of at least three eligible organizations/institutions who carry out interdisciplinary research on aspects of a challenge of common interest.

The objectives of the Innovation Networks element are to:

- Encourage, enhance, sustain and support interdisciplinary research collaborations to build a critical mass of expertise and knowledge applicable to the defence and security of Canada;
- Support basic and applied research, analysis, technology development and knowledge transfer leading to innovative solutions to key challenges for defence and security; and
- Enable researchers from varied disciplines and areas of expertise to work together to demonstrate an added value that each researcher, if funded individually, would not have been able to reach alone.

2. The Challenge

This Call for Proposal invites innovators to submit proposals in support of Canada's defence and security related to the Challenge: ***Speed Meets Strategy: Building Canada's Hypersonic Innovation Network.***

This challenge aims specifically to support Canada's NORAD Modernization Plan ([Annex C: Canada's NORAD Modernization Plan - Canada.ca](#)).

In response to the rapid development and deployment of maneuvering hypersonic weapons, the Department of National Defence and the Canadian Armed Forces (DND/CAF) are seeking to stimulate the application of hypersonic technologies, including propulsion, flight dynamics, detection, and materials, in the defence and security domain to understand these weapons. Currently, most research and development work within Canadian academia and industry related to hypersonics focuses on applications for space access. To leverage that work to address DND/CAF needs, the IDEaS program is looking to develop several research micro-nets focusing on defence and security applications, including: hypersonics modelling and simulation, hypersonic ground and flight testing, and vehicle design and integration (including multidisciplinary design optimization and trajectory simulation).

The outcomes of this Challenge concentrate on areas that align with immediate priorities in Canada's NORAD Modernization Plan that develop expertise and advance DND/CAF understanding of hypersonic technologies in aerodynamics, propulsion, structures and materials, and flight control. Areas of research may include, but are not limited to:

- High-fidelity aerodynamic coefficients and flow physics Computational Fluid Dynamics (CFD) predictions for hypersonic flight vehicles;
- Control surface optimization for hypersonic vehicles;
- Rocket and airbreathing propulsion systems for hypersonic vehicles;
- Air intake design for hypersonic vehicles;
- Conventional, novel, and endothermic fuels for hypersonic vehicles;
- Injection, mixing, ignition, and combustion of fuels in engines for hypersonic vehicles;
- Guidance, navigation and control (GNC) algorithms for hypersonic vehicles;
- Novel control actuators for flight vehicles;
- Heat transfer and heat management of hypersonic vehicles;
- Materials and structures for hypersonic vehicles;
- Hypersonic stores separation;
- Ground testing for hypersonic technologies;
- Flight testing for hypersonic technologies; or
- Detection, identification, and tracking of hypersonic vehicles.

As part of the micro-nets, DND/CAF will look for opportunities for knowledge and expertise exchange, thereby increasing confidence in how to counter hypersonic threats. In addition, we will have enhanced capabilities in simulation and testing (ground and flight) to validate models and contribute to collaborations with partners. The benefit to Canada is the development of Canadian network of experts in academia and industry in hypersonic technologies who can support the hypersonic ecosystem. Annex A provides the full Challenge Statement defining the research areas to be addressed.

3. Eligibility

The Call for Proposal (CFP) is open exclusively to multidisciplinary teams of researchers. The primary affiliation of the Micro-net partners must be from at least three separate institutions and/or organizations.

Eligible Lead Applicant organizations or institutions are:

- Canadian university institutions chartered in Canada.

Eligible Partner organizations or institutions are:

- Canadian universities and educational institutions chartered in Canada;
- Canadian incorporated for-profit organizations;
- Canadian incorporated not-for-profit organizations; or
- Canadian provincial, territorial and municipal government organizations.

All organizations/institutions must possess the legal status necessary to enter into a funding agreement.

Federal departments, agencies, or crown corporations, and any person that is employed under one of these, are not eligible for funding.

3.1 Micro-net Team Composition

Each Micro-net must be composed of a minimum of three and up to a maximum of 10 investigators, from any combination of eligible institutions and organizations, with a minimum of 3 separate eligible organizations/institutions. A Canadian university must be the Applicant/Initial Recipient. Each member of the Micro-net must contribute to the objectives of the proposed research project. Post-doctoral fellows are not eligible to act as the applicant or partner.

Applicant/Initial Recipient must be from a Canadian University who is an established scientific investigator and heads a research laboratory and/or leads a research group responsible for the scientific/technical direction and management of the Micro-net's research activities. The Applicant/Initial Recipient serves as the primary scientific point of contact for the Micro-net throughout the application process and during the contribution funding period. The University must agree to assume the administrative and financial responsibility on behalf of the Micro-net.

Initial Recipients are expected to fulfill the following roles and responsibilities:

- Signatory to the Contribution Agreement with DND on behalf of the Micro-net;
- Ensure that all costs submitted to DND are eligible project costs;
- Receive, manage, and distribute DND contribution funds to the allocated Micro-net partners' institutions or organizations (herein referred to as the Ultimate Recipients) in support of eligible activities;
- Establish and manage agreements with Ultimate Recipients and, as required, Micro-net members on collaboration, intellectual property, and funding;
- Monitor and report to DND on activities and achieved results per the Contribution Agreement requirements.

Partners/Ultime Recipients are independent investigators from an eligible organization/institution who may lead a research laboratory or group, who is responsible for a subset of a Micro-net's research activities, and provides expert support to the overall scientific/technical direction of the Micro-net. Ultimate Recipients are eligible to receive funding under this Call for Proposals through the Initial Recipient. The Initial Recipient distributes funds to Ultimate Recipients to complete eligible project activities. Ultimate Recipients enter into a separate agreement with the Initial Recipient to carry out the objectives of the IDEaS Contribution Agreement.

The Applicant/Initial Recipient must justify, by means of a detailed budget linked to specific activities of both Initial and Ultimate Recipients, that a financial contribution is required in order to achieve the proposal's objectives and must demonstrate adequate involvement in the Micro-net's activities to increase the probability of success of the proposed research.

