

Applicant Guide for a Counter Uncrewed Aerial Systems (CUAS) Concept Development Project Proposal

Window #2

Seeking CUAS solutions that can detect and/or defeat Micro and Mini Uncrewed Aerial Systems (UAS) with systems that can be integrated into the broader military command and control systems.

Use this Guide if wish to propose a developmental solution that has not yet completed TRL 5. Under this opportunity you are eligible for up to \$2,500,000 in funding.

Proposals will be accepted up until the date and time posted on the website.



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Guide changes from Window #1 to Window #2

This Window #2 Guide is identical to the CUAS Window #1 Guide used in October 2023 with the following significant changes or highlights:

1. Window #1 is now closed and only submissions for Window #2 Concept Development proposals will be accepted. For completeness, all references to Window #1 are still retained in the Guide, but without correction to its verb tense.
2. In Annex B, “Evaluation Criteria”: When multiple evaluators are used to evaluate a single submission:
 - Prior to a final evaluation of a FAIL on any mandatory Pass/Fail criteria, agreement from all involved evaluators will be established.
 - For criteria with a point score, the average score of all evaluators on that criteria for that submission will be used.
3. The scientific and technical risk assessment in Annex C and the project risk assessment in Annex D are only completed for the solutions that are provisionally selected for funding as part of the final stages of the selection process. Those risk results may influence the final selection decisions.

***** Please read the Applicant Guide for each CUAS opportunity for full details. *****

Interdependency between the

- **CUAS Concept Development proposal opportunity and**
- **CUAS Sandbox 2024 prototype demonstration opportunity**

Applicants may submit more than one proposal and use both opportunities, provided the solutions are standalone and have no interdependencies. Note that the same solution cannot be submitted to both opportunities concurrently as the TRL requirements are distinct.

These two opportunities are interdependent as there is no benefit for Canada to select and fund low TRL concepts unless they can surpass what higher TRL solutions can already do, even if from a different applicant. To enable interdependent selections in each development opportunity, the following will occur, as detailed throughout this Guide:

1. CUAS Application window #1, October 2023

This opportunity is now closed. It is retained in this updated Guide for reference only.

- Sandbox prototypes can be submitted using the ***CUAS Sandbox 2024 Applicant Guide***, with the Sandbox taking place May 27, 2024, to June 21, 2024, in Suffield Alberta.
- Concept Development Project Proposals can be submitted using the ***CUAS Concept Development Applicant Guide***.
 - Selections will focus on solutions, if any, that can substantively leap-frog higher TRL solutions, including those concurrently submitted for the CUAS Sandbox.

2. CUAS Application window #2, accepted up until the date and time posted on the website.

- This is solely seeking additional **Concept Development Project Proposals**, as the Sandbox participation is already determined by Window #1.
- Solutions not selected at the earlier Window #1 can be amended, reimagined, and resubmitted if desired. This can include unselected Sandbox solutions if their concept is being redesigned and has reverted in its TRL.
- Entirely new submissions and innovators are welcome to participate.
- Selection of any new Window #2 concepts will only be taken:
 - after the results of the CUAS Sandbox are known (in July 2024) in order to again enable the interdependencies between what technologies and successes or failures are experienced at the Sandbox versus the Window #2 concepts; and
 - with similar interdependent consideration of the solutions and progress of any concept development projects selected at Window #1.

***** Please read the Applicant Guide for each CUAS opportunity for full details. *****

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1 Introduction

1.1 CUAS Concept Development Call for Proposals (CFP) overview

This CFP is an invitation to innovators to submit innovative Science and Technology (S&T) proposals in support of Canada's defence, security, and public safety. The Department of National Defence and the Canadian Armed Forces (DND/CAF) and its defence and security partners (RCMP, Public Safety, etc.) are seeking Counter Uncrewed Aerial Systems (CUAS) solutions that can detect and/or defeat Micro and Mini Uncrewed Aerial Systems (UAS) with systems that can be integrated into the broader military command and control systems. The full challenge description is at Annex A.

This CFP invites proposals for CUAS Concept Development projects with two windows of opportunities to apply:

- Window #1: Proposals must be received by October 12, 2023, at 2:00 PM EDT.
- Window #2: Subject to confirmation, proposals will be accepted up until the date and time posted on the website.

1.2 The CFP multi-stage process (explained in detail throughout this Guide)

Stage 1: Proposal preparation and submission (part 3 of this Guide)

Stage 2: Proposal evaluation and selection (part 4 of this Guide). DND/CAF may select one, multiple, or no proposals for final funding approval with a Contribution Agreement award.

Stage 3: Contribution Agreement award. Applicants of the selected proposals will be invited to enter into a formal Contribution Agreement with DND/CAF for a Project Phase 1.

Stage 4: Project Phase 1 – initial effort. Up to 9 months and \$500,000.

- For Window #1 Phase 1 project planning purposes, the intent is to have any resulting Contribution Agreements agreed and signed by December 31, 2023, permitting the use of IDEaS funds for the project commencing in January 2024.
- For Window #2 applicants, the intent is to have any resulting Contribution Agreements agreed and signed by September 30, 2024, permitting the use of IDEaS funds for the project commencing in October 2024.

Stage 5: Transition to Phase 2 (part 5 of this Guide). There is a definitive IDEaS program intent to start Phase 1 with multiple applicants, even if each is at a different TRL, and to substantially reduce the number of innovators approved to continue into Phase 2 with the higher levels of funding.

Stage 6: Project Phase 2 – advanced effort. Only for those selected to continue into Phase 2, up to an additional 15 months and an additional \$2,000,000 of funding.

Stage 7: Post-Contribution Agreement continued development. At the conclusion of the IDEaS Contribution Agreement, the expectation is that the applicant will continue development via other means. IDEaS funding provided via a Contribution Agreement is intended to elevate

innovation solutions to a higher readiness level, rather than fund them to commercial production.

2 GENERAL INFORMATION

2.1 IDEaS background

As part of *Strong, Secure, Engaged: Canada’s Defence Policy*, the Department of National Defence (DND) has launched the Innovation for Defence Excellence and Security (IDEaS) program. The IDEaS program supports, increases, and sustains S&T community capacity external to DND/CAF 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. Innovators willing to develop solutions to emerging problems from their own unique perspectives are encouraged to participate in the IDEaS program.

IDEaS aims to encourage and progress innovative solutions along the Technology Readiness Level (TRL) maturity scale, as described on the IDEaS website (<https://www.canada.ca/en/department-national-defence/programs/defence-ideas/faq.html>).

2.2 Terminology

This table outlines the terminology employed throughout the CFP. Applicants should visit the [IDEaS website](#) for specific information on the IDEaS program.

Term/Acronym	Definition
S&T	Science and Technology
TRL	Technology Readiness Level
IP	Intellectual Property
DND	Department of National Defence
DRDC	Defence Research and Development Canada
IDEaS	Innovation for Defence Excellence and Security
R&D	Research and Development
CAF	Canadian Armed Forces
Recipient	An applicant whose project has been selected for funding
Contribution Agreement	The legally binding agreement between the DND and the Recipient embodying the terms and conditions governing the contribution program.
Contribution	Funding provided by Canada under the Contribution Agreement
In-Kind Contribution	Cash equivalent goods or services provided by an organization that represent an incremental expense that would have to be paid for by the Recipient if not provided.
Authorized Officials	An appointed official (e.g., chief executive officer, vice president, chief financial officer, general partner, board chair, director, or direct owner) to whom the Recipient has granted the legal authority to create financial obligations on its behalf.
SME	Subject Matter Expert
CUAS	Counter Uncrewed Aerial Systems
CUAS SC	CUAS Steering Committee
TE	Test Event

Term/Acronym	Definition
CCP	Contributions Call for Proposals

2.3 Document scope

This Applicant’s Guide has been developed to provide details for **Concept Development (CD) Project Proposals for Counter Uncrewed Aerial Systems (CUAS)**, including program objectives, eligibility, and application and selection process.

To be considered the applicant must submit the following package of documents using only the provided forms and templates:

- The **Concept Development project proposal**, a PDF form. It describes the proposed project’s scope, schedule, and cost, and the applicant’s competency and capacity to execute the project to develop their solution to a higher TRL. It focuses on the work effort to be undertaken rather than the solution itself.
- The **Concept Development solution technical description**, a PDF form. This describes the concept of the solution, including how and why it will work, its technical detail and capabilities, and its development and testing to date if any.
- The **Concept Development budget and eligible expenditures**, an Excel spreadsheet.
- The **Concept Development proposal overview**, a one-page PowerPoint template to be used by DND for summary briefings.

2.4 Concept Development projects – Contribution Agreement and funding overview

To be eligible for funding as a Concept Development Project, your solution must not have yet completed TRL 5 or higher. If your proposed solution has already successfully completed TRL 5 or higher, please apply for the separate CUAS Sandbox as described in its 2024 Applicant Guide.

Concept Development Projects are funded projects sought to address S&T challenges through a Call For Proposals (CFP). The IDEaS program will provide financial support through non-repayable “Contribution Agreements” where phased development allows quick implementation and continual progress.

A Contribution Agreement includes the work to be done by the innovator, and a schedule and budget, but as a non-repayable contribution it is a monetary payment that does not result in the acquisition by the Government of Canada of any goods, services, or assets, as would occur with a typical contract.

Although projects from this CFP will be funded using non-repayable contributions, DND/CAF may acquire S&T solutions developed from this call through a separate procurement process in the future.

For this CUAS challenge, each proposed Concept Development Project must be divided into two funding phases with the following duration and maximum IDEaS contribution amounts:

- Phase 1 – Initial Effort. Award up to 9 months duration and up to \$500,000.
- Phase 2 - Advanced Effort. Award up to an additional 15 months and up to an additional \$2,000,000.
- As each phase is of fixed duration, the expectation is for the proposed project and phases to describe how much progression can be made within each these fixed time durations, regardless of the starting TRL of any one solution.

Consequently,

- whether you start at TRL 1, 2, 3, or 4, you must still conduct a Phase 1 and cannot propose to skip Phase 1 and commence at Phase 2.
- Once the time period of the phase is reached, that phase is concluded even if the scope of proposed work is not completed, and even if unspent funds remain (which will remain as unspent and be returned).

It is emphasized that there is a definitive IDEaS program intent to start Phase 1 with multiple projects and to substantially reduce the number of projects approved to continue into Phase 2 with the higher levels of funding. The selection process for this is detailed in part 3 of this Guide (Evaluation Procedure and Basis of Selection).

