National Defence   Défense nationale

CANADIAN ARMED FORCES

FORCES ARMÉES CANADIENNES

SANDBOXES:
Findings in regard to the Request for Information 2018-1
December 19, 2018

ENVIRONNEMENTS PROTÉGÉS :
Conclusions concernant la demande de renseignements de 2018-1
19 décembre 2018

IDEaS IDEeS
INNOVATION FOR DEFENCE
EXCELLENCE AND SECURITY
INNOVATION POUR LA DÉFENSE,
L'EXCELLENCE ET LA SÉCURITÉ

STRONG
SECURE
ENGAGED

PROTECTION
SÉCURITÉ
ENGAGEMENT

Canada

I would like to extend our sincere thanks and appreciation to all that replied to this

Request for Information.

Your responses to this new program, and in particular the Sandbox element and the associated five science and technology challenges under consideration, have been instrumental in enabling us to make adjustments essential to the implementation of this innovation system. We are seeking an optimal manner in which to foster innovative collaborations to create, develop, and implement viable solutions to difficult defence and security problems. Your participation in developing those methods is essential to our success. We look forward to your continued involvement in supporting our troops. Thank you!

Eric Fournier

Director General responsible for

Innovation for Defence Excellence and Security (IDEaS)

December 19, 2018

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1. INTRODUCTION

1.1. The Innovation for Defence Excellence and Security Program (IDEaS), on behalf of the Department of National Defence and Canadian Armed Forces (DND/CAF), released this Request for Information (RFI) in order to engage the innovation community and gain their feedback on a collection of specific DND/CAF defence and security challenges for which DND/CAF intend to provide future opportunities in Sandbox test environments.

1.2. Within the IDEaS Program, Sandboxes are an opportunity for participants to test and demonstrate their solutions to published Sandbox challenges in a DND/CAF-provided test environment and test scenario, receiving observational feedback from DND/CAF experts and potential users.

1.3. The RFI included a description of the proposed Sandbox process, as well as five challenges and associated Sandboxes DND/CAF was hoping to conduct in 2019, subject to the responses of the RFI which invited:

1.3.1. Comments on the concept of an IDEaS Sandbox in general; and

1.3.2. Comments on specific DND/CAF challenges for which an IDEaS Sandbox is notionally proposed.

1.4. Responses to the RFI have been used to help determine which Sandboxes could be implemented, and in what order. This Findings Report provides an overview of those results, noting that more specifics on each Sandbox will be provided when each Sandbox is actually launched.

1.5. This Findings Report does not include or attribute information to any specific respondent and is the only report being provided to all who responded to the RFI.

2. STATISTICAL RESULTS OF THE RFI

2.1. The RFI was opened on 21 August 2018 with a closing date of 19 September. At the request of several participants, the closing date was extended to 24 September. Responses were only accepted via the online IDEaS Program submission tool.

2.2. The following quantities of responses were received, noting that some companies responded to more than one challenge, and/or with multiple responses with different solutions to the same challenge. These numbers exclude partially completed responses that seemed to be tests of the online response tool rather than actual submissions in themselves.

Challenge	Responses
1. Counter Micro and Mini Unmanned Aerial Systems	16
2. Camouflage against Surveillance Technology for Dismounted Soldiers	0
3. Corrosion Detection in Ships	4
4. Enhanced Small Arms Targeting Systems	3
5. Stand-Off Detection of Explosives	3
General Responses with no Challenge Specified	1

3. COLLECTIVE ASSESSMENT OF ALL RESPONSES

3.1. All responses were reviewed to extract areas of common concern or suggestions for the administration and conduct of Sandboxes in general, as well as the proposed Sandboxes for each of the five specific challenges. Reviewers included military staff that originated each challenge, as well scientists in the applicable field of research.

3.2. The potential solutions described in any responses were not point-scored against any set criteria, nor were they used as a basis for any pre-qualification for future Sandboxes. Individual responses were simply used to develop a generic state of collective preparedness to address the challenge in question, which led to the following decisions to conduct, postpone, adjust, or discontinue the notional intent for each Sandbox.

3.3. For any Sandbox that now proceeds to the application stage, the Sandbox will be open to anyone to apply even if they did not reply to this RFI. The information in this RFI will in no way be used during the assessment of such applications.

3.4. Based on the responses, the following general comments were collected:

    3.4.1. **Sandbox Overall Process**. Aside from the specifics that follow, the basic approach proposed to administer the Sandbox element of the IDEaS Program was supported as described in the RFI.

    3.4.2. **Sandbox Funding**. Multiple respondents enquired about the lack of funding being provided to Sandbox participants. Participation in a Sandbox imposes costs on the participant in terms of preparing prototypes, shipping, travel, accommodations, cost of the demonstration (particularly for consumables), etc.

    IDEaS Response:

        3.4.2.1. The lack of any funding for a Sandbox is accepted as a valid concern and a potential impediment to acquiring the best innovations for the CAF to be included in a Sandbox.

        3.4.2.2. IDEaS will consider a funding mechanism as part of the Sandbox process. Such mechanisms may vary in both type and quantity for each Sandbox. They are intended to incentivize participation in a Sandbox rather than provide direct and full compensation or financial profit for participating, and they may well be less than the full costs of participation for any specific participant.

    3.4.3. **Post-Sandbox Activity**. Respondents to the RFI asked about what happens after the Sandbox is concluded.