Micro-net minimum composition is: 3 investigators from 3 separate eligible organizations/institutions. Micro-net maximum composition is: 10 investigators from a minimum of 3 separate eligible organizations/institutions.

3.2 Eligible Micro-net Activities

Applications must include proposed research and development activities to be carried out by the Micro-net, to address one or more specific aspect(s) of the defence and security challenge.

This challenge will consider only proposed solutions currently within Technology Readiness Levels (TRLs) 1 to 6 inclusively. IDEaS aim to encourage and progress innovative solutions along the [Technology Readiness Level \(TRL\)](#) maturity scale.

4. Funding

4.1 Available Funding and Duration

Successful applicants will be required to enter into a non-repayable Contribution Agreement with DND (“Canada”). **The maximum contribution per Micro-net is \$1 million. The duration for the provision of funding is up to the end of January 2028.**

The total funding available under this Challenge is expected to be \$6 million. DND reserves the right to not accept proposals or to increase or reduce the amount of available funding at its entire discretion.

4.2 Stacking Provisions and Other Government Assistance

The total Canadian government (federal, provincial/territorial and municipal) assistance cannot exceed 100% of total project costs. Applicants must identify all sources of funding in their proposals and confirm this information in a Contribution Agreement if the proposal is selected for funding.

4.3 Eligible Costs

Eligible costs are those that are approved and incurred by the Initial Recipient and the Ultimate Recipients which, in the opinion of DND, are reasonable and necessary to carry out the eligible Micro-net project activities. Eligible costs will be limited to the Initial and Ultimate Recipients’ actual, non-recurring, and incremental costs that are associated with the delivery of the approved proposal and that are required to achieve the expected results. More details on eligible and ineligible costs are included in Annex C – Eligible and Ineligible Costs.

4.4 Canadian Content

Generally, eligible costs, under all cost categories, are to be incurred in Canada. However, the IDEaS program may support eligible activities and associated costs incurred outside of Canada when necessary to ensure project success. In no case can more than 50% of eligible costs can be incurred outside of Canada. Micro-nets must ensure no more than 50% of total eligible costs are incurred outside of Canada.

4.5 Other Sources of Funding: Cash and In-Kind Contributions

Micro-nets are encouraged to demonstrate relevance and collaboration by leveraging resources from other sources. In-Kind Contributions are cash equivalent goods or services provided by an organization to a Micro-net that represent an incremental expense that would have to be paid for by the Micro-net if not provided.

Cash contributions provide the Micro-net with the flexibility to increase their research allocations, cover expenses outside of the eligible costs of the CFP, and generally expand the scope of the Micro-net. Likewise, in-kind contributions, such as specialized access to data or resources, to intellectual property (IP), salaries, software, and additional administrative overhead costs can provide invaluable support to Micro-nets. These other sources of funding should be directed to the Micro-net and managed by the Initial Recipient in accordance with agreements signed by the Micro-net members.

The value and appropriateness of in-kind contributions shall be vetted by the IDEaS Program. All in-kind contributions are to be considered in calculating the total project costs but are ineligible costs for DND funding under the CFP.

5. Proposal form and submission

5.1 Proposal form

Applicants must use the Innovation Networks *Proposal* form. Applicants are and will remain solely responsible for the accuracy and completeness of their submission. Applicants should read the applicant guide and the challenge statement in its entirety prior to submitting their proposal.

The proposal must be submitted by an eligible Canadian university, by the stated deadline. No proposal submissions will be accepted after the deadline. Proposals not using the DND proposal form will not be accepted for consideration.

Applicants may submit more than one proposal, but project proposals/outcomes must be distinct, standalone, and have no interdependencies. If the proposals are identified as dependent, they will be declared as inadmissible and not be considered further. A member from an eligible organization/institution may participate in more than one Micro-net; however, the project activities must be distinct and have no interdependencies. Recipients participating in more than one selected project must provide actuals reports for eligible costs incurred and paid that are directly related to achieving the objectives for the project which DND funding was provided. The total assistance cannot exceed 100% of actual total project costs.

CFP DEADLINE: APPLICANTS HAVE UNTIL 2:00 PM (Eastern Time), THURSDAY, FEBRUARY 5, 2026, to submit their proposal.

In the proposal, applicants should demonstrate their capability and describe their approach in a thorough, concise and clear manner for carrying out the work. The applicant's responses in the proposal form will form the Statement of Work for the project. The proposal should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the proposal will be evaluated.

To maintain the integrity of the evaluation, evaluators will consider only information presented in the proposal. No information will be inferred, and personal knowledge or beliefs will not be utilized in the evaluation. Applicants should explicitly demonstrate, in sufficient detail, how all criteria are met. Evaluators will take the entire proposal into consideration for each criterion. If information is found elsewhere in the proposal that corresponds to a criterion, evaluators will consider this.

All costs identified in the proposal must be in Canadian dollars.

It is the applicant's responsibility to ensure that the application complies with all relevant federal, provincial and territorial legislation and municipal bylaws.

5.2 Proposal submission

Applicants are required to register and submit their proposal(s) using the [CPC Connect](#) digital platform provided by Canada Post Corporation (CPC). CPC Connect is a digital delivery platform that facilitates sending and receiving confidential messages and documents. Proposals will not be accepted by email. It is the applicant's responsibility to hold an account with CPC Connect and to complete the submission steps to submit the proposal.

- Request your Connect conversation (step 2 below) at least five (5) days prior to the CFP closing.
- Classified proposals will not be accepted for this CFP.