The IDEaS program has notionally allocated the following funding for the CUAS Concept Development opportunity.

All proposals must be in Canadian dollars and will be paid via a Canadian financial institution.

DND reserves the right to not accept proposals or to reduce the amount of the available funding, or to shift funding and number of proposals selected between windows and phases at its entire discretion.

Notional planning allocations for CUAS Concept Development project proposals (all amounts in Canadian dollars)		
	Application window #1 October 12, 2023	Application window #2 Accepted up until the date and time posted on the website
Phase 1		
Notional number of projects to be selected to commence phase 1	4	6
Maximum phase 1 funding per project	\$500,000	\$500,000
Notional total phase 1 funding	2,000,000	\$3,000,000
Phase 2		
Notional number of projects to be selected to commence phase 2	1	2
Maximum phase 2 funding per project	\$2,000,000	\$2,000,000
Notional total phase 2 funding	\$2,000,000	\$4,000,000
Notional total funding:	\$4,000,000	\$7,000,000

2.5 Eligible recipients

Eligible recipients of funding under an IDEaS Contribution Agreement must be a legal entity duly incorporated and validly existing in Canada, including:

- Canadian universities and educational institutions chartered in Canada.
- Incorporated Canadian not-for-profit organizations or associations.
- Incorporated Canadian for-profit companies, organizations or associations.
- Provincial/territorial, or municipal government organizations.

- International applicants may be eligible, provided they meet this requirement with a legal entity duly incorporated and validly existing in Canada. These websites may be of assistance in setting that up if required:

[Starting a business - Canada.ca](#)

[Registering your business with the government - Canada.ca](#)

[Opening a Canadian bank account for non-Canadians - Canada.ca](#)

- **Federal and provincial crown corporations are not eligible for funding.**

Note that regardless of eligibility status of the recipient, in no case can more than 50% of eligible costs under the Contribution Agreement be incurred outside of Canada.

For applicants applying as joint venture, the following clauses would form part of the Contribution Agreement. This is being provided for information and awareness should you be successful in the CFP.

1. With respect to the relationship between the members of the joint venture Recipient, each member agrees, represents and warrants (as applicable) that:
 - a. _____ has been appointed as the “representative member” of the joint venture Recipient and has full authority to act as agent for each member regarding all matters relating to the agreement; (*see Proposal Form - Part 1, section 1.8 background, item g*)
 - b. *For proposals involving joint ventures:* confirms that all parties involved in the joint venture have discussed and agreed upon plans for intellectual property ownership arising from the IDEaS-funded work, and have reviewed and understood all other terms listed in the Applicant Guide; (*see Proposal Form - Part 3, item c*)
 - c. by giving notice to the representative member, Canada will be considered to have given notice to all the members of the joint venture Recipient; and
 - d. all payments made by Canada to the representative member will act as a release by all the members.
2. All the members agree that Canada may terminate the agreement in its discretion if there is a dispute among the members that, in Canada’s opinion, affect the performance of the work in any way.
3. All the members are jointly and severally, or solitarily, liable for the performance of the entire agreement.
4. The Recipient acknowledges that any change in the membership of the joint venture (i.e., a change in the number of members or the substitution of another legal entity for an existing member) constitutes an assignment and is subject to the assignment provisions of the general conditions.
5. The Recipient acknowledges that all security and controlled goods requirements in the agreement, if any, apply to each member of the joint venture Recipient.

2.6 Stacking provisions and other government assistance

As the funding provided by IDEaS is a “contribution”, it is permissible for applicants to obtain additional government funds or non-government funds from sources other than IDEaS for their project. Such other funding must be independently and separately obtained by the applicant as IDEaS will not be part of such other processes.

However:

- the total Canadian government (federal, provincial/territorial and municipal) assistance cannot exceed 100% of total project costs; and

2.7 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. Eligible costs funded by the IDEaS Contribution Agreement.

Eligible costs refers only to costs incurred by the project that are accounted for against the IDEaS contribution funding. If the innovator requires or decides to incur costs that are not eligible costs, or exceed the Contribution Agreement amounts they may do so but cannot use the IDEaS contribution of funding for those costs.

Eligible costs are direct costs that are associated with the delivery of the approved proposal and that are required to achieve the expected results. Generally, eligible costs may only be considered for reimbursement if incurred following the execution of a Contribution Agreement.

Eligible costs are limited to the following categories, with each explained in the subsequent text:

- Salaries and benefits;
- Capital expenditures (purchases not to exceed \$5,000 per acquisition);
- Materials and supplies;
- Professional, scientific, technical and contracting services (provided by third parties);
- Capacity building and training;
- Travel expenses; and
- Administrative overhead costs (not to exceed 15% of the total approved eligible costs).

Salaries and benefits

Salaries and benefits are eligible as long as 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 contribution

Capital Expenditures

Equipment acquisitions or rentals cost category not to exceed 20% of the total approved eligible costs. Any equipment acquisition greater than \$25,000 per piece of equipment requires approval in advance by DND. DND reserves the right to apply a proportion of the acquisitions costs relevant with the term of the agreement to the value of the equipment. For example, if the project is for a period of 4 years and the equipment to be acquired has a life expectancy of 10 years, 4/10 of the fair value or actual costs will constitute an eligible expenditure.

Materials and supplies

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

- expendable tangible property; or,
- useful life of 1 year or less; or,

- 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.

For consumables commonly utilized in most laboratories, a general rate per FTE will be accepted, provided that the rate is appropriately justified in the supporting documentation.

The consumables category also includes items such as equipment maintenance contracts and general maintenance of research infrastructure.

Professional, scientific, technical and contracting services

Professional or specialized services needed to undertake eligible project activities and for which contracts are entered into. The Contribution Agreement should not be used or replicated for contracting with other parties. A recipient's own contract should detail the milestones 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.

Capacity building and training

Capacity building and training are tools and activities used to obtain, improve, and retain the skills, knowledge, tools, equipment and other resources needed to carry-out the project or support the project.

Travel expenses

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

Administrative overhead

Administrative overhead costs are indirect costs Incurred by the Recipient which are necessary to carry-out the Project 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);
- IT (Information Technology) support;
- Internet and telephone;
- 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;
- Staff recruitment and training;
- Routine laboratory and field equipment maintenance (e.g., oil changes);
- Building occupancy and operating costs (i.e., use of space);
- Facilities maintenance.

The administrative overhead costs cannot exceed 15% of the total eligible expenditures (before overhead).

2.8 Ineligible costs

Ineligible costs (costs that will not be reimbursed or considered part of total project costs) include, but are not limited to, the following:

- In-kind contributions;
- Professional training or development;
- The purchase of land or buildings;
- The purchase or lease of private/personal vehicles;
- Assets and capital items not specifically required for the execution of the project;
- Patent fees;
- Normal costs of establishing a commercial operation or deemed to be part of normal business practice;
- Hospitality; and,
- Other costs not specifically required for the Project.

2.9 Basis and timing of payments

The Government of Canada's fiscal year is the period beginning on April 1 of any year and ending on March 31 in the next year. Details will be provided within each Contribution Agreement regarding the documentation that is required when submitting a claim for payment. The Contribution Agreement will also stipulate the start date and end date of eligible costs for each project.

Payments will be made based on receipt and approval of financial reports signed by the Recipients' Chief Financial Officer (or duly authorized officer) outlining actual eligible costs incurred for the project. Payments will be made based on measurable, pre-defined project activities, as well as upon receipt of the documentation as defined in the Contribution Agreements.

Advance payments or a combination of advance payments and progress payments may be permitted where requested by the Recipient and based on an assessment of their need, risk levels and cash-flow requirements.

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

2.10 Canadian content

Generally, eligible costs 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.

2.11 Conflict of interest

A successful applicant (the Recipient), its subcontractor(s) or any of their agent(s) directly or indirectly involved in the performance of the work and/or in the production of the deliverables under any resulting agreement will not be precluded from applying or bidding on any potential future CFP related to the production or exploitation of any concept or prototype developed or delivered.

2.12 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 DND's terms and conditions for the IDEaS Transfer Payment Program.

Personal information included in all proposals will be kept along with the proposal results as information records of business value and retained. These data are protected under the *Access to Information and Privacy Acts*. 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 their 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 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 recipient and project location) will be made available to the public on DND's website.

2.13 Public affairs / Communication notification

The Government of Canada retains the right to make primary announcements about the CUAS challenge and its concept development projects. Canada and the applicant shall consult with each other, after the selection process, about all proposed news releases or public announcements relating to the projects. This is to provide all parties sufficient notice of key communications, and, where appropriate, the time to determine a course of action (including a mutually agreed date and location), line up representatives and prepare joint material. Notwithstanding the advance notice requirement, consent shall not be unreasonably withheld by either party if a news release or public announcement must be issued in less than 15 working days as the result of unforeseeable circumstances, including matters of public safety or where an emergency response is required.

2.14 Human and animal ethics

Proposals that include human subjects, human tissues, laboratory animals, or animal tissues, must not proceed without prior approval of the project team's Human Subjects Research Ethics Committee or the Institutional Animal Care Committee and must not be conducted in contravention of the respective committee's conditions of approval.

2.15 Enquiries about the Concept Development CFP

All enquiries must be submitted via email to the IDEaS program mailbox (DND.IDEaS-IDEaS.MDN@forces.gc.ca) (no later than five (5) calendar days before the CFP's 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. Care should be taken by applicants to explain each question in sufficient detail to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where DND determines that the enquiry is not of a proprietary nature. DND may edit the question(s) or may request that the applicants do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all applicants. Enquiries not submitted in a form that can be distributed to all applicants may not be answered by DND.

3 PREPARATION AND SUBMISSION PROCESS FOR PHASE 1 – INITIAL EFFORT

1. Read the Applicant Guide and determine eligibility.
2. Review the CUAS Challenge in annex A and determine if you can address it with an innovation.
3. Review the full application package templates and forms to understand what information goes where.
4. Complete the full application package templates and forms.
5. Submit it.

You must use an IDEaS epost connection to submit your application. Get your IDEaS epost connection at least five (5) days prior to the CFP closing. See details below.

Multiple Proposals. Applicants may submit more than one proposal. The proposals must be standalone and have no interdependencies. If proposals are identified as dependent, they will be declared as inadmissible and not be considered further. Each proposal will be evaluated separately on its own merit.

Classified proposals will not be accepted for this CFP.

