IDEaS Reference Document for L1 Organizations

Goal of the IDEaS program

The Innovation for Defence Excellence and Security (IDEaS) program was announced in Canada's new Defence policy, *Strong, Secure, Engaged*, and commits to $1.6 billion for innovation over the next 20 years (approximately $84 M/year). Being run by ADM (S&T) within the Department of National Defence and the Canadian Forces (DND/CAF), the program intends to revolutionize the process of deriving solutions to complex defence and security challenges.

The IDEaS program is comprised of five elements:

1. **Competitive Projects**
   Open solicitations that mobilize external innovators to provide their solutions, in whole or in part, to defence and security challenges and mature those solutions towards prototypes and potential capabilities. Allocated funding of approximately $52 M/year.

   Level of Funding: $100k to $1.2M per project of developmental funding
   SRL Level Input / Output: 1-6 / 1-9
   Duration: 1-2 years
   Direct deliverables: The outputs can be rolled into a DRDC program or bridged into Sandboxes or Innovation Assessment and Implementation. L1 funding of up to $20 M/year can be allocated to support further development via a directed contract.

2. **Contests**
   Provides a monetary prize for the successful demonstration of promising solutions. Allocated funding of approximately $5 M/year per project.

   Level of Funding: $100k to $1.2M per completed project
   SRL Level Input / Output: 1-6 / 5-9
   Duration: 3-24 months
   Direct deliverables: Contests are a way to leverage capabilities within the innovation system to address defence and security challenges. The results can support an analysis of Options or Statement of Requirements for a procurement based on a competitive process.

3. **Innovation Networks**
   Multidisciplinary networks of S&T experts (academics, industry, non-federal government entities, etc.) that can apply their expertise towards defence and security challenges.

   Level of Funding: up to $3 M/year per network
   SRL Level Input / Output: 1-6 / 1-9
   Duration: 3+ years

Direct deliverables: Innovation Networks build capacity and capability within the innovation system to address defence and security challenges. The outputs of Innovation Networks can be leveraged to inform future S&T investments and the DRDC program.

4. **Sandboxes**
   An opportunity for innovators to test and demonstrate their solutions in a scenario and test environment provided by DND/CAF. Solutions will be evaluated by subject-matter-experts and feedback provided to participants.

   Level of Funding: No development funding; IDEaS provide the test environment. Allocated funding of approximately $3 M/year.
   SRL Level Input / Output: 5-6 / 5-7
   Duration: 1 month
   Direct deliverables: The purpose of a Sandbox is to provide a test environment to the innovators to accelerate the development and testing of prototypes. Results can permit a refinement of solutions, support an analysis of options by the L1 or permit development of a Statement of Requirements for a procurement based on a competitive process.

5. **Innovation Assessment & Implementation**
   An opportunity to purchase a limited number of pre-production units of a solution for evaluation in a realistic environment by CAF operators.

   Level of Funding: Up to $5.0M per annum (CAF will provide operational evaluations)
   SRL Level Input / Output: 7-8 / 7-9
   Duration: 1-6 months
   Direct deliverables: The IAI report can be used to influence the Statement of Requirements for any future competitive procurement process.

The IDEaS program is designed to find new solutions to current and future Defence and security problems or to improve on current capabilities. The goal of the program is to turn "ideas" into valuable realities that will help the DND/CAF to remain strategically relevant and operationally responsive over time. By supporting Canadian innovators and helping to foster Canadian innovation capacity, the program will support gradual and continual improvements in current capabilities, as well as the development of new capabilities that will provide transformative and revolutionary changes, over time, in order for the department to deliver on defence policy.
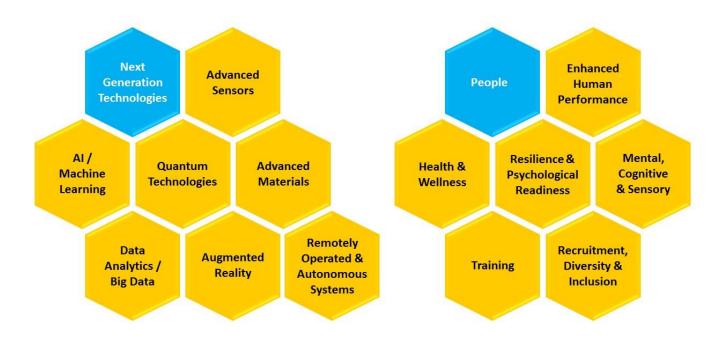
All problems submitted to IDEaS must be aligned with Departmental strategic priorities and guidance. The following illustration conveys 12 high-level priority themes drawn from Defence policy, as well as sub-themes that help to frame the departmental problem and solution space. The themes were identified at the behest of Chief of Force Development. They are intended as a simple and straightforward way to frame and communicate innovation pathways. The themes can also be used by senior leaders to assist in prioritizing among challenges for innovation.