Submission steps

Step	Action	Details
1	Create a CPC Connect account	<p>Existing Account:</p> <ul style="list-style-type: none"> - If you have an existing account, proceed to Step 2. <p>New Account Registration:</p> <ul style="list-style-type: none"> - Create an account on CPC Connect. - Click on "Login to Connect" on the CPC Connect webpage. - Select "Register now" and complete your personal Canada Post profile. - Note: There is no cost to register.
2	Request a Connect conversation	<p>How to Request:</p> <ul style="list-style-type: none"> - Send an email to IDEaS-IN.IDEaS-RI@forces.gc.ca to request a Connect conversation and provide the email address associated with your CPC Connect account. - This request must be sent at least five (5) business days prior to the CFP closing date. Important: Indicate the number of proposals you will submit to ensure individual file numbers are assigned. - The IDEaS program will initiate the Connect conversation and assign a file number for each proposal. <p>Email Notification:</p> <ul style="list-style-type: none"> - The applicant will receive an email notification from CPC prompting them to access the conversation. - Through this conversation, the applicant will be able to submit their proposal before the CFP deadline.
3	Submit the proposal via CPC Connect	<p>Upload Your Proposal:</p> <ul style="list-style-type: none"> - Submit the proposal by uploading it within the Connect conversation. - Ensure submission occurs before the CFP closing date and time. <p>Confirmation:</p> <ul style="list-style-type: none"> - A confirmation message will be provided within the Connect conversation after submission or after the CFP closes.

5.3 Transmission issues or late submissions

DND will not be responsible for any failure attributable to the transmission or receipt of the proposal including, but not limited to, the following:

- Receipt of a garbled, corrupted or incomplete proposal;
- Availability or condition of the CPC Connect service;
- Incompatibility between the sending and receiving equipment;
- Delay in transmission or receipt of the proposal;
- Illegibility of the proposal;
- Security of proposal data; or
- Inability to create an electronic conversation through the CPC Connect service.

Late submissions will not be accepted. Records will be kept documenting the transaction history of all late submissions. The only acceptable evidence of submission time and date is the CPC Connect service timestamp recorded in the conversation history that clearly indicates that the proposal was submitted before the deadline.

6. Proposal Evaluation

Proposals will be reviewed according to the criteria listed in Annex B, Evaluation Criteria.

Proposals will be reviewed by subject matter experts selected by the IDEaS program and may include representatives of other Canadian government departments as well as external consultants.

6.1 Pre-Qualified Proposals

A pool of pre-qualified proposals will be compiled of potential solutions that DND/CAF may consider selecting for funding. Only proposals that pass the mandatory and point-rated criteria will be considered compliant and included in the of pre-qualified pool. Inclusion in the pool does not obligate the Government of Canada to award grants or contributions, nor does it guarantee that a proposal will be selected or funded.

DND/CAF will consider the evaluation results and may make funding decisions based on strategic parameters, such as:

- Operational investment – Justifies operational resource investment.
- Solution distinction – Avoids duplication of existing or planned work by Canada.
- Impact potential – Potential to disrupt or advance the Challenge domain significantly.
- Solution type – Selection across various solution types, methodologies, military environments, or technology readiness levels with preference towards proposals currently at TRLs 3-6.
- Benefit to Canada – Contributes to technological advancement and economic growth in Canada.
- Distribution of investment – Ensures investment across maximum defence and security applications and environments.

Funding decisions are considered final. There is no appeal process.

6.2 Proposal Selection

The IDEaS program may select one proposal, multiple proposals, or no proposals for funding approval. At this stage, all applicants will be informed of the status of their proposal.

Applicants of selected proposals may be requested to provide additional information to support the final funding selection decisions. Additional project analysis may be required, including Financial Risk and Technical Assessments. Failure to submit any information supporting these analyses in a timely fashion may result in elimination from the process.

Before a final decision is made, DND may seek input and advice from other organizations, including, but not limited to, federal, provincial, territorial and municipal government agencies and organizations.

7. Privacy Notice Statement

DND will comply with the federal *Access to Information Act* and *Privacy Act* with respect to proposals received. By submitting personal information, an applicant is consenting to its collection, use and disclosure in accordance with the following Privacy Notice Statement, which explains how the applicant's information will be managed.

Necessary measures have been taken to protect the confidentiality of the information provided by applicants. This information is collected under the authority of the terms and conditions for the IDEaS Transfer Payment Program under DND.

Personal information included in all proposals will be kept along with the proposal results as Information Records of Business Value and retained. This information is protected under the *Access to Information* and *Privacy Act*. According to the *Privacy Act*, data linked to an individual and included in the proposal being

evaluated can be accessed by the specific concerned individual who has rights with respect to this information. This individual may, upon request:

- (1) be given access to his/her data by making an official privacy request through DND for the attention of the Director, Access to Information and Privacy (DAIP), and
- (2) have incorrect information corrected or have a notation attached.

The *Access to Information Act* governs the protection and disclosure of information, confidential or otherwise, supplied to a federal government institution.

Paragraph 20(1) (b) of the Act states that:

a government institution [such as DND] shall refuse to disclose any record requested under the Act that contains financial, commercial, scientific or technical information that is confidential information supplied to a government institution by a third party and is treated consistently in a confidential manner by the third party.

Paragraph 20(1) (b) of the Act sets out two mandatory criteria in order to protect applicants' confidential information supplied to DND from disclosure. First, the applicants' documents supplied to DND must contain financial, commercial, scientific or technical information. Second, the applicant must consistently treat such information in a confidential manner. In other words, DND will protect the applicant's confidential information in its possession as much as the applicant protects said confidential information in their own establishment.

Any Privacy or Access to Information request made under their respective Act and completed, will be retained by DAIP for a duration of two (2) years following after the date the request was responded to. After the retention period of two (2) years, the Privacy or Access to Information request file will be destroyed.

For additional information on privacy matters prior to submitting a proposal, please contact:

Director, Access to Information and Privacy (DAIP)
Department of National Defence (DND)
Telephone: direct: 613-992-0996 or toll free: 1-888-272-8207
Email: ATIP-AIPRP@forces.gc.ca

Applicants shall note that key information related to all contribution agreements (e.g., amount, name of the Initial and Ultimate Recipients and project location) will be made available to the public on DND's website.

8. Enquiries about the CFP

The requirements of this Call for Proposals apply to this call only.

It is the responsibility of the applicant to obtain clarification of the requirements contained herein, before submitting an application. Applicants must send enquiries related to this CFP to IDEaS at:

IDEaS-IN.IDEaS-RI@forces.gc.ca no later than five (5) calendar days before the CFP closing date. Enquiries received after that time may not be answered. Applicants must reference as accurately as possible the numbered item of this CFP to which the enquiry relates and must explain questions in sufficient detail to enable an accurate response.