3.1 Proposal preparation

To be considered the applicant must submit the following package of documents using only the provided forms and templates, following all instructions embedded within each. Applicants are and will remain solely responsible for the accuracy and completeness of their proposals:

- The **Concept Development Project Proposal**, a PDF form. It describes the proposed project's scope, schedule, and cost, and the applicant's competency and capacity to execute the project to develop their solution to a higher TRL. It focuses on the work effort to be undertaken rather than the solution itself. The responses in this form will form the basis of "*Schedule A – The Project*" in the formal Contribution Agreement for those applicants selected for funding.
- The **Concept Development Solution Technical Description**, a PDF form. This describes the concept of the solution, including how and why it will work, its technical detail and capabilities, and its development and testing to date if any. The responses in this form will form the basis of "*Schedule X – The Solution Technical Description*" in the formal Contribution Agreement for those applicants selected for funding.
- The **Concept Development Budget and Eligible Expenditures**, an Excel spreadsheet. The responses in this form will form the basis of "*Schedule B – The Project Budget and Expenditures*" in the formal Contribution Agreement for those applicants selected for funding. All costs identified in the proposal must be in Canadian dollars.
- The **Concept Development Proposal Overview**, a one-page PowerPoint template to be used by DND for summary briefings.

Note: The template for the formal **CUAS Contribution Agreement** is also available from IDEaS:

- It is provided for the awareness and review by the applicants so that they can pre-read the formal agreement and terms and conditions they will have to agree to if selected for a CUAS Contribution Agreement.
- It is NOT to be filled in and submitted by the applicant.

- For applicants who are selected for funding, IDEaS will fill in this template with the information provided by the applicant in the other documents, after which it will be discussed, agreed and approved by all parties prior to the Contribution Agreement and funding proceeding.

3.2 Statement of work

In the proposal package, applicants should demonstrate their understanding of the requirements contained in the CFP and challenge notices and explain how they will meet these requirements. Applicants should demonstrate their capability and describe their approach in a thorough, concise, and clear manner for carrying out the work.

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. Annex B describes the evaluation criteria in detail.

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.

3.3 Submission steps

During Stage 1 of the CFP process, applicants are required to register and submit their proposal(s) using the [epost Connect service](#) provided by Canada Post Corporation (CPC). It is the applicant's responsibility to hold an account with CPC and to complete the submission steps to submit a proposal.

Step 1: Create an epost Connect account

If the applicant has an existing epost Connect account with CPC, please proceed to step 2.

To register for an account please contact the CPC epost Connect service. The use of epost Connect service requires a Canadian mailing address. Should the applicant not have a Canadian mailing address, they may use the following Department of National Defence (DND) address in order to register for the epost Connect service:

Department of National Defence
60 Moodie Drive
Ottawa ON
K1A 0K2

Step 2: Request an epost Connect conversation

Applicants must send an email requesting an epost Connect conversation to DND.IDEaS-IDEaS.MDN@forces.gc.ca at least five business days prior to the CFP closing date and time. The IDEaS program will then initiate an epost Connect conversation.

The epost Connect conversation will create an email notification from CPC prompting the applicant to access and action the message within the conversation. The applicant will then be able to transmit its proposal at any time prior to the CFP closing date and time.

Applicants may submit more than one proposal; however, each proposal must have a unique title and individual file number. When requesting an epost Connect conversation, the applicant should indicate the number of proposals submitting to ensure individual file numbers are assigned.

The applicant must send as early as possible, and in any case, at least five business days prior to the CFP closing date and time, an email to DND.IDEaS-IDEeS.MDN@forces.gc.ca requesting to open an epost Connect conversation. Requests to open an epost Connect conversation received after that time may not be answered or may result in the late submission of the proposal.

Step 3: Submit the proposal form using epost Connect

- Applicants must transmit their proposal by uploading the full application package in the epost conversation at any time prior to the CFP closing date and time.
- Once the application package has been received, the applicant will receive a confirmation message and a file number for future reference. Please ensure that the proposal contains the applicants full contact information.
- Applicants are able to edit the proposal up until the closing date of October 12, 2023 at 2:00 PM EDT.

All epost Connect conversations must remain open until at least 30 business days after the CFP closing date and time.

The file number assigned by the IDEaS program should be identified in all electronic communications.

3.4 Transmission issues or late submissions

For proposals transmitted by epost Connect service, DND/CAF 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 epost 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 epost Connect service.

Should an applicant submit a late or delayed proposal:

- The only piece of evidence relating to a delay in submitting a proposal that is acceptable to the IDEaS program is the CPC epost Connect service date and time record indicated in the epost Connect conversation history that clearly indicates that the submission was sent after the call for proposal closing date and time.
- Late application(s) will not be assessed.
- Proposals which are submitted late will be deleted. Epost Connect conversations initiated by the IDEaS program via the epost Connect service pertaining to a late submission will be deleted. Records will be kept documenting the transaction history of all late submissions.

4 EVALUATION PROCEDURE AND BASIS OF SELECTION

4.1 Evaluation procedure

DND is committed to a consistent, fair, and transparent project selection process to identify, select, and approve the allocation of funding to projects that best fit the program's objectives.

Proposals will be assessed in accordance with the entire requirement of this CFP including the evaluation criteria. Please refer to annex B for the evaluation criteria in detail.

An evaluation team composed of representatives of Canada and our partners in this CUAS challenge from the United States Government will evaluate the proposals, with final selections made by the Canadian CUAS Challenge Steering Committee.

The evaluation team will be examining the full application package submitted by each applicant in order to examine the two core components of each proposal:

- The proposed "Project of Work", inclusive of:
 - Scope
 - Schedule
 - Budget
 - Competency and capacity to manage and execute the project
 - Project risk

- The proposed "solution" technology itself, inclusive of its ability to address the challenge:
 - Essential outcomes
 - Desirable outcomes
 - Human factors
 - Growth potential
 - Solution technical risk

4.2 Evaluation criteria (see annex B)

The screening, mandatory, and point rated criteria are detailed in annex B.

To be eligible for funding, proposed projects must meet all screening and mandatory criteria, and will receive a numerical score for point rated criteria.

The responsibility lies with the applicant to demonstrate, in the proposal package, how the proposed project and solution meets each criteria. The application package of forms and templates has been designed to enable that response and evaluation against each criteria.

Step 1: Screening.

- All submissions will first be evaluated against the screening criteria to ensure an initial level of validity to the submission.
- Failure to clearly demonstrate that the proposal meets each screening criteria may result in the project being eliminated from further evaluation and consideration for funding.
- Proposed Projects that clearly meet each of the screening criteria, will proceed to Step 2.

Step 2: Full evaluation

- Proposed Projects that clearly meet each of the screening criteria, will be evaluated and scored in accordance with the remaining mandatory and point-rated criteria.

- Proposals that meet all of the screening and mandatory criteria will be placed in the pool of qualified proposals with two resultant point rated scores:
 - A solution technical characteristics score, out of 100%; and
 - A project outcomes score, out of 100%.
- Selection from the pool of qualified proposals is made as described below.

4.3 Selection from the pool of qualified proposals

All qualified applications in the pool will proceed to be considered against the Strategic Selection Parameters (SSP) as described here.

Applicants do not provide any additional information to respond to these parameters. They only provide the information as described in the application documents.

In the event that the number of qualified pool applicants excessively exceeds the funding capacity available, Canada may at its sole discretion choose to only consider in detail the proposals from the pool with the highest solution technical characteristics score such that:

- Twice the number of expected selections are reviewed in detail; and
- Additional selections of lower scores outside that initial top tier may be included if the technological approach of such solutions is substantively different from the technologies already in the top tier.
- Additional submissions will be reviewed in detail if selection room becomes available.

Selection of the applications is at the sole direction of the challenge Steering Committee.

Applications that achieve a full technical score are not guaranteed selection for participating in the Sandbox.

The committee will consider the evaluation results of the applications and examine the distribution of selections against the following parameters, listed below in no particular order:

1. **Alignment with priorities** – Aligns with current and emerging departmental and/or Government of Canada priorities.
2. **Alignment with DND/CAF** – Aligns and integrates within the DND/CAF, i.e., the solution integrates with departmental military systems, doctrines, standard operating practices.
3. **Operational investment** – Considered worthwhile for investing operational resources (e.g., personnel, equipment, data, budget, etc.) to implement the solution.
4. **Distinction of solution** – Does not duplicate previous/existing/planned work of Canada and its allies known at the time of evaluation.
5. **Strength and risk of application** – The strength of an individual application and the related risk. In seeking innovative solutions, the IDEaS program is open to high-risk untested solutions, provided such solutions have a high impact to addressing the challenge at hand. High risk without high reward is of less interest. This parameter will consider:
 - a. The **Solution Technical Characteristics Score**, as well as a risk assessment of the solution's technical feasibility to successfully perform to the extent described by the applicant, and assuming the project is conducted as proposed. This risk assessment will be conducted as described in Annex C.
 - b. The **Project Outcomes Score**, as well as a risk assessment of the project's scope of work, schedule, and budget as proposed. This risk assessment will be conducted as described in annex D.

Note that the scientific and technical risk assessment in Annex C and the project risk assessment in Annex D are only completed for the solutions that are provisionally selected for funding as part of the final stages of the selection process. Those risk results may influence the final selection decisions.

6. **Impact** – The application’s potential to be a disruptor in the field of the challenge and/or S&T domain.
7. **Type of solution** – Allows DND/CAF to select a balance across solution categories, methodologies, and various applicable military environments. For this CUAS challenge, and subject to the number and type of qualified applications received, selections may be dispersed across the following categories:
 - a. **Detect only**. These are solutions that have the capability to provide the detection that a UAS threat has appeared, but do not include a capability to defeat the UAS in any way.
 - b. **Defeat only**. These are solutions that do not have the capability to do the initial detection that a UAS threat has appeared, but once cued to that threat by a separate detect system do have the capability to target and defeat those detected threats.
 - c. **Detect and defeat**. These are solutions that can both detect the appearance of a UAS threat and defeat it (as described above) in a seamless comprehensive system.
8. **Technology and socio-economic benefits to Canada.**

Selection decisions by the CUAS committee are considered final. There is no appeal process.

4.4 Proposal selection interdependency

As described in the preamble on page ii, there is a selection interdependency between applications in the qualified pools for the CUAS Concept Development proposal opportunity and the separate but related CUAS Sandbox 2024 prototype demonstration opportunity.

Both opportunities follow a comparable evaluation process:

- Both create a qualified pool of applications.
- Both use the same list of strategic parameters to select which applications are selected from each pool.
- With separation maintained so that Sandbox solutions are not selected for concept development, and vice versa.