**Figure 1: Chief of Force Development Top-Level Priority Areas
and Sub-Themes for "People" and "NextGen Technologies"**

Problem Criteria

Here is a template for creating a Challenge statement, as a starting point for IDEaS:

How might we_____ for _____ in order to _____.

Ex: How might we *provide real time location* for *Navy Divers* in order to *increase their situational awareness and increase mission capabilities*?

Defence and Security Challenges must meet the following criteria:

- Represent a clear and concise problem <u>not</u> a solution;
- Align with strategic priorities/guidance;
- Have a definite scope;
- A solvable problem within a certain timeframe;
- A real "pain point" and not just a "nice to have";
- Not require access to classified knowledge or materials;

In addition to the above, challenges will be evaluated, based on the following:

- Whether the problem prescribes a single solution or creates opportunities for innovation;
- The problem fits within the mandate and scope of the target program (IDEaS, Build in Canada Program (BCIP), Innovation Solutions Canada (ISC), etc.);
- Whether challenges are likely to attract interest from an external innovation audience;
- Not adequately covered by existing or planned DRDC S&T programs; and
- Potential for exploitation/adoption of resulting solutions within DND/CAF.

IDEaS Elements Innovation Agenda

Chief of Force Development and IDEaS will be jointly canvasing the L1s to identify challenges or opportunities for innovation by the IDEaS program using the above template. Each L1 organization will be asked to identify their top priorities in consultation with their ADM (S&T) DGs/DSTs vis-à-vis the S&T program and the entire S&T investment portfolio. Once the challenges are identified, and depending on their overall number, the L1 stakeholders on the CFD Working Group might be subsequently involved in prioritizing them in order to shed light on the most pressing issues. The final list will be discussed at the Force Development Forum.

The challenges will be subsequently reviewed by the IDEaS Defence Innovation Advisory Group (DIAG) and the Board. Based on stakeholder input, the challenges will be assigned to one of the program's five elements or as part of a multi-element Call for Proposals. Endorsement of the IDEaS innovation agenda will be sought by the S&T Investment Steering Committee (STISC).

It should be noted that not every challenge will be appropriate for the IDEaS program or its five elements. The element that is selected will determine the way challenges are refined. Challenges can also be combined in instances where they are found to overlap or are similar in scope.

Requirements of the L1 Sponsor

Submitting challenges to the IDEaS program is merely the first step in the innovation process. Each L1 organization is required to commit human resources, possibly also, additional funding, to ensure the program's success. Each challenge will require a team consisting of a Project Champion, point of contact and/or subject-matter-expert, S&T Advisor, Evaluator and Integrator.

Project Champion

The Project Champion is assigned by the L1 organization who requests the challenge, and must be able to assign human resources to the project. The Project Champion is the true advocate for the project and someone with the appropriate authority to ensure its success. Champions should be senior personnel who have a vision of future warfare, knowledge of the problem area and can work with the concept team to ensure the vision for the project is successfully translated into requirements and solution design. Their role is to negotiate with the relevant stakeholders to remove obstacles to success, to allocate internal resources to help ensure successful completion of the project and to pave the way for selection and implementation (or not) of solution concepts.

Primary Point of Contact / Subject-Matter-Expert

Each Challenge must include a primary Point of Contact (POC) and/or Subject-Matter-Experts (SMEs) that are identified by the L1 stakeholders. The contacts will be asked to attend meetings, provide guidance and to answer questions within a reasonable time period. The contacts should be open-minded, have a passion for the task and must not be "voluntold" to participate.

As a first step, relevant POCs/SMEs will be asked to participate in problem scoping sessions and/or Ideation workshops or symposia, with IDEaS Scientists, as appropriate, to flesh out the challenge or opportunity for innovation. The amount of time will depend on the how complicated or complex is the challenge or opportunity for innovation. Problem scoping sessions can range from two to five hours over several weeks to up to 30-40 hours for a recent Contest. Full or multi-day Ideation symposia or focused workshops will also be held where appropriate.