Questions and Answers received during the CFP may be made available to all applicants.

9. Contribution Agreement Award

Applicants of selected proposals will be invited to enter into a contribution agreement with DND. The ranking and selection of proposals for funding does not constitute a guarantee on the part of Canada that a contribution agreement will be awarded.

The IDEaS program will work with the selected Initial Recipient to develop a contribution agreement based on the proposed projects for signature by the Initial Recipient and DND which will identify the conditions of the contribution, the obligations of both parties, and the conditions under which payments will be made. These terms and conditions must also be reflected in the agreements signed between the Initial Recipient and the Ultimate Recipients.

The amount of support will be determined according to the total eligible funding requested, as well as the other sources of funds.

Recipients should note that until a written agreement is signed by both parties, no commitment or obligation exists on the part of DND to make a financial contribution to any project. Expenditures incurred or paid by the Recipient prior to the signing of such contribution agreement are ineligible.

All funded projects will be announced on the IDEaS website.

10. Other Information

This section contains information which will be relevant only to those applicants whose proposals are selected for funding by DND. The Initial Recipient shall ensure that all agreements with Ultimate Recipients or contractors are consistent with the rights granted in the Contribution Agreement between the Initial Recipient and Canada.

10.1 Act Respecting the Ministère du Conseil Exécutif (M-30) for Québec Applicants

The Act Respecting the Ministère du Conseil Exécutif (M-30) may apply to an applicant that is a municipal body, school body, or agency located in the province of Québec. These applicants will be required to complete an additional information form and, if they are subject to the requirements of the Act, to obtain written authorization and approval from the Government of Québec prior to execution of any contribution funding agreement.

10.2 Basis of Contribution Payments

The Government of Canada's fiscal year begins April 1 of any year and ends on March 31 in the following year. The Contribution Agreement will outline the fiscal year budget; start and end date of eligible costs; and documentation required for allocation of payments. Under no circumstance shall DND funding be provided or used for any eligible costs incurred until a Contribution Agreement has been executed between DND and the Initial Recipient.

DND will make contribution payments to the Initial Recipient in the form of advance payments upon receipt and acceptance by DND of the Recipient's annual forecast of cash flow requirements report signed by the Initial Recipient's duly authorized officer. Cash flow reporting requirements will be outlined in the contribution agreement and include:

- a) forecast report: projection of the Micro-net's eligible expenditures to be incurred each fiscal year; and
- b) actuals report: summary of eligible expenditures incurred and paid during the reporting period.

An authorized officer is an appointed official (e.g. chief executive officer, vice president, chief financial officer, board chair, director, or direct owner) to whom the Initial Recipient has granted the legal authority to create financial obligations on its behalf.

The Initial Recipient shall use the advance payment only for payment of eligible costs (see Annex C – Eligible and Ineligible Costs).

Initial Recipients are expected to spend all funds received by the end of the fiscal year before receiving an annual advance payment. Where an advance payment is not fully expended in a fiscal year for which it was provided, DND may consider the remaining balance as an overpayment that is subject to the contribution agreement overpayment terms. This includes either the reduction of the amount of the contribution equivalent to the overpayment amount; or repayment by the Initial Recipient to DND of the overpayment amount; together with interest calculated in accordance with the federal *Interest and Administrative Charges Regulations*.

The Initial Recipient must be prepared to provide supporting documents related to all eligible expenditures incurred.

Final payment will not be made until all agreed-upon project activities have been completed and are deemed acceptable by DND. In order to ensure appropriate project oversight, a reasonable holdback may be applied and released once all conditions of the contribution agreement have been met.

10.3 Redistribution of Funds

Approval by DND is required prior to the redistribution of funding by a contribution Recipient to one or more individuals or entities.

Contribution Agreement provisions will address the requirements of the Treasury Board Policy on Transfer Payments and the Terms and Conditions of the program. These Terms and Conditions must also be reflected in the agreements signed between the Initial Recipient and the Ultimate Recipients.

If an Initial Recipient redistributes funding to one or more Ultimate Recipients:

- the Initial Recipient has independence in the choice of Ultimate Recipients, with minimal guidance from DND, and will not be acting as an agent of the government in making distributions;
- the Initial Recipient funding agreement will address the provisions set out in Appendix G (27 to 34) of the [Directive on Transfer Payments](#); and
- Ultimate Recipients receiving redistributed funding must be approved eligible recipients and must utilize funding for the type and nature of eligible costs as defined in Annex C – Eligible and Ineligible Costs.

10.4 Research Security

In March 2021, the Government of Canada released a [Research Security Policy Statement](#) encouraging all members of the research community, including academia, private sector, and government to take extra precautions to protect the security of research, intellectual property, and knowledge development. Canada is working to develop specific risk guidelines to integrate national security considerations into the evaluation and funding of research projects and partnerships. These guidelines will better position researchers, research institutions and government funders to undertake consistent, risk-targeted due diligence of potential risks to research security and provide recommendations for complementary tools and measures to ensure researchers and research organizations working with national security partners have the capacity and resources necessary to implement the guidance.

When available, it is envisioned that the guidelines will be integrated in the due diligence assessment process undertaken by DND in support of research and development initiatives. In the meantime, recipients are encouraged to work collaboratively to identify and mitigate potential security risks by utilizing existing tools available through the [Safeguarding Your Research portal](#) and [Safeguarding Science's](#) workshops. Recipients should conduct consistent and appropriate due diligence review of potential security risks to research activities and put in place timely measures to appropriately mitigate these risks.

DND may review project activities on national security grounds to ensure any national security risks are identified and addressed.