However, while the opportunities are separate there is generally no benefit for Canada to select and fund a low TRL concept unless it has a reasonable potential to substantively surpass higher TRL solutions. In essence, concept development applicants are competing not only against other concept development proposals, but also against Sandbox applicants. This aspect will be considered during the strategic selection process.

To enable those interdependent yet concurrent selections in each development opportunity, the following selection process will occur for the CUAS challenge overall:

1. **CUAS application window #1, October 12, 2023**
 - a. Sandbox prototypes can be submitted using the *CUAS Sandbox 2024 Applicant Guide*, with the Sandbox taking place May 27, 2024, to June 27, 2024.

- b. Concept Development Project Proposals can concurrently be submitted using the **CUAS Concept Development Applicant Guide**.
- c. A single innovator can apply to both opportunities, provided the solutions in each opportunity are different, and at different TRLs, and all other conditions described throughout the applicant Guide are met. Please read the Guide and criteria carefully if you are considering this to ensure you are proceeding correctly.
- d. All proposals will be evaluated as described for their opportunity and placed in their qualified pools as applicable.
- e. Sandbox selections from their qualified pool will be made first, using the strategic selection parameters. This may include some strategic consideration of the concurrent concept development proposals.
- f. Concept Development selections from their qualified pool will be made second, using the strategic selection parameters:
 - i. Selections will focus on solutions, if any, with a reasonable potential to substantively leap-frog the capabilities of other CUAS solutions, generally of a higher TRL:
 - 1. concurrently submitted for the CUAS Sandbox, even if those solutions were not selected to attend the Sandbox.
 - 2. other known CUAS solutions, even if they did not apply to the Sandbox.
 - ii. Note that such deliberations do consider the assorted niches that different types of solutions and technologies can bring to the overall CUAS challenge, especially given the layered nature of overall threat and defensive systems in such a context.
- g. Once initial selections from both opportunities are made, those initial results will be iterated to refine any residual interdependencies and the final selections from each pool.

2. CUAS application Window #2, , accepted up until the date and time posted on the website

- a. This is solely seeking additional Concept Development Project Proposals, as the Sandbox participation is already determined by Window #1.
- b. Technologies not selected at the earlier Window #1 can be amended, reimaged, and resubmitted if desired. This can include rejected Sandbox technologies if their concept is being redesigned and has reverted in its TRL.
- c. Entirely new submissions and innovators are also welcome to participate.
- d. Selection of any new Window #2 concepts will only be taken:
 - i. after the results of the CUAS Sandbox are known in order to again enable the interdependencies between what technologies and successes or failures are experienced at the Sandbox vs the Window #2 concepts; and

- ii. with similar interdependent consideration of the solutions and progress of any concept development projects selected at Window #1.

4.5 What happens post Phase 1 selection?

For the CUAS Concept Development Project Proposals, the program may select one proposal, multiple proposals, or no proposals for Phase 1 funding approval via a formal Contribution Agreement. At this stage, all applicants will be informed of the status of their proposal.

Program officials will then work with the selected recipients to develop Contribution Agreements based on the proposed projects. Recipients should note that until a written Contribution Agreement is signed by both parties, no commitment or obligation exists on the part of DND to make a financial contribution to any project, including any expenditure incurred or paid prior to the signing of such Contribution Agreement.

Applicants of selected proposals may be requested to provide additional information to support mutual approvals of the resultant Contribution Agreements. This may include additional project analysis, 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.

After the Contribution Agreement is fully signed and approved, immediate commencement of the project Phase 1 is expected.

It is emphasized that only Phase 1 of the proposed project is approved for funding at this stage. Approval and funding for Phase 2 is conducted separately (see next section)

5 Transition to Phase 2, advanced effort.

There is a definitive IDEaS program intent to start Phase 1 with multiple applicants, even if each is at a different TRL, and to substantially reduce the number of innovators approved to continue into Phase 2 with the higher levels of funding. Only those innovators with an approved Contribution Agreement for Phase 1 are eligible for Phase 2 approval.

At Canada's discretion, only the most promising of the Phase 1 solutions will be selected for Phase 2, if any, as detailed in this section.

5.1 Submission for Phase 2 approval.

The intent is to make all Window #1 Phase 2 submissions and decisions as a collective concurrent decision, and likewise for the Window #2 projects, with a notional decision gap of 6-9 months between the two groups. However, as individual projects may start and progress at different points in time for unforeseen reasons, adjustments to this group timing intent may be required at the sole discretion of IDEaS in order to optimize the decision timings.

Note that while the Phase 2 submission process is underway, continuation of any still approved effort under Phase 1 is expected to concurrently continue, as per the Phase 1 Contribution Agreement.

Unless otherwise indicated by IDEaS, submissions for Phase 2 Approval are due by:

- The 1st of June 2024 for Window # 1 CUAS Concept Development recipients (in order for the Window #1 Phase 2 decisions to align with interdependent results from CUAS Sandbox 2024); and

- At the end of Month 6 for Window #2 recipients (as there is no related CUAS Sandbox at that time).

The submission package consists of a re-submission of the original application documents made at Window #1 or #2 as applicable, with any changes relevant to approval of Phase 2 indicated. For example, Phase 2 objectives, tasks, schedule, and budget may have changed due to Phase 1 proceeding faster or slower than planned, technology lessons learned during phase 1, design changes, etc.

For clarity, and unless otherwise indicated by IDEaS during Phase 1, the Phase 1 Recipients desiring Phase 2 approval are to submit:

1. **A covering letter**. As the formal request and an executive summary of the proposed Phase 2, highlighting any major changes compared to the original application's description of Phase 2 at that time, and reasons for those changes.
2. **A progress report**. This will be comparable to the quarterly reports and can leverage those reports but may not precisely align in timing. This report is to contain:
 - a description of the progress achieved since the start of the project for each activity, that clearly indicates for each activity if the Recipient is on track to meet the expected results as described in the Contribution Agreement document;
 - the overall progress toward the stated project objectives;
 - an updated end of Phase 1 forecast cash flow statement and budget;
 - the number of highly qualified personnel supported by the Project.
3. **The original application's core documents, with updates**. Each text area on the forms must be marked with the phrase "No change required"; or "Changed as indicated here" (and then describe the new response). This is to be done with the following original submission documents:
 - a. The ***Concept Development Project Proposal***, a PDF form. Potential amendments would include changes to the project's Phase 2 scope, schedule, and cost, and the applicant's competency and capacity to execute Phase 2 of the project. Such amendments, if approved would become documented in a new version of the formal Contribution Agreement for those applicants selected for Phase 2 funding.
 - b. The ***Concept Development Solution Technical Description***, a PDF form. This should only require amendment if the design outcome of the concept requires modification. Such amendments, if approved would become documented in a new version of the formal Contribution Agreement for those applicants selected for Phase 2 funding.
 - c. The ***Concept Development Budget and Eligible Expenditures***, an Excel spreadsheet. This will require amendment as in the original application a breakdown of the expense details was only required in Phase 1 but will now be required for Phase 2. The responses in this form will form the basis of "*Schedule B – The Project Budget and Expenditures*" in the formal Contribution Agreement for those applicants selected for Phase 2 funding. All costs identified in the proposal must be in Canadian dollars.
 - d. The ***Concept Development Proposal Overview***, a one-page PowerPoint template to be used by DND for summary briefings. Provide an amended version.

5.2 Evaluation of phase 2 submissions

Unless schedule or strategic decisions demand otherwise, Phase 2 decisions for Window #1 applicants will be made as one group, and Phase 2 decisions for Window #2 applicants as a second group (notionally with 6-9 months of schedule separation between the group's decision points). IDEaS will provide notification if this changes for any reason.

5.3 Selection of phase 2 submissions

As the Phase 2 submissions are on the same document types as the original applications, the same selection process and strategic parameters will be used as described earlier, with the additional information of:

- The results and progress indicated in Phase 1 Quarterly Report #1;
- The results and progress indicated in Phase 1 Quarterly Report #2; and
- Any other relevant information received during the conduct of Phase 1 to date.

5.4 What happens post Phase 2 selection?

For the CUAS Concept Development Project Proposals, the program may select one proposal, multiple proposals, or no proposals for Phase 2 funding approval via an amendment to the recipient's original formal Contribution Agreement. At this stage, all Phase 1 recipients in the window group will be informed of the status of their Phase 2 proposal.

Program officials will then work with the selected Phase 2 recipients to develop Contribution Agreement amendments based on the Phase 2 submission. Recipients should note that until a written Contribution Agreement Phase 2 amendment is signed by both parties, no commitment or obligation exists on the part of DND to make a financial contribution to any project Phase 2 aspects, including any expenditure incurred or paid prior to the signing of such Contribution Agreement.

Applicants of selected proposals may be requested to provide additional information to support mutual approvals of the resultant Contribution Agreements. This may include additional project analysis, 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.

After the amended Contribution Agreement is fully signed and approved to now include both Phase 1 and Phase 2, the continuation of Phase 1 work and commencement of Phase 2 work will be as described in the amended agreement.

6 OTHER INFORMATION

This section contains information which will be relevant only to those applicants whose projects are selected for funding through IDEaS by DND.

6.1 *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. As part of the proposal, 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.

6.2 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 Section 2.

6.3 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. Members of the joint Government of Canada–Universities Working Group are 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 & development initiatives.

In the meantime, Initial and Ultimate Recipients of this call for proposals 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.

6.4 Reporting requirements

Specific reporting requirements will be defined in the Contribution Agreement but will likely include the information as laid out below. Regular communication between DND and the Recipients will be implemented to monitor progress and exchange perspectives, which may include CAF end-user subject matter experts on an as available basis.

Quarterly reporting requirement for recipients include:

- a financial claim signed by the Chief Financial Officer or Duly Authorized Officer of the organization which outlines eligible costs incurred by activity;
- a description of the progress achieved during each reporting period for each activity, that clearly indicates for each activity if the Recipient is on track to meet the expected results as described in the Contribution Agreement document;
- the overall progress toward the stated project objectives;
- an updated project quarterly forecast cash flow statement and budget;
- the number of highly qualified personnel supported by the Project; and
- various statistics on Gender Based Analysis Plus (GBA+) participation.