The availability of the POC to respond to questions, requests, and more from staff or innovators is also vitally important. All correspondence should be responded to within 3 days.

Requirements of ADM (S&T)

ADM (S&T) Advisor

The S&T Advisor plays an important leadership role in the project. They must have expertise in a S&T domain related to the Challenge area and be able to offer qualified and competent advice to the team. Their role is to provide information that can help shape research and innovation activities, and to assist the project team in making decisions that are based on sound science.

The S&T Advisors should be available to participate in problem scoping sessions and/or Ideation workshops or symposia, as appropriate. They should also be available to review challenge documents and possibly also, to act as "Evaluators" (see below) to evaluate funding proposals, and "Integrators" to liaise with contractors, review funding projects and write scientific papers.

Evaluator

Evaluators are subject-matter-experts who are assigned to the Challenge to evaluate innovator proposals using established evaluation frameworks. Evaluators are engaged prior to the awarding of contracts. They are selected for their domain knowledge and/or military background.

Prior to receiving proposals, Evaluators will be asked to read an Evaluation Handbook, complete an Evaluator Registration, sign a Confidentially Agreement and complete two-hours of training. While the overall time commitment will vary based on the element and number of proposals, While the amount of time is likely to vary based on the IDEaS element, Evaluators will likely be assigned multiple proposals to review within a set time period and can expect to spend 1-2 hours reviewing each proposal. For Competitive Projects, each proposal will be assigned to two Evaluators who –following their independent review of each proposal—will be required to participate in a consensus meeting for up to 30-minutes per proposal. One of the Evaluators will then be asked to participate in a Strategic Considerations Committee (SCC) meeting (1-3 hours) to speak to the merits of each proposal and to make recommendations with respect to funding.

Integrator

The role of Project Integrator is normally assigned to an ADM (S&T) subject-matter-expert. Integrators are selected for their domain knowledge and familiarity with the problem space. They typically become involved after the contract(s) are awarded and are responsible for maintaining a connection with external innovator(s). They provide strategic advice to the sponsoring organization, Project Champion and primary POC, and are required to prepare DRDC publications (i.e., Scientific Briefs) for each funded project, as well as a Scientific Letter for each challenge area, based on all of projects that were funded, using templates supplied by IDEaS.

For instance, an Integrator for the Competitive Projects element will be asked to assess the progress of the funded projects in order to make a recommendation at the six-month point as to whether an in-depth proposal should be requested from the Contractor for continued funding.

The Integrators will then be asked to collaborate with one another, where applicable, to write a Scientific Letter once all of the funded projects have been completed, in order to document the progress that was made, and to make recommendations to the L1 Sponsor, where appropriate.

Involvement of other Key Beneficiaries

While some challenges will refer to "niche" problems that are experienced by a small or highly specialized population, it is more likely that multiple stakeholders within DND/CAF will share in the defence and security challenges and opportunities that are proposed. Each challenge will have a L1 Sponsoring organization who should also be the main beneficiary of any solutions, but part of the goal of IDEaS is to search for other organizations and/or groups who are impacted by the problem area, and to explore ways that solutions can also create value for these stakeholders. As such, a broader group of stakeholders may be consulted or asked to participate in the process.

Competitive Projects Schedule - Example			
Schedule to Conduct a Competitive Project	**Days Consumed**	**Cumulative Date**	**Participants**
Challenge Selected	0 days	1-Apr-19	
Problem Scoping / Ideation	14 days	15-Apr-19	POC/SME, ADM(S&T) Advisor Other Key Beneficiaries
Launch Preperation	30 days	1-May-19	
Launch Call for Proposals	0 days	1-May-19	
Innovator Response Period	30 days	31-May-19	
Evaluation of Innovator proposals	30 days	30-Jun-19	Evaluator
Contract Award	4 months	28-Oct-19	
Component 1a Work Commences	6 months	25-Apr-20	
Integrator Evaluation	14 days	9-May-20	Integrator
Strategic C	7 days	16-May-20	
Component 1b Proposal Development	30 days	15-Jun-20	
Contract Award	4 months	13-Oct-20	
Component 1b Work Commences	2 years	10-Feb-21	
Integrator Evaluation	14 days	24-Feb-21	Integrator
Closeout or off-ramping of project	0 days	24-Feb-21	