10.5 Reporting Requirements

Specific reporting requirements will be defined in the Contribution Agreement. Each Micro-net will be assigned to a DND Integrator who is a DND/CAF subject-matter expert assigned to assess the progress of Micro-net activities and act as a link between the Micro-net and the defence and security community. Regular communication between DND-IDEaS Program, Integrator, and the Initial Recipient will be implemented to monitor progress. DND will request the Initial Recipient to report on but not limited to the following:

- Three (3) Progress Reports per fiscal year – 1 verbal and 2 written. An example of information requested within the Progress Reports may include the following:
 - Status of progress achieved on project activities and progress towards objectives;
 - Report on Scientific/Technical Advancements;
 - Number of peer-reviewed publications and/or patent applications;
 - Number and type of presentations at scientific conferences, and other outreach activities;
 - Number and type of new partnerships and/or collaborations created or sustained;
 - Amount of additional funding obtained through leveraging of contribution funds;
 - Collaboration check between Initial and Ultimate Recipients;
 - Number of highly qualified personnel supported; and
 - Information on Gender Based Analysis Plus (GBA+).
- Forecast of Cash flow Requirements and Record of Expenditures/Actuals Report (semi-annual or quarterly).
- Annual Challenge Meeting / Engagement to bring together all Micro-net projects selected under the Challenge. See Challenge Engagement section below.

DND may request that other project performance measurement metrics be provided.

10.6 Challenge Engagement

IDEaS anticipates organizing a challenge engagement meeting for this S&T challenge. Funded Micro-nets will be required to participate and present recent developments in their research, and exchange information. The purpose of the challenge engagement is to show case the work of the Micro-net and engage other innovators, officials from DND and other government departments. Each Micro-net will provide a general overview, project background and overview; key findings and advances; and highlight successes. The event planning and logistics will be coordinated by DND. In the planning of the proposed project, Micro-nets should account for member participation in two challenge engagements.

10.7 Communication Activities

The Micro-net's activities, results and accomplishments should be conveyed to external audiences, including potential participants from all sectors, public policy makers, the media and the public. Micro-nets are encouraged to communicate or publish their web sites and other materials in both official languages where possible and as appropriate for their audiences.

The Initial Recipient must, prior to publication, provide notification and a copy of publications, including without limiting, proposed scientific publications, reports, demonstrations, conference proceedings and presentations arising from the Micro-net's work (both Initial and Ultimate Recipients) to the IDEaS program for review and to determine if information could be sensitive or prejudicial to national security to which DND may impose measures for the Initial/Ultime Recipient to protect national security.

The Initial Recipient shall acknowledge Canada's Contribution in all information made public that is produced as part of the Project by mentioning the Micro-net is made possible through the contribution of the Innovation for Defence Excellence and Security (IDEaS) Program of the Department of National Defence, in conjunction with the Canada wordmark. The Initial Recipient must make a reasonable effort to notify the IDEaS program at least fifteen (15) work days prior to the Communication. The IDEaS program will provide approved acknowledgement of funding and/or disclaimer script/wording.

10.8 Intellectual Property

All intellectual property (IP) rights that arise as a result of this program shall vest in the Recipient. Canada may, at its sole discretion, include a provision in the Contribution Agreement requiring that the Recipient grant Canada, in perpetuity, a non-exclusive, irrevocable, royalty-free and world-wide licence, to use or have used, the intellectual property for government purposes. This licence allows Canada to do anything that it would be able to do if it were the owner of the IP, other than exploit it commercially, or transfer or assign ownership of it.

10.9 Conflict of Interest

The Initial Recipient's University should consider any potential or perceived conflict of interest against its own conflict of interest guidelines. If selected for funding, the program may request documentation showing that the University is aware and has considered any potential or perceived conflict against its own conflict of interest guidelines. The Contribution Agreement will include Conflict of Interest terms outlining that the Initial Recipient shall notify DND of any conflict of interest situation.

10.10 Audit Rights

The Initial Recipient must:

- keep proper accounts and records regarding the project(s), for at least six (6) years after the project completion date;
- permit Government of Canada representatives to audit, inspect and make copies of those accounts and records at all reasonable times, up to six (6) years after the project completion date;
- grant the Government of Canada's authorized representatives access to audit and inspect the qualifying project and related facilities;
- furnish the Government of Canada's authorized representatives with such information as they may from time to time reasonably require with reference to the documents referred to herein; and
- promptly refund to DND any overpayments of the contribution disclosed by an audit, no later than thirty (30) calendar days from the date of Canada's notice.

Annex A – Challenge Statement

Speed Meets Strategy: Building Canada's Hypersonic Innovation Network

In response to the rapid development and deployment of maneuvering hypersonic weapons, the Department of National Defence and the Canadian Armed Forces (DND/CAF) are seeking to stimulate the application of hypersonic technologies, including propulsion, flight dynamics, and materials, in the defence and security domain to understand these weapons.

What IDEaS Provides

Up to \$1,000,000 over two years to develop a research micro-network, known as micro-net, to stimulate collaboration and build networks of expertise in support of Canada's current and future defence and security needs.

What Innovators Bring

Led by a Canadian university, innovators bring a self-organized multi-disciplinary group of researchers to collaborate and advance research in the hypersonic technology domain that have DND/CAF applications, specifically: propulsion, flight dynamics, guidance-navigation-control, detection, and materials.

The Challenge

In response to the rapid development and deployment of maneuvering hypersonic weapons, the Department of National Defence and the Canadian Armed Forces (DND/CAF) are seeking to stimulate the application of hypersonic technologies, including propulsion, flight dynamics, detection, and materials, in the defence and security domain to understand these weapons. Currently, most research and development work within Canadian academia and industry related to hypersonics focuses on applications for space access. To leverage that work to address DND/CAF needs, the IDEaS program is looking to develop several research micro-nets focusing on defence and security applications, including: hypersonics modelling and simulation, hypersonic ground and flight testing, and vehicle design and integration (including multidisciplinary design optimization and trajectory simulation).

This challenge aims specifically to support Canada's NORAD Modernization Plan ([Annex C: Canada's NORAD Modernization Plan - Canada.ca](#)).

Formation of Innovation Networks

Recognizing that successful and sustainable research networks take time to build, this call for proposals is meant to establish the creation of small innovation networks, or micro-nets.

The benefit to Canada and DND/CAF will be the development of a critical mass of researchers, highly qualified personnel, and expertise within the Canadian innovation community that supports basic and applied research.