6.5 Contribution agreement conclusion

At the end of the Contribution Agreement, regardless of cause, recipients will provide:

- a financial report that demonstrates how DND's contribution was spent, with a declaration of the total amount of contributions or payments received from other sources in respect to the project; and
- a final report to describe how project activities have contributed to the achievement of the objectives, the benefits, and the key performance measures of the Project as described in the Contribution Agreement document, including the results of the project in comparison to the original outputs and work plan.

6.6 Intellectual property

All intellectual property (IP) rights that arise because of this Program shall vest in the recipient. The Crown may, at its sole discretion, include a provision in the Contribution Agreement requiring that the Recipient grant the Crown, in perpetuity, a non-exclusive, irrevocable, royalty-free, and world-wide license, to use or have used, the intellectual property for government purposes. This license allows the Crown 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.

6.7 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 CUAS challenge

Disclaimer: Challenge requirements vs Canadian Armed Forces (CAF) end-state operational requirements. Please note that the descriptions, characteristics, and criteria used for this challenge represent the limitations and desired characteristics in order to prioritize and select the IDEaS accepted solutions. They do not represent final operational requirements for any current or future DND/CAF procurement program.

1. CHALLENGE STATEMENT

- 1.1. The Department of National Defence and the Canadian Armed Forces (DND/CAF) and its Defence and Security partners (RCMP, Public Safety, etc.) are seeking Counter Uncrewed Aerial Systems (CUAS) solutions that can detect and/or defeat Micro and Mini Uncrewed Aerial Systems (UAS) with systems that can be integrated into the broader military command and control systems.

2. BACKGROUND AND CONTEXT

- 2.1. The UAS landscape is rapidly evolving. The rapid increase of availability, affordability, complexity, and capabilities of UAS systems is posing increasing threats to the DND/CAF and our Defence and Security partners. Potential adversaries are also adapting UAS designs to evade current CUAS capabilities, by reducing the UAS visibility, minimizing radio-frequency emissions, increasing autonomy, operating at higher velocities, etc., thus rendering the current CUAS approaches obsolete. Proposed solutions to this challenge should take into account not only what is available and a threat today, but also emerging UAS and CUAS capabilities and how they might be detected, defeated, and/or exploited tomorrow.
- 2.2. CUAS was identified as one of the priorities in Canada's 2017 defence policy *Strong, Secure, Engaged* (SSE) which stated: "*As the development of remotely piloted systems increases... Canada will require the appropriate capabilities to identify and defend against these burgeoning threats*" (page 73).
- 2.3. The Canadian Joint Operations Command (CJOC) is leading the CUAS effort, coordinating with the Canadian Army (CA), Royal Canadian Navy (RCN), Royal Canadian Air Force (RCAF), and Canadian Special Operations Forces Command (CANSOFCOM). The information presented in this IDEaS CUAS challenge represents a blending of characteristics of interest to one or more of the services, as well as the Royal Canadian Mounted Police (RCMP).
- 2.4. The following CAF projects have a direct interest in CUAS systems and the results of this challenge:
 - 2.4.1 **Canadian Forces Land Electronic Warfare Modernization (CFLEWM).** CFLEWM is upgrading the Army's Mobile Electronic Warfare Teams in Light and Armoured platforms. While dedicated CUAS capabilities are out of scope for CFLEWM, a beneficial outcome would be to understand how multi-role EW Sense and Attack capabilities can contribute to the CUAS fight, and how dedicated CUAS sensors could be integrated into the EW sensor network.

- 2.4.2 **Land Intelligence, Surveillance and Reconnaissance Modernization (Land ISR Mod).** Land ISR Mod is investigating capabilities that are capable of providing sensor systems for the purposes of targeting. This project is mandated under SSE: Canada's Defence Policy – Initiative #42 and is funded. This project is in Options Analysis transitioning to Definition.
- 2.4.3 **Counter Uncrewed Aerial Systems (CUAS).** A specific CUAS initiative is investigating CUAS systems capable of defending critical infrastructure, vehicles, and personnel from micro and mini UAS. This project is not funded at this time, and consequently an intended date for any future procurement cannot yet be stated.
- 2.5. **UAS Sizes to be considered for the challenge:** Micro and Mini UAS. For the purposes of this challenge, the following definitions are used:
- 2.5.1 **Micro UAS** with typical characteristics of:
- <2kg.
 - up to 200ft Above Ground Level (AGL).
 - normal mission radius of 5km Line of Sight (LOS).
 - operating at high speeds up to 200 kph.
- 2.5.2 **Mini UAS** with typical characteristics of:
- 2-15kg.
 - up to 3000ft AGL.
 - normal mission radius of 25km LOS.
 - operating at high speeds up to 200 kph.
- 2.6. **CUAS Methodologies.** The general methodologies for achieving CUAS effects can be characterized as:
- 2.6.1 **Active detection**, in which the CUAS system is transmitting a signal in order to detect the UAS (such as radar), which has the disadvantage of potentially revealing the location of the transmitter, depending on the technology used.
- 2.6.2 **Passive detection**, which conceals our own position and relies on detecting the UAS from effects it generates (such as visual detection, electronic signatures, audible noise, etc.).
- 2.6.3 **Soft-Kill neutralization**, using means such as radiofrequency effects or other methods to deter, disable, take over, or otherwise mitigate the UAS.
- 2.6.4 **Hard-Kill neutralization**, using ammunition, nets, entanglers, missiles, lasers, microwave devices, or other means to physically disable the UAS.
3. **CUAS challenge essential outcomes.** Aside from addressing the challenge in an overall sense, there are no specific detailed essential challenge outcomes at this time.
4. **CUAS desirable outcomes:**
- 4.1. **Integration into an external command and control system.**

- 4.1.1 The UAS threat is only one threat amongst many that CAF must constantly consider in a layered operational environment. While a singular CUAS system may be quite capable, if its information and control cannot be integrated into a common command and control structure its functional utilization is diminished, requiring additional human resources to manually fill that gap, which reduces both efficiency and effectiveness of the system and the deployed force.
- 4.1.2 It is desirable that the utilized external command and control system is one already in use by the CAF, such as Link 16, Sensing for Asset Protection using Integrated Electronic Networked Technology (SAPIENT), Forward Area Air Defense Command and Control (FAAD C2), All Purpose Structured Eurocontrol Surveillance Information Exchange (ASTERIX), NATO Air Command and Control System (ACCS), or Joint All-Domain Command and Control (JADC2).
- 4.2. **Operational scenarios.** The UAS threats occur in a variety of operational scenarios, five of which are of specific interest to defend against. It is desirable that a solution addresses as many of these as possible, each to the maximum extent possible:
 - 4.2.1 **Operating base.** Defending a Forward Operating Base (FOB), airfield, or VIP conference location in which a CUAS system can be in a static location once deployed, and where equipment size and power consumption is not a major issue. The perimeter of the area to be defended is a circle with a 2.5 km radius. The combined location and quantity of the systems used must be located within that circle with an effective range extending beyond that perimeter in all directions to prevent the UAS from approaching the perimeter.
 - 4.2.2 **Mobile vehicle.** Defending a mobile vehicle force element such as a patrol of five vehicles, in which the CUAS system must be vehicle-mounted and powered for mobility, creating a defensive bubble around the vehicles while on the move.
 - 4.2.3 **Dismounted personnel.** Defending a small element of 12 dismounted soldiers or a VIP group in an isolated location, in which case the CUAS system and its power source must be "Person Portable". Ideally also operating while the group is on the move, creating a defensive bubble around the group.
 - 4.2.4 **Urban environment.** Operating in urban scenarios such as complex and cluttered infrastructure, obstacles, and electromagnetic environments. The area to be defended is a major city downtown location and a square of 4 x 4 city blocks, with office towers up to 10 stories high on some or all of the blocks to be defended.
 - 4.2.5 **Naval environment.** Defending a RCN frigate sized ship that is (i) underway in littoral waters that vary from large straits to confined entries to harbours; and (ii) alongside a dock or anchored in a harbour. The equipment will have to contend with obstacles such as the ship's superstructure, the unique electromagnetic environment surrounding the ship, the various speeds and movements of a ship, a variety of coastal, urban, and port landscapes, and it will have to withstand prolonged exposure to the marine salt environment.

5. **CUAS detect and defeat characteristics.**

- 5.1. In order to assess any specific solution’s ability to address the above scenarios, a description of any proposed solution is required. To create a common description structure for all solutions regardless of method or TRL, the characteristics outlined in the table below will be used in addition to any overview description of a solution. Where required, additional explanation of each characteristic and any definitions will be included in the application documentation itself.
- 5.2. In addition, because of the 2019 and 2022 CUAS Sandboxes and other sources such as recent NATO exercises, a general knowledge of existing prototype capabilities in regard to these characteristics at TRLs 6 and higher is already known; however, the existence of a single solution that does everything to those levels is not currently known. Consequently:
- 5.2.1 **CUAS Sandbox 2024.** Solutions seeking to attend the CUAS Sandbox 2024 should be at similar or higher levels than current capabilities of the characteristics in the table, or collectively do more of these characteristics at similar or higher levels but within a single solution; and
- 5.2.2 **Concept Development Proposals.** For new solutions not eligible for the Sandbox but seeking Concept Development funding, their projected capabilities should be substantially higher in one or more of these characteristics to make investment in such a new concept worthwhile rather than duplicating what a higher TRL solution can already do.