    IDEaS Response

        3.4.3.1. After the Sandbox is completed, each participant will receive observational feedback on their demonstration from the DND/CAF experts that attended the Sandbox. Concurrently, DND/CAF will internally consider what they observed and incorporate that knowledge into their future force development decisions. However, as there is no contractual commitment from either the participant or DND/CAF for any post-Sandbox work, each party can then proceed independently.

        3.4.3.2. Consequently, the conduct of a Sandbox by IDEaS does not include any commitment for any follow-on procurement activity by DND/CAF even if the solution demonstrated appears to be fully successful in every way.

4. RESPONSES ON SPECIFIC CHALLENGES AND SANDBOXES

4.1. There were no consistent comments on any of the Challenges in regard to the way Challenges were presented, or the proposed conduct, criteria, or location of the Sandboxes. The most consistent theme was that of funding, which is covered in the previous section of this report, and the timing of each Sandbox, which is covered here.

4.2. That the timing of each Sandbox was an issue for many respondents is not surprising, and indeed was the driving reason for issuing this RFI. Information received has helped IDEaS to better understand what innovative solutions would be ready and on what schedule for these challenges. Likewise, innovators external to DND/CAF were not previously aware of these challenges so the likelihood that they would be ready to demonstrate a prototype in 2019 was quite low. The RFI proposed challenges and a schedule to generate that discussion and feedback.

4.3. Consequently, although not fully resolved, the interest and viability of each Sandbox now has additional clarity. The adjustments IDEaS has made are summarized below, noting that:

4.3.1. This remains a tentative schedule as other factors beyond this RFI continue to evolve.

4.3.2. Additional updates on such intentions will be provided on the IDEaS website Future Opportunities page:

https://www.canada.ca/en/department-national-defence/programs/defence-ideas/future-opportunities.html

4.3.3. The final Sandbox design, criteria, content, and firm schedule will be included when each specific Sandbox is formally released for applications.

Challenge 1. Counter Micro and Mini Unmanned Aerial Systems (CUAS)			
16 responses received			
1. IDEaS is committed to conducting a CUAS Sandbox in 2019 and is continuing to analyse our knowledge gap between other recent CUAS tests we and our allies have completed and the types of solutions offered in this RFI.			
2. Once that analysis is complete, the final determination of what kind of CUAS Sandbox we will conduct will be announced on the IDEaS website and as part of the application process.			
Original Timing		**Revised Timing**	
Applications	**Sandbox**	**Applications**	**Sandbox**
Winter 2019	Spring 2019	Winter 2019	Summer 2019

Challenge 2. Camouflage against Surveillance Technology for Dismounted Soldiers			
No responses received			
There were no responses to this challenge, and consequently any Sandbox is postponed indefinitely at this time. This challenge may be offered via a different IDEaS element in the future.			
Original Timing		**Revised Timing**	
Applications	**Sandbox**	**Applications**	**Sandbox**
Winter 2019	Spring 2019	Postponed indefinitely	Postponed indefinitely

Challenge 3. Corrosion Detection in Ships			
4 responses received			
Some unique and unexpected concepts of interest were proposed but are not yet ready. The Sandbox is postponed to enable some of those different approaches to be further developed.			
Original Timing		**Revised Timing**	
Applications	**Sandbox**	**Applications**	**Sandbox**
Fall 2018	Winter 2019	Early 2020	Spring 2020

Challenge 4. Enhanced Small Arms Targeting Systems			
3 responses received			
Proposed solutions did not offer a significant change to the existing knowledge DND/CAF already has on such methods. DND/CAF will refine its gap analysis on this problem to more precisely describe the challenge that needs to be addressed.			
Original Timing		**Revised Timing**	
Applications	**Sandbox**	**Applications**	**Sandbox**
Winter 2019	Spring 2019	TBD	TBD

Challenge 5. Stand-Off Detection of Explosives
3 responses received

1. Some concepts of interest were proposed but are not yet ready.

2. IDEaS recognized the difficulty and importance of this challenge. Consequently, the same challenge was also issued as a funded developmental project opportunity under the IDEaS Competitive Projects (CP) Call for Proposals (CFP) #2, open for responses from 18 Oct 2018 to 27 Nov 2018.

   https://buyandsell.gc.ca/procurement-data/tender-notice/PW-18-00847400

3. This Sandbox is postponed subject to the results of projects conducted under CP/CFP#2.

Original Timing		Revised Timing	
Applications	**Sandbox**	**Applications**	**Sandbox**
Winter 2019	Spring/Summer 2019	TBD	TBD

5. CONCLUSION

5.1. Given the newness of the IDEaS Program, this Sandbox RFI has provided valuable input for the IDEaS team on the proposed approach for conducting Sandboxes, and the state of readiness of innovators on these specific Challenges. The responses have directly led to adjustments in our program design, such as considering the provision of funding for specific requirements for Sandbox participants, and for the scheduling of these five specific challenges.

5.2. While this RFI was useful in this early stage of the IDEaS Program, it should not be seen as a mandatory step for each Sandbox announcement moving forward. As the Program matures, the necessity for such formal intermediate processes may not always be required. We are seeking to reduce process when possible.

5.3. Further adjustments on our design and challenges can be expected as the IDEaS Program evolves and matures over the coming years. Our website and news feed will be the primary method for communicating such changes and future opportunities to participate.

   https://www.canada.ca/en/department-national-defence/programs/defence-ideas.html

Thank you for participating in this Sandbox 2018-1 Request for Information.