Background and context

Recognizing the impact that hypersonic technologies will have across the defence and security enterprise, DND has published a strategy to guide investments in hypersonics-related science and technology (<https://science.gc.ca/site/science/sites/default/files/documents/1231-trend-card-hypersonic-weapons.pdf>). To leverage ongoing research and industrial investments and advances in hypersonic technologies in order to enhance capabilities in the defence and security context there are three domains where innovation is required: hypersonics modelling and simulation, hypersonic ground and flight testing,

and hypersonic vehicle design and integration. Proposals are being sought that will develop and advance Canadian expertise in hypersonic technologies within the areas of propulsion, flight dynamics, guidance-navigation-control, detection, and materials.

Hypersonics Modelling and Simulation

Hypersonic technologies represent significant challenges for the modelling and simulation community. High-fidelity Computational Fluid Dynamics (CFD) modelling of flow properties in and around vehicles in hypersonic flight requires a deep understanding of the underlying flow physics. This includes gas dynamics, heat transfer, shock-boundary layer interactions, fluid-structural interaction, reacting flows, and multiphase flows. Current modelling and simulation tools available in Canada may have to be further developed or new ones created. The development of expertise in the design and optimization of propulsion systems such as rockets, ramjets, scramjets, Rotating Detonation Engines, and combined cycles is required to properly model and develop these engines in Canada. Modelling and simulation of the processes in these engines, including injection, mixing, ignition, and combustion, are required to predict their performance and exhaust signatures. Realistic flight simulations of hypersonic vehicles require a high level of confidence in the underlying aerodynamic and propulsion input data as well as good understanding of the guidance, navigation and control (GNC) systems. The capability to optimize a vehicle's control surfaces and its GNC system is essential to properly simulate the flight of a hypersonic vehicle. The properties of materials play a key role in any modelling and simulation of hypersonic vehicles. All of the above efforts will require high quality validation data from state-of-the-art experimental facilities and measurement techniques in hypersonic technologies such as aerodynamics, propulsion, heat transfer, materials, flight controls, and signatures.

Hypersonic Ground and Flight Testing

Due to the extreme environmental conditions flight vehicles endure in the hypersonic regime, ground and flight experimentation in technologies such as aerodynamics, propulsion, structures and materials, and flight control are extremely challenging.

The development of ground testing facilities and expertise to operate them are essential to generate the high-quality experimental test data needed to properly validate the modelling and simulation tools. Ground testing facilities of interest include impulse (short duration) test facilities as well as high enthalpy, long duration facilities.

Lower launch accelerations from vehicles with rocket or airbreathing propulsion systems during flight tests mean test objects do not need to be as robust as for gun launch, but much larger test ranges would be required to do this safely. Reliable onboard control and possibly auto-destruct systems are required on the vehicle. In-flight data measurement is an additional challenge.

On the other hand, flight testing allows for larger models and more on-board instrumentation to generate unique validation data.

As Canada's hypersonic program matures, the expertise to launch flight vehicles will be critical. As such, it is of prime importance to develop the capacity and the expertise to do so.

Hypersonic Vehicle Design and Integration

Integration of the various subsystems in a hypersonic vehicle requires knowledge and expertise in aerodynamics, propulsion, GNC, heat transfer, and materials amongst other things. Constraints such as mass, volume, power, and heat management represent significant challenges in designing a viable hypersonic vehicle.

A capacity to design and integrate realistic hypersonic vehicles is essential for Canada to better understand their performance characteristics.

Expected Outcomes

The outcomes of this Challenge concentrate on areas that align with immediate priorities in Canada's NORAD Modernization Plan that develop expertise and advance DND/CAF understanding of hypersonic technologies in aerodynamics, propulsion, structures and materials, and flight control. Areas of research may include, but are not limited to:

- High-fidelity aerodynamic coefficients and flow physics CFD predictions for hypersonic flight vehicles;
- Control surface optimization for hypersonic vehicles;
- Rocket and airbreathing propulsion systems for hypersonic vehicles;
- Air intake design for hypersonic vehicles;
- Conventional, novel, and endothermic fuels for hypersonic vehicles;
- Injection, mixing, ignition, and combustion of fuels in engines for hypersonic vehicles;
- GNC algorithms for hypersonic vehicles;
- Novel control actuators for flight vehicles;
- Heat transfer and heat management of hypersonic vehicles;
- Materials and structures for hypersonic vehicles;
- Hypersonic stores separation;
- Ground testing for hypersonic technologies;
- Flight testing for hypersonic technologies; or
- Detection, identification, and tracking of hypersonic vehicles.

As part of the micro-nets, DND/CAF will look for opportunities for knowledge and expertise exchange, thereby increasing confidence in how to counter hypersonic threats. In addition, we will have enhanced capabilities in simulation and testing (ground and flight) to validate models and contribute to collaborations with partners. The benefit to Canada is the development of Canadian network of experts in academia and industry in hypersonic technologies who can support the hypersonic ecosystem.

Annex B – Evaluation Criteria

Applicants must complete the DND Proposal form with sufficient detail to enable Canada to assess the proposal against the established evaluation criteria. The information provided should clearly demonstrate how the proposal meets each criterion.

Proposals will be assessed using mandatory criteria (MC) and Point-rated criteria (PRC).

To be eligible for funding, proposals must meet all mandatory criteria. The responsibility lies with the Applicant to demonstrate that the proposed project clearly meets each criterion.

Mandatory Criteria (MC)

Criteria	Description
Micro-Net Composition	The applicant/partner is an eligible Canadian recipient. The applicant must provide a list of Partner Organizations/Institutions and describe the core activity of the partner organizations and their expertise related to the proposed solution. Explanation must be provided on how each partner organization will be actively involved.
Budget & Timeline	The amount of funding requested from DND must not exceed the maximum of \$1,000,000, for a maximum period up to the end of January 2028, and the Applicant must provide the information required in the Proposal form: Table 1 – Work Plan - Project Activities & Budget.
Alignment of Proposed Solution to the Challenge	The applicant must describe the project objective(s) and demonstrate the scientific and technological basis of how the solution meets the outcomes of the Challenge.
Technology Readiness Level (TRL) of Proposed Solution	The applicant must identify the current TRL of the proposed solution and must be within 1 and 6 (inclusive). The applicant must describe the research and development (R&D) activities that have taken place to bring the proposed solution to the stated TRL.