Characteristics and descriptions

Solution characteristics	Description	Comments and Current Capabilities
Detect characteristics		
Types of drones detected	<input type="checkbox"/> Rotary drone <input type="checkbox"/> Fixed wing drone <input type="checkbox"/> RF controlled <input type="checkbox"/> RF Silent <input type="checkbox"/> LTE <input type="checkbox"/> 5G <input type="checkbox"/> Loitering	<p>Most types are detected, but not always in a single solution.</p> <p>Improved flexibility in RF frequency and/or cellular RF frequency detection is desired.</p> <p>Current systems can detect larger UAS easily at long-range but are challenged by UAS in the sub-250-gram category because of their low radar cross-section and low visible and infrared signature. Future systems will need to address these smaller threats while simultaneously reducing the false alarms and clutter produced by similar targets in the environment such as birds.</p>

Solution characteristics	Description	Comments and Current Capabilities
Operating conditions	<input type="checkbox"/> Daytime <input type="checkbox"/> Nighttime <input type="checkbox"/> Rain <input type="checkbox"/> Fog <input type="checkbox"/> Falling snow <input type="checkbox"/> The target is in or behind cloud cover	Some solutions can already detect in all weather and day/night conditions. Many current systems are not operational in adverse weather conditions such as heavy rain and snow. As UAS capabilities evolve, these restrictions will need to be overcome.
Detection range	This is the detection range for your solution.	To provide acceptable early warning, detection, tracking, and identification at ranges substantially greater than 3 km should be achievable.
Arc of coverage - horizontal	<input type="checkbox"/> 0 - 44 degrees <input type="checkbox"/> 45 - 89 degrees <input type="checkbox"/> 90 - 180 degrees <input type="checkbox"/> > 180 degrees	360-degree coverage, even if multiple systems are integrated, is readily achievable.
Arc of coverage - vertical	<input type="checkbox"/> 0 - 29 degrees <input type="checkbox"/> 30 - 59 degrees <input type="checkbox"/> 90 - 180 degrees <input type="checkbox"/> 60 - 90 degrees	Fully vertical coverage remains a challenge, in particular the ability to detect UAS operating near the ground or at high altitudes. Current systems are mostly composed of expensive, point sensor systems. In order to provide greater protection, future systems will need to cover much larger areas with lower cost, distributed sensors networked together.
Passive detection	The solution uses techniques to locate the UAS threat such that the use of its systems is not detectable by the enemy, and consequently our use of the solution does not reveal our location to the enemy. This describes all emissions or other potentially detectable aspects of your solution.	Many current passive systems rely on radiofrequency detection of UAS signals. For future UAS that do not emit RF signals, other means of passive detection will need to be developed. Current optical detection methodologies do not provide adequate range.
Recognize the class of a UAS	Recognition of the broad class of an object's type.	Other than RF recognition/identification, automated systems are not yet adequately reliable or long-range.
Identify a UAS	Identifies to specifically determine details about the object detected and differentiate between types of mini/micro UAS.	Other than RF recognition/identification, automated systems are not yet adequately reliable or long-range.

Solution characteristics	Description	Comments and Current Capabilities
Detection and tracking of swarms.	Capability to detect swarms (3 or more threat UAS) and track each individual threat UAS within the swarm.	Current systems capable of tracking multiple UAS generally do not provide adequate situational awareness. Recognition and identification systems often operate at ranges that are too short or are too slow to sequentially identify multiple UAS.
Friend/Foe Discrimination	The capability to have a friend/foe discrimination capability.	Future airspaces will be a complex mix of friendly and enemy UAS which will require quick accurate discrimination between friend and foe UAS.
Detection and tracking of high-speed targets	<input type="checkbox"/> 0 - 10 km/h <input type="checkbox"/> 11 - 50 km/h <input type="checkbox"/> 51 - 100 km/h <input type="checkbox"/> 101 - 150 km/h <input type="checkbox"/> 151 - 200 km/h <input type="checkbox"/> >200 km/h	Current systems require tens of seconds to detection and alert operators to the presence of UAS. With decreasing size and increasing speed, this does not leave adequate response time for countermeasures.
Locate the UAS's ground control station	The capability to locate the enemy UAS ground control station.	Current systems require tens of seconds to detection and alert operators to the presence of UAS. With decreasing size and increasing speed, this does not leave adequate response time for countermeasures.
Speed of solution response	The time in which a CUAS system can respond is an important measure of the system's functional effectiveness in an operational environment.	This remains challenging.
Minimizing human resources and training	The complexity of training and preparing CAF members to operate the equipment.	This remains problematic for wide area defense due to the generally short ranges of effectiveness resulting in a high number of systems required for defending an airfield or other larger area.
Minimizing operator burden	The complexity of operating the equipment.	Current systems have some automatic features, but still are not reliable enough, and require human judgement to sort through frequent false alarms, imposing a high operator burden and limiting the number of systems that can be operated simultaneously.
Deployability / Ruggedness	The ruggedness and deployability of the equipment.	Present systems have prolonged setup time, non-weatherproof sensors, computing, and operator interfaces which limits their deployability in the field.
Solution detectability	The detectability of the equipment by the enemy.	Passive methods of long-range UAS detection are desirable on a modern battlefield where RF radiation can make the operator a target of enemy forces.

Solution characteristics	Description	Comments and Current Capabilities
Integration into an external command and control system	The integration capability of the equipment.	Many systems rely on stand-alone command and control systems. A system that can be integrated into a broader C2 system is desirable.
Defeat characteristics		
Types of drones defeated	<input type="checkbox"/> Rotary drone <input type="checkbox"/> Fixed wing drone <input type="checkbox"/> RF controlled <input type="checkbox"/> RF Silent <input type="checkbox"/> LTE <input type="checkbox"/> 5G <input type="checkbox"/> Loitering	Current systems can defeat larger UAS at short-range but are challenged by UAS in the sub-250-gram category because of their low physical cross-section and maneuverability. Future systems will need to address these smaller systems.
Operating conditions	<input type="checkbox"/> Daytime <input type="checkbox"/> Nighttime <input type="checkbox"/> Rain <input type="checkbox"/> Fog <input type="checkbox"/> Falling snow <input type="checkbox"/> The target is in or behind cloud cover	Many current systems are not operational in adverse weather conditions such as heavy rain, snow, and high winds. As UAS capabilities evolve, these restrictions will need to be overcome.
Effective range	This is the effective range for your solution in this scenario.	Higher speed UAS with longer-range sensors will require CUAS systems (other than RF jamming and takeover solutions) to engage and defeat at ranges substantially greater than 500m.
Functional without operator line of sight	The capability of the solution to continue and complete the defeat of the targeted UAS without requiring the operator to maintain their line of sight to either the solution or the target.	Current CUAS systems require operator line of sight to defeat UAS effectively.
Defeat a specific UAS	The capability to select and defeat a specific drone from amongst the clutter of multiple drones.	With an operating environment involving friendly and enemy UAS, defeat systems will need to be selective about which UAS they are targeting.
Defeat swarms of UAS	The capability to defeat swarms of UAS.	Current hard-kill defeat systems operate in a sequential manner defeating one UAS at a time. As UAS become more numerous, the rapid defeat of multiple UAS will be desirable.
Defeating high-speed targets	<input type="checkbox"/> 0 - 10 km/h <input type="checkbox"/> 11 - 50 km/h <input type="checkbox"/> 51 - 100 km/h <input type="checkbox"/> 101 - 150 km/h <input type="checkbox"/> 151 - 200 km/h <input type="checkbox"/> >200 km/h	Current hard-kill defeat solutions take too long to engage, and have trouble engaging small, agile, and fast targets.

Solution characteristics	Description	Comments and Current Capabilities
Defeat the target's ground control station	The capability to target and defeat the GCS.	Current systems that can defeat the enemy controller rely on adequate RF line-of-sight and RF signal strength to a ground-based receiver. At the same time, ranges for UAS RF signal controls are increasing providing longer operator standoff from target. Novel methods will be required to quickly defeat control stations at long-range.
Speed of solution response	The time required for a CUAS system can respond is an important measure of the system's functional effectiveness in an operational environment.	
Exploiting the data from the target UAS	The capability to capture the data from the target UAS through either (i) a cyber means; or (ii) by enabling the physical recovery of the target UAS itself, without destroying the target.	Current systems can capture and acquire data from only a select few UAS systems (specific RF signals, or slow-moving UAS capture). This capability should be expanded.
Minimizing human resources and training	The complexity of training and preparing CAF members to operate the equipment.	This remains problematic for wide area defense due to the generally short ranges of effectiveness resulting in a high number of systems required for defending an airfield or other larger area.
Minimizing operator burden	The complexity of operating the equipment.	Current systems have some automatic features, but still are not reliable enough, and require human judgment to sort information and activate a defence, imposing a high operator burden and limiting the number of systems that can be operated simultaneously.
Deployability / Ruggedness	The ruggedness and deployability of the equipment.	Present systems have prolonged setup time, non-weatherproof sensors, computing, and operator interfaces which limits their deployability.
Integration into an external command and control (C2) system	The integration capability of the equipment.	Many CUAS defeat systems rely on stand-alone command and control systems. A system that can be integrated into a broader C2 system is desirable.

6. **Areas of CAF CUAS interest.** DND/CAF is open to receiving all types of solutions, however technologies and concepts of the most interest and with an increased likelihood of being selected are those that can leapfrog currently known prototypes and capabilities as outlined in the table above:

6.1. Utilization of a method that is substantively different than any other means of detecting and defeating drones, such that it would fill a niche in a layered CUAS approach of multiple capabilities. Current known methods include but are not limited to:

6.1.1 Detect:

- Radar
- Acoustic
- RF Signal

6.1.2 Defeat:

- RF Jamming
- Nets
- Small arms ballistic projectiles

6.2. Selection emphasis in the following technology areas can be expected provided their performance is relevant. Even if these technology areas are previously known, improvements in these areas are of interest:

6.2.1 Interceptors.

6.2.2 Hard-kill solutions, particularly proximity munitions, and directed energy such as lasers and microwaves.

6.2.3 Beyond line-of-sight capability.

6.2.4 Networks of low-cost sensors.

6.2.5 Systems already designed for integration into external command and control systems.

6.2.6 Tracking and defeating swarms of UAS

6.2.7 Detecting and defeating LTE/5G controlled UAS.

Annex B Evaluation Criteria

The criteria table below is grouped by these categories:

- Screening Criteria. Proposals that fail to meet the screening criteria will be declared non-responsive and will not be evaluated further.
- Mandatory Criteria. Proposals must meet all mandatory criteria; and
- Point Rated Criteria.

These criteria are applied against the applicant's submission as provided in the following template documents, which may contain additional detail or instructions:

- **The Concept Development Project Proposal, a PDF form.** It describes the proposed project's scope, schedule, and cost, and the applicant's competency and capacity to execute the project to develop their solution to a higher TRL. It focuses on the work effort to be undertaken rather than the solution itself.
- **The Concept Development Solution Technical Description, a PDF form.** This describes the concept of the solution, including how and why it will work, its technical detail and capabilities, and its development and testing to date if any.
- **The Concept Development Budget and Eligible Expenditures, an Excel spreadsheet.**

The criteria appearing in the table below are written in a generic manner such that they are applicable to any challenge. Where noted, some of these may require a subset of challenge specific technical criteria. In such cases:

- The subordinate criteria detail and scoring method will be included in the challenge documentation such as the **Concept Development Solution Technical Description**.
- The subordinate evaluations and any scoring results will be cumulatively rolled up and reported under the parent generic main criteria.

For all criteria, if insufficient or no information is provided in the submission, a Fail or zero points may be awarded.

When multiple evaluators are used to evaluate a single submission:

- Prior to a final evaluation of a FAIL on any mandatory Pass/Fail criteria, agreement from all involved evaluators will be established.
- For criteria with a point score, the average score of all evaluators on that criteria for that submission will be used.

Screening criteria (SC)

Proposals that fail to meet the screening criteria will be declared non-responsive and will not be evaluated further.

Screening criteria (SC)	Document in which the applicant provides their response, and the evaluation methodology
<p>SC-1 Applicant eligibility</p> <p>Eligible recipients for funding under an IDEaS Contribution Agreement Program must be a legal entity duly incorporated and validly existing in Canada at the time of application, including:</p> <ul style="list-style-type: none"> • Canadian universities and educational institutions chartered in Canada; • Incorporated Canadian not-for-profit organizations or associations; • Incorporated Canadian for-profit companies, organizations or associations; and, • Provincial/territorial, or municipal government organizations. • International applicants may be eligible, provided they meet this requirement with a legal entity duly incorporated and validly existing in Canada. <p>Federal and provincial crown corporations are not eligible for funding.</p>	<p>Concept Development Project Proposal, Part 1</p> <p>Pass:</p> <ul style="list-style-type: none"> • The applicant and all partners receiving funding from the Contribution Agreement are a legal entity duly incorporated and validly existing in Canada, including: <ul style="list-style-type: none"> ○ Canadian universities and educational institutions chartered in Canada. ○ Incorporated Canadian not-for-profit organizations or associations. ○ Incorporated Canadian for-profit companies, organizations or associations. ○ Provincial/territorial, or municipal government organizations. ○ International applicants may be eligible, provided they meet this requirement with a legal entity duly incorporated and validly existing in Canada. The following may be of assistance: <ul style="list-style-type: none"> ▪ Opening a Canadian Bank Account for non-Canadians - Canada.ca ▪ Starting a business - Canada.ca ▪ Registering your business with the government - Canada.ca • Are NOT a federal or provincial crown corporation. <p>Fail:</p> <ul style="list-style-type: none"> • One or more of the applicants and all partners receiving funding from the Contribution Agreement are NOT a legal entity duly incorporated and validly existing in Canada, as listed above; or • Are a federal or provincial crown corporation.

Screening criteria (SC)	Document in which the applicant provides their response, and the evaluation methodology
<p>SC-2 Distinct solution</p> <p>We are seeking solutions that are distinct from, or include significant modifications to, other solutions from the applicant.</p> <p>An applicant can propose one or more solutions to the IDEaS Concept Development component provided each proposed solution is sufficiently different from any other of the applicant’s solutions that are:</p> <ul style="list-style-type: none"> • Concurrently proposed by the applicant to IDEaS or any other part of DND or the CAF; or • Already selected and in progress by IDEaS or any other part of DND or the CAF. 	<p>Concept Development Solution Technical Description, Part 1</p> <p>Pass (sufficiently different relative to other solutions from the applicant):</p> <ul style="list-style-type: none"> • A distinct solution that has undergone a completely separate path of R&D or that diverged early in development; • Significant modifications to the other solution(s) applied in a setting or condition which was not possible or feasible for the other solution(s); or • A significant improvement in functionality, cost or performance over the other solution(s). <p>Fail (not sufficiently different relative to other solutions from the applicant):</p> <ul style="list-style-type: none"> • Incremental improvements to the other solution(s); • A solution that follows a normal course of product development (i.e., the next version or release); or • Stated differences are not quantified or are inadequately described.
<p>SC-3 Alignment of proposed solution to S&T challenge with an associated concept development project.</p> <p>The solution must be relevant to the published challenge and the proposed project must advance the TRL of the solution.</p>	<p>Concept Development Project Proposal, Part 2 Concept Development Solution Technical Description, Part 1</p> <p>Pass:</p> <ul style="list-style-type: none"> • The proposed project clearly articulates a solution that aligns to the Challenge (Concept Development Solution Technical Description, Part 1); and • The project advances the TRL of the solution (Concept Development Project Proposal, Part 2). <p>Fail:</p> <ul style="list-style-type: none"> • The proposed project does NOT clearly articulate a solution that aligns to the Challenge; or • The proposed project does NOT advance the TRL of the solution.

Screening criteria (SC)	Document in which the applicant provides their response, and the evaluation methodology
<p>SC-4 Technology Readiness Level (TRL) of proposed solution</p> <p>The intent of the Concept Development component of the IDEaS program is to encourage and progress innovative solutions along the Technology Readiness Level (TRL) maturity scale. Consequently, the initial TRL level must be no higher than TRL 5.</p> <p>TRL 5: Validation - refined integration of applications and/or concepts to confirm validity.</p>	<p>Concept Development Solution Technical Description, Part 1</p> <p>Pass</p> <ul style="list-style-type: none"> • The solution has not yet have successfully completed TRL 5. <p>Fail</p> <ul style="list-style-type: none"> • The solution has already successfully completed TRL 5.

Mandatory criteria (MC)

Proposals must meet all mandatory criteria.

Mandatory criteria	Document in which the applicant provides their response, and evaluation methodology
MC-1 Project scope of work	Concept Development Project Proposal, Part 2 Pass <ul style="list-style-type: none">• The project’s description, objectives, key outcomes, and activities are reasonable and realistic; and• It aligns with the proposed solution advancement in TRL for Phase 1 and 2. Fail <ul style="list-style-type: none">• The project’s description, objectives, key outcomes, and activities are NOT reasonable or realistic; or• Does NOT align with the proposed solution advancement in TRL for Phase 1 and 2.
MC-2 Project schedule	Concept Development Project Proposal, Part 2 Pass <ul style="list-style-type: none">• The schedule is reasonable and realistic for the proposed scope of work.• The schedule does not exceed 9 months for Phase 1 and 15 months for Phase 2 Fail <ul style="list-style-type: none">• The schedule is NOT reasonable or realistic for the proposed scope of work.• The schedule exceeds 9 months for Phase 1 or 15 months for Phase 2

Mandatory criteria	Document in which the applicant provides their response, and evaluation methodology
<p>MC-3 – Project budget</p>	<p>Concept Development budget and eligible expenditures (an Excel spreadsheet)</p> <p>Pass</p> <ul style="list-style-type: none"> • The budget is reasonable and realistic for the proposed scope of work and schedule; and • The amount of contribution funding requested from the IDEaS program does not exceed the maximum of <ul style="list-style-type: none"> • \$500,000 for Phase 1; and • \$2,000,000 for Phase 2. <p>Fail</p> <ul style="list-style-type: none"> • The budget is NOT reasonable or realistic for the proposed scope of work and schedule; or • The amount of contribution funding requested from the IDEaS program exceeds the maximum of <ul style="list-style-type: none"> • \$500,000 for Phase 1; or • \$2,000,000 for Phase 2.
<p>MC-4 Competency and capacity of the applicant to manage and execute the project as described.</p>	<p>Concept Development Project Proposal, Section 2.5</p> <p>Pass</p> <ul style="list-style-type: none"> • The applicant’s competency and capacity to execute the project as described is reasonable and realistic. <p>Fail</p> <ul style="list-style-type: none"> • The applicant’s competency and capacity to execute the project as described is not reasonable or realistic and the ability to manage and complete the described work on schedule and budget is not evident.

Mandatory criteria	Document in which the applicant provides their response, and evaluation methodology
<p>MC-5 Challenge essential outcomes</p> <p>The proposed solution addresses all essential outcomes of the challenge, expressed as mandatory criteria in the “Concept Development Solution Technical Description” PDF form.</p>	<p>Concept Development Solution Technical Description, a PDF fillable form.</p> <p>This form provides a set of questions and answers to ensure a common structure for all applicants to describe their solution in a common way, regardless of its TRL. The form also includes the challenge technical criteria that will be used to evaluate and score each solution. This includes several mandatory Pass/Fail criteria.</p> <p>Please read and complete the form to see and respond to these criteria, as they are not listed individually here.</p> <p>Pass</p> <ul style="list-style-type: none"> • All mandatory criteria in the “Concept Development Solution Technical Description” PDF form are individually evaluated as a Pass, as indicated in the form. <p>Fail</p> <ul style="list-style-type: none"> • One or more of the mandatory criteria in the “Concept Development Solution Technical Description” PDF form are individually evaluated as a Fail, as indicated in the form.

Point rated criteria (PRC)

PRC	Document in which the applicant provides their response, and the evaluation methodology
<p>PRC-1 Solution technical characteristics</p>	<p>Concept Development Solution Technical Description, a PDF fillable form.</p> <p>This form provides a set of questions and answers to ensure a common structure for all applicants to describe their solution in a common way, regardless of its TRL. The form also includes the challenge technical criteria that will be used to evaluate and score each solution.</p> <p>Please read and complete the form to see and respond to these criteria, as they are not listed individually here.</p> <p>The cumulative score of the rated criteria on the form becomes the score for “PRC-1 Solution Technical Characteristics”, subdivided as:</p> <ul style="list-style-type: none"> • 80% - Rated scores regarding the Desirable outcomes of the challenge, as stated in the Challenge description. • 5% - Rated scores for the Human Factors aspects of the solution, representing the Gender Based Analysis Plus (GBA+) Canadian government policy. • 15% - Rated score for the growth potential of the solution’s methodology to addressing the challenge. <p>Total available Solution Technical Characteristics Score: 100%.</p>
<p>PRC 2 Project outcomes</p>	<p>PRC 2 is subdivided into sub-criteria. The total PRC 2 score with a maximum of 100% represents the “Project Outcomes Score”</p>
<p>PRC-2-1 Project proposed advancement in TRL during Phase 1</p>	<p>Concept Development Project Proposal, Part 2, Phase 1</p> <p>Assuming the Phase 1 work is successfully accomplished as described, what would the change in TRL be at the conclusion of Phase 1, relative to the starting TRL?</p> <ul style="list-style-type: none"> • 0 points – the TRL would be unchanged, with no significant advancement within it. • 20 points – the TRL would be unchanged, but with significant advancement within it during Phase 1. • 40 points – the TRL would be advanced by one level during Phase 1. • 60 points – the TRL would be advanced by one level and have significant progression (more than 50% completed) through the next level during Phase 1. • 80 points – the TRL would be advanced by two levels during Phase 1. • 90 points – the TRL would be advanced by two levels and have significant progression (more than 50% completed) through the next level during Phase 1. • 100 points - the TRL would be advanced by three or more full levels during Phase 1. <p>Weighted as 25% of the total Project Outcomes score.</p>