Point-Rated Criteria (PRC)

Criteria	Description
Innovation - Novelty	The applicant must demonstrate the novelty of the proposed research and how it advances basic and applied research, analysis, technology development and knowledge transfer in support of the Challenge.
Key Outcomes	The applicant must list the proposed research key expected outcomes and outline how the outcomes have the potential to be transformative and/or achieve competitive advancements over existing technologies.
Scientific or Technical Quality	The applicant must describe in detail the proposed scientific or technical strategy, methodology and analyses that will be implemented to accomplish the stated outcomes. The applicant must formulate the research questions and goals and outline the key scientific or technical risks, potential impacts, and mitigation strategies.

Criteria	Description
Micro-net Management Capabilities	The applicant must describe the Micro-net Applicant/Lead Recipient's management capacity and structure to deliver and complete the research project. Address as applicable: financial and management systems and controls; technological and operational capabilities; human resource management/requirements; and previous project management experience. The applicant should confirm the Applicant/Lead Recipient's capabilities to manage the disbursement of funds to Partners/Ultimate Recipients and ensure accountability of eligible expenditures. The applicant must describe the potential management/administrative (non-scientific or technical project risks), potential impacts and mitigation strategies.
Micro-net Scientific or Technical Capabilities	List the Micro-net team partners and include information for each on: time commitment, responsibilities in the proposed project, and areas of expertise & relevance to the proposal. Notes: Time commitment: provide hours/week, and total months of active involvement in the Micro-net. Responsibilities: for example "overseeing activity x and y" or "performing statistical analyses for activity x and y" Expertise: indicate the formal discipline (e.g. Biochemist, Electrical Engineer, etc.), any particular areas of expertise brought to the Micro-net, and a brief description of the relevance of this expertise to the success of the proposal. Publications: if applicable, list and provide reference links to the partner's last five most relevant journal publications published in the last five years.
Micro-net Collaboration	The applicant must demonstrate in detail how the Micro-net partners will work collaboratively on project activities and outline the benefits/advantages of the multidisciplinary membership.
Sustainability	The applicant should describe how the Micro-net activities will be sustainable after DND funding concludes. Indicate whether it is anticipated that any project activities, collaboration, and/or work that builds on this project will continue beyond the period of DND funding.
Benefits to Canada	Describe the general benefits to Canada and to stakeholders by outlining how the proposed research will strengthen Canadian capabilities such as the Technological benefits (e.g. Technology Readiness Level (TRL) stages advanced, lasting impact on the field in Canada, creation of intellectual property), Operational benefits (e.g. novel insights by synthesizing a body of knowledge, integrating existing capabilities, employing novel user technologies, or through other means); Social and economic benefits (e.g. patents filed, jobs created, training opportunities for students, revenues expected, cost reductions from using your solution over solutions commercially available today), and other benefits (e.g. if the project includes a diverse team, leadership positions held by women, Indigenous peoples, youth, persons with disabilities, visible minorities).
Gender-Based Analysis Plus	The applicant must select the statement that best reflects how GBA+ and its factors have been considered and incorporated within the proposed solution and substantiate the statement.

Criteria	Description
	<p>The applicant must substantiate what, if any, GBA+ analysis has been conducted and the associated results to demonstrate GBA+ considerations, and what analysis is planned to demonstrate future GBA+ considerations. The applicant must provide sufficient and clear information that permits concrete analysis that the proposal addresses one of the four scenarios.</p> <p>(GBA+) considerations have been identified</p> <p><i>Integration of GBA+:</i> The proposal clearly and fully demonstrates how Gender-Based Analysis Plus (GBA+) consideration is embedded in the overall analysis. And when pertinent, its findings are mentioned throughout the document.</p> <p><i>Intersectionality and impact:</i> Multiple relevant intersectional factors and their compounding importance have been clearly considered in assessing the potential impact of this initiative (the proposal) on diverse groups of Canadians.</p> <p><i>Data:</i> The data presented is thorough and clearly supports the conclusion.</p> <p><i>Response:</i> The proposed response clearly addresses all the issues emerging from the GBA+ analysis</p> <p><i>Monitoring:</i> Indicators clearly stem from integration of GBA+ considerations to overall analysis and propose intersectional targets where relevant. Collected data supports indicators.</p> <p>No GBA+ considerations have been identified</p> <ul style="list-style-type: none"> • There is insufficient data or information available to rule out the possibility of GBA+ considerations. In this regard, the proposal has set out a plan to secure the information or data that would be needed for the GBA+ analysis. • The proposal shows evidence that GBA+ analysis was undertaken and supports the conclusion of no GBA+ considerations.
Work Plan	<p>The applicant must clearly describe the feasibility and approach of the work plan to achieve the proposed solution's objectives in the research proposal. Describe how the approach is adequately developed, well-reasoned and appropriate.</p> <p>The applicant must demonstrate a feasible work plan by completing information required in the Proposal form: Table 1 – Work Plan - Project Activities & Budget and must provide details for each activity of the Research Proposal including expected outcomes, anticipated challenges/risks, partner involvement, budget and other sources of funding for each activity.</p> <p>Notes: Budget forecast will be required for each fiscal year of the project duration.</p>

Criteria	Description
	<p>Year 1 is from project commencement estimated for April 2026 to March 31, 2027; Year 2 is from April 1, 2027 to January 31, 2028. The proposed solution's project activities funded by DND will conclude before the end of January 2028.</p> <p>For timelines, use monthly increments (i.e. M1 to M24 for a 2-year project) to enter both the Start and End dates for each activity. For example, a nine-month activity starting in the twelfth month of the project should be indicated as starting at M12 and ending in M20.</p> <p>Micro-nets must ensure no more than 50% of total eligible costs are incurred outside of Canada.</p>

Annex C – Eligible and Ineligible Costs

Eligible costs are limited to the following categories:

Cost Category	Restriction
1. Stipends, salaries and benefits for students, research assistants and technical staff	Must be directly related to project activities and reflect exact costs associated with payment of salary and benefits. Benefits: maximum 20% of salaries Salary: not to exceed \$200,000 per full-time equivalent (excluding benefits).
2. Equipment acquisitions or rentals	Maximum \$25,000 per acquisition Maximum 20% of total approved eligible costs
3. Consultant services (provided by third parties not affiliated with the recipient)	None
4. Laboratory analysis services	None
5. Materials and supplies	Meets at least one of the following conditions: a) is an expendable tangible property; or, b) has a useful life of 1 year or less; or, c) has a cost of less than \$2,000.
6. Publication, outreach and communication costs	None
7. Travel expenses	Must be in accordance with the National Joint Council's Travel Directive
8. Administrative overhead costs	15% of eligible costs before overhead
9. Ineligible costs	See below.

1. Stipends, salaries and benefits for students, research assistants and technical staff

Salaries and benefits are eligible if they are directly related to project activities, including project management, and reflect the exact costs associated with the employees.

Benefits are defined as employment costs paid by the employer and may include the following:

- Employer's portion of CPP/QPP
- Employer's portion of Employment Insurance (EI)
- Employer's portion of group insurance
- Employer's pension contributions

Benefits must not exceed 20% of an individual's salary.

Maximum remuneration

Contributions from DND funds toward the total annual remuneration (fixed or variable) of each member must not exceed \$200,000 per full-time equivalent (excluding benefits). This maximum applies to all positions (including employment contracts) and shall be pro-rated on the basis of the proportion of time worked relative to the full-time equivalent.

2. Equipment acquisitions or rentals

Equipment is defined as any item (or interrelated collection of items comprising a system) which is used wholly or in part for the research proposed and meets all three of the following conditions:

- 1) non-expendable tangible property;
- 2) having a useful life of more than one year; and,
- 3) a cost of \$2,000 or more.

An item that fails to meet all three conditions listed above shall be classified as materials and supplies.

The equipment category also includes research infrastructure such as scientific collections and information databases used wholly or in part for the proposed research.

The Recipient will be responsible for obtaining the fair value of equipment at the time of purchase. Equipment category must not exceed \$25,000 per acquisition and 20% of total approved eligible costs.

3. Consultant services (provided by third parties not affiliated with the recipient)

Upon request, recipients will provide DND a copy of contracts for services under the project. The Contribution Agreement should not be used or replicated for contracting with other parties. A recipient's own contract should detail the activities and outcomes to be achieved under that contract, the costs, and deliverables.

It is the responsibility of the recipient to ensure that all costs from service providers providing contracted services are eligible project costs.

4. Laboratory analysis services

Examples include physical, chemical or biological property analysis of samples, standardized testing laboratory services, and calibration services from fee-for-service laboratories.

5. Materials and supplies

Material and supplies include items that meet at least one of the following conditions:

- 1) expendable tangible property; or,
- 2) useful life of 1 year or less; or,
- 3) a cost of less than \$2,000.

As an example, a laptop computer that costs less than \$2,000 would be considered a consumable even though it is a non-expendable tangible item with a useful life of more than one year.

6. Publication, outreach and communication

This cost category may include publication costs related to web support, newsletters, brochures, translation costs, printing and mailing costs, public relations associated expenses, and the costs of publishing in open access journals and/or outreach costs related to scientific conference fees relevant to the project activities.

7. Travel Expenses

Travel expenses must be incurred in accordance with the [National Joint Council travel directive](#).

8. Administrative overhead

Administrative Overhead costs are indirect expenditures incurred by recipients, which are required for the research activities, but cannot be specifically identified as project costs. These costs relate to the use of the organization's resources, which may include, but are not limited to:

- Administrative support (e.g. accounting, payroll administration, meetings);
- Information Technology support;
- Internet, telephone, excluding long-distance charges;
- Use of photocopiers, fax machines, and other office equipment;
- Use of existing workstations, including furnishings and equipment (e.g. computers, scanners);
- Normal office software (not including software specifically required for the project);
- Memberships and subscriptions only if required to complete project activities;

- Staff recruitment and training;
- Routine laboratory and field equipment maintenance (e.g. oil changes);
- Building occupancy and operating costs (i.e. use of space); and,
- Facilities maintenance.

The administrative overhead costs cannot exceed 15% of the total Eligible Expenditures (before overhead).

9. Ineligible Costs

Ineligible costs include, but are not limited to, the following:

- Salaries and benefits for university investigators receiving direct and continuous salary through the university;
- In-kind contributions;
- Professional training or development, such as computer or language courses;
- The purchase of land or buildings;
- Costs of moving a lab;
- The purchase or lease of private/personal vehicles, vehicle maintenance costs or “Rental” charges for company-owned vehicles;
- Assets and capital items not specifically required for the execution of the project;
- Normal costs of establishing a commercial operation;
- Costs for activities that are deemed to be part of normal business practice for any Recipient, such as: Review engagements and audits, unless required in the agreement, Board of Directors’ meetings, Insurance
- Depreciation;
- Interest or overdraft charges and credit card fees;
- Refundable portion of the GST/HST, value-added taxes, or other items for which a refund or rebate is receivable;
- Hospitality – such as catering, alcohol, entertainment, honorariums, gifts (e.g., gifts for speakers or facilitators);
- Monthly parking fees for vehicles, unless specifically required for field work;
- Costs of regular clothing;
- Membership fees, unless specifically required for the project, must not already have membership;
- Discretionary employee benefits (e.g., parking at employer’s location, relocation costs for employees hired for the project, supplementary employment insurance benefits for maternity/paternity leave, staff awards and recognition);
- Patent fees;
- Costs for activities intended to directly influence/lobby governments;
- Direct marketing, business promotion or one-on-one extension types of activities;
- Costs associated with the review of graduate and PhD thesis; and,
- Other costs not specifically required for the project.