PRC	Document in which the applicant provides their response, and the evaluation methodology
<p>PRC-2-2 Project proposed advancement in TRL during Phase 2</p>	<p>Concept Development Project Proposal, Part 2, Phase 2</p> <p>Assuming the Phase 1 and 2 work is successfully accomplished as described, what would the change in TRL be at the conclusion of Phase 2, relative to the concluding TRL at the end of Phase 1, as evaluated under PRC 2-1, “Project Proposed Advancement in TRL During Phase 1”:</p> <ul style="list-style-type: none"> • 0 points – the TRL would be unchanged, with no significant advancement within it. • 20 points – the TRL would be unchanged, but with significant advancement within it during Phase 2. • 40 points – the TRL would be advanced by one level during Phase 2. • 60 points – the TRL would be advanced by one level and have significant progression (more than 50% completed) through the next level during Phase 2. • 80 points – the TRL would be advanced by two levels during Phase 2. • 90 points – the TRL would be advanced by two levels and have significant progression (more than 50% completed) through the next level during Phase 2. • 100 points - the TRL would be advanced by three or more full levels during Phase 2. <p>Weighted as 25% of the total Project Outcomes score.</p>
<p>PRC-2-3 TRL preparedness for CUAS Sandbox 2026</p> <p>IDEaS is considering conducting a CUAS Sandbox in June 2026 and it is of benefit if CUAS Concept Development proposals can be sufficiently advanced in their TRL to demonstrate at CUAS 2026.</p> <p>To be selected for a Sandbox, TRL 5 must have been successfully completed by January 15, 2026. Achieving TRL 5 in time for CUAS 2026 Sandbox is NOT a guarantee of selection to attend the Sandbox, as the Sandbox application and selection process for CUAS 2026 will be applied to all applicants at that time, including those concept developments funded by IDEaS.</p>	<p>Concept Development Project Proposal, Part 2</p> <p>Assuming the Phase 2 work is successfully accomplished as described and on schedule, and with consideration to the TRL change claimed by the applicant, if IDEaS were to conduct a CUAS 2026 sandbox in June 2026, when would the solution have successfully completed TRL 5? Note that the date windows below are based on assumed Sandbox participant selection timings. While the points will be awarded based on these date windows, the actual dates and number of windows used for CUAS 2026 may vary without further notice.</p> <ul style="list-style-type: none"> • 0 points –The solution will NOT have successfully completed TRL 5 by May 15, 2026. • 10 points - The solution is scheduled to complete TRL 5 between January 15, 2026, and May 15, 2026. • 50 points - The solution is scheduled to complete TRL 5 between October 1, 2025, and January 15, 2026. • 100 points - The solution is scheduled to complete TRL 5 before October 1, 2025 <p>Weighted as 25% of the total Project Outcomes score.</p>

PRC	Document in which the applicant provides their response, and the evaluation methodology
<p>PRC-2-4 Project post-IDEaS continued development</p> <p>The IDEaS funding provided through this potential Contribution Agreement is intended to kick-start innovation solutions to a challenge, but generally is not intended to be sufficient in scale or duration to fully fund the development through to commercially available production. Consequently, the potential longer-term IDEaS return on investment will be enhanced if there is a reasonable strategy in place for the applicant to continue the development after the proposed IDEaS funded Contribution Agreement concludes.</p>	<p>Concept Development Project Proposal, Part 2.7</p> <p>In regard to providing an overview and roadmap of the strategy, plans, and commitments to continue the required effort post-IDEaS to bring the solution to a commercially available product:</p> <ul style="list-style-type: none"> • 0 points - There is no post-IDEaS roadmap that is reasonable and achievable. • 50 points - There is a post-IDEaS roadmap that is reasonable, but achieving it relies on one or more major factors that are in doubt. • 100 points - There is post-IDEaS roadmap that is reasonable and achievable with all major elements appearing to be in place. <p>Weighted as 25% of the total Project Outcomes score.</p>

Annex C CUAS evaluation of scientific and technical risk

Note that this risk assessment is only completed for the solutions that are provisionally selected for funding as part of the final stages of the selection process. Those risk results may influence the final selection decisions.

In seeking innovative solutions, the IDEaS program is open to high-risk untested solutions, provided such solutions come with reasonable substantiation and a high impact to addressing the challenge at hand. High risk without high reward is of less interest.

To enable that aspect of the selection process the following risk assessment profile is used as an overall assessment of the technical feasibility and risk of the solution successfully performing to the extent described by the applicant.

Consequently, it is the quality and completeness of the applicant's responses throughout their application that provide the applicant's opportunity to influence the risk assessment. Incomplete or unreasonable explanations will tend to increase the risk level.

The risk assessment reflects a combined consideration of:

1. What has already been proven through testing? Were the solution's levels of performance and characteristics successfully tested to substantiate the description? To emphasize, untested does not mean unacceptable, and it is fully expected that concepts and prototypes will be untested in many areas.
2. If not tested, how reasonable were the provided substantiations for the claimed yet untested descriptions?
3. From a technical perspective and given those substantiations, what is the resultant likelihood for the solution not achieving its described performance levels or characteristics?
4. What would be the consequence to the solution's effectiveness be in addressing the challenge, if that likelihood occurs?
5. With that likelihood and consequence, what is the overall scientific and technical risk?

The risk evaluation is based on the information provided throughout the application process. No additional specific risk information is provided by the applicant. There is no point score for this risk assessment. Instead, the results are used during the strategic selection process, as described in the applicant Guide.

Risk evaluation process:

Question 1, Testing to date. How often were the described levels of performance and characteristics supported by successful and repeatable testing?

- Fully untested
- Mostly untested
- Mixed tested and untested
- Mostly tested
- Fully tested

Question 2: How reasonable was the provided substantiation to support the described level of performance or characteristic when testing was not yet done, not successful, or not repeatable?

- **Extremely unreasonable.** Substantiations were almost always unreasonable or not present, based on unproven or untested principles that do not align, or even contravene, known science and technology principles.
- **Mostly unreasonable.** Substantiations were usually unreasonable or not present, and while not fully misaligning or contravening known science and technology principles did not provide an adequate explanation as to why that outcome would be possible.
- **Generally reasonable.** Substantiations were generally reasonable and present, generally remaining within touch of the boundaries of accepted science and technology principles, even if stretching those boundaries to a reasonable extent.
- **Mostly reasonable.** Substantiations were often reasonable and present, generally remaining within the boundaries of accepted science and technology principles.
- **Extremely reasonable.** Substantiations were almost always reasonable, based on principles that are well understood and accepted using well established science and technology principles.

Risk table 1: Resultant likelihood of not achieving the described performance and characteristics. Derived from the intersection of the preceding question 1 and 2.						
From question 2 Reasonableness of substantiation for untested characteristics	Extremely unreasonable	Moderate	Moderate	High	Extreme	Extreme
	Mostly unreasonable	Low	Moderate	High	High	Extreme
	Generally reasonable	Low	Moderate	Moderate	High	High
	Mostly reasonable	Negligible	Low	Moderate	Moderate	High
	Extremely reasonable	Negligible	Negligible	Low	Moderate	Moderate
		Fully tested	Mostly tested	Mixed	Mostly untested	Fully untested
From question 1: testing to date						

Enter the resultant “likelihood” from table 1 into “Table 2: resultant risk” below.

Question 3: Consequence. For those performance levels or characteristics that were less likely to be achieved, what would be the collective consequence to the solution’s effectiveness in the operational scenarios if they are not achieved?

- **Extreme.** The inability to achieve those levels would collectively and significantly impede the solution’s overall claimed operational scenario effectiveness, to the point of it losing applicability to the challenge.
- **High.** The inability to achieve those levels would collectively and significantly impede the solution’s overall claimed operational scenario effectiveness, to the point of it losing applicability to the one or more of the claimed scenarios.
- **Medium.** The inability to achieve those levels would collectively degrade the solution’s overall claimed operational scenario effectiveness, but it would still have some applicability to some of the claimed scenarios.
- **Low.** The inability to achieve that those levels would collectively have minimal impact to the solution’s overall claimed operational scenario effectiveness.
- **Negligible.** The inability to achieve that those levels would collectively have virtually no impact to the solution’s overall claimed operational scenario effectiveness.

Resultant risk table 2 Derived from the intersection of the likelihood from table 1 and the consequence from question 3:						
Consequence from Question 3	Extreme	Significant	Major	High	Severe	Severe
	High	Moderate	Significant	Major	High	Severe
	Medium	Low	Moderate	Significant	Major	High
	Low	Negligible	Low	Moderate	Significant	Major
	Negligible	Negligible	Negligible	Low	Moderate	Significant
	Negligible	Low	Moderate	High	Extreme	
From Risk Table 1 above: Likelihood						

The result from table 2 is the overall assessment of a solution’s “Scientific and technical risk”.

Annex D Project risk

Note that this risk assessment is only completed for the solutions that are provisionally selected for funding as part of the final stages of the selection process. Those risk results may influence the final selection decisions.

To enable an assessment of the project risk for accomplishing the proposed work to develop the proposed solution, the following risk assessment will be completed and then considered during the selection process.

The risk evaluation is based on the information provided throughout the application process. No additional specific risk information is provided by the applicant. There is no point score for this risk assessment. Instead, the results are used during the strategic selection process, as described in the Applicant Guide.

Consequently, it is the quality and completeness of the applicant's responses throughout their application that provide the applicant's opportunity to influence this risk assessment. Incomplete or unreasonable explanations will tend to increase the risk level.

The risk assessment reflects a combined consideration of:

1. The value of DND funding being contributed.
2. Public sensitivity to the involved organizations, the project, and the work being undertaken.
3. The project complexity. What is the degree of complexity and level of difficulty of the project?
4. The project feasibility. How sound is the project work plan, schedule and budget?
5. The project management. Does the company have the managerial capability and oversight capacity to manage the project effectively?
6. How sound is the overall financial context?
7. Percentage of confirmed funding at the time of assessment (inclusive of IDEaS if funded)
8. Scientific/Technical expertise and capacity of company and project team. Does the company and project team have the level of experience and sufficient scientific and/or technical expertise to carry out the activities of the project?
9. DND's past experience with the company. What was the Recipient's performance result on previous or current funding agreements with DND and/or other government departments?

The blending of the above results in a project risk on a scale of:

- Negligible
- Low
- Moderate
- Significant
- Major
- High
- Severe
- Extreme

The results are used during the strategic selection process, as described in the Applicant Guide.