Amendment #1

This amendment is raised to address questions received in response to the RFI.

Question #1:

Can you please let me know if there are any requirements or limitations on formats or file sizes? Is there a limitation to the number of pages or file size? Can we submit video files? For the delivery of this response is there a place to post the files or would it be emailed to someone?

Answer #1:

The email size limits to 5MB per email. We are primarily looking for written documents/posters outlining the product (Word & PDF are both acceptable) as well as existing presentations on the product (PowerPoint). You can use multiple emails as long as it is clear they all correspond to the same product.
Responses must reference the solicitation number (2016-11450) and can be sent to the Contracting Authority as indicated below:

By Email: heather.riggs@forces.gc.ca

Or by mail:

DRDC Ottawa
Attn: Heather Riggs
3701 Carling Avenue, BLDG 29
Ottawa ON K1A 0K2

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Question #2:

Is DRDC only interested in receiving information on Products that integrates all the information sources OR is DRDC also interested in information concerning a specific Sub-systems such as Space Surveillance and Tracking tool: on-orbit space situational awareness (conjunction analysis, re-entry prediction, overflight, and maneuver detection), status of satellite communication systems (including ground infrastructure and constellation) as a stand alone?

Answer #2:

Our research focus is on systems which integrate all sources, but we are also interested in systems which integrate subsets. We would be interested in hearing descriptions of how these subset-focused systems could be incorporated into a larger system which integrates all data sources.

All other terms and conditions remain unchanged.

REQUEST FOR INFORMATION (RFI)

DEPARTMENT OF NATIONAL DEFENCE (DND)
DEFENCE RESEARCH AND DEVELOPMENT CANADA (DRDC)

1.0 OBJECTIVE

The objective of this Request For Information (RFI) is to determine the capabilities and readiness of Space Common Operating Pictures (S-COPs), as well as Space Utilization display (SpUD) currently available through Industry.

2.0 APPLICABLE DOCUMENTS (AD)

N/A

3.0 GENERAL

This RFI seeks information from vendors with respect to current Space Common Operating perspectives.

4.0 DEFINITIONS

Space Common Operating Picture (S-COP) – A visualization tool combining multiple feeds of information in one central location and a coherent, integrated picture; enabling the user and decision makers to see developments from a particular feed as it pertains to their larger situational awareness.

Space Utilization Display (SpUD) – A tool which responds to developments in the on-orbit environment and the event effects on the terrestrial/maritime/aerospace domains and operations. It provides appropriate courses of action to the decision makers and users in order to respond to the developing situation. In this context, the SpUD is analogous to the general industry term Space Battle Management Picture.

Technology readiness levels are defined in Table 1.

Table 1: Technology Readiness Levels (TRLs) (As per Buy & Sell Definition)

Technology Readiness Level	Definition of TRL Level
1	**Basic principles of concept are observed and reported.** At this level scientific research begins to translated into applied research and development. Activities might include paper studies of a technology's basic properties.
2	**Technology concept and/or application formulated.** At this level invention begins. Once the basic principles are observed, practical applications can be invented. Activities are limited to analytical studies.
3	**Analytical and experimental critical function and/or proof of concept.** At this level active research and development is initiated. Activities might include components that are not yet integrated or representative.
4	**Component and/or validation in a laboratory environment.** At this level basic technological components are integrated to establish that they will work together. Activities include integration of "ad hoc" hardware in the laboratory.
5	**Component and/or validation in a simulated environment.** At this level the basic technological components are integrated for testing in a simulated environment. Activities include laboratory integration of components.
6	**System/subsystem model or prototype demonstration in a simulated environment.** At this level a model or prototype is developed that represents a near desired configuration. Activities include testing in a simulated operational environment or laboratory.

7	**Prototype ready for demonstration in an appropriate operational environment.** At this level the prototype should be at planned operational level and is ready for demonstration of an actual prototype in an operational environment. Activities include prototype field testing.
8	**Actual technology completed and qualified through tests and demonstrations.** At this level the technology has been proven to work in its final form and under expected conditions. Activities include developmental testing and evaluation of whether it will meet operational requirements.
9	**Actual technology proven through successful deployment in an operational setting.** At this level there is actual application of the technology in its final form and under real-life conditions, such as those encountered in operational test and evaluations. Activities include using the innovation under operational conditions.

5.0 BACKGROUND

DRDC is currently undertaking an effort within its Space Situational Awareness Project to demonstrate space common operating picture concepts. The goal of this project is to confirm an effective method of delivering integrated information to decision makers at national and allied operations centers in a manner that enables them to properly assess risks and possible courses of action for mitigation. The project will result in a demonstration of a possible S-COP/SpUD concepts and report outlining an analysis of the effectiveness of fusing/integrating various forms of information into a coherent picture for the decision makers and users to ingest and exploit. The outputs of this project are intended to advise and assist Director General Space in future work.

The information deemed important to the users of the S-COP encompasses a wide field. This field currently includes on-orbit space situational awareness (conjunction analysis, re-entry prediction, overflight, and maneuver detection), status of satellite communication systems (including ground infrastructure and constellation), missile warning, overhead persistent infrared (OPIR), space and terrestrial weather, Position, Navigation and Timing (PNT), and SIGINT/ELINT.

6.0 SCOPE

The responder is requested to provide information with respect to any products it currently has or is developing which meets the definitions of a S-COP and/or SpUD, as well as the technical readiness level of the system being presented. An estimate of remaining development costs as well as unit costs for complete systems is requested.

7.0 REQUESTED INFORMATION

Responder is requested to provide a detailed description of their product, including but not limited to the following categories:

1. Technical
   a. Types of information being fed in the system (e.g. Space Weather, Missile Warning etc.)
   b. System Architecture (e.g. web-based, standalone desktop programs)
   c. System Structure (e.g. is it module-based or a single unit)
   d. Employment capability (e.g. what is the vision of how the system would be used)
   e. Presentation of information
      i. Physically (e.g. screens, augmented reality, etc.)
      ii. Software (layered feeds, user defined operating picture, etc.)
   f. Capabilities of system (what can it do with the information being fed to it, e.g. Conjunction analysis, etc.)
   g. Prior or current system use (e.g. has the system been used/trialed either internally or externally)

2. Security

        a.   Approach to dealing with multi-level network security requirements (e.g. taking information from a 'high' to 'low' network and vice-versa)

3.   Cost
        a.   How is cost of the system determined?

4.   Miscellaneous
        a.   Include a list of constraints and assumptions that apply to the information provided in the response
        b.   Provide level of Canadian content of the system (e.g. % of work performed by Canadian-based personnel)
        c.   Vision for future system development (e.g. plans for what the system will grow/develop into)

8.0 CONTRACTUAL, PROGRAMMATIC, AND GENERAL INFORMATION

9.0 ADDITIONAL INFORMATION FOR INTERESTED FIRMS

This is not a bid solicitation and a contract will not result.

Potential respondents are advised that any information submitted to Canada in response to this Request for Information may be used by Canada in the development of a subsequent competitive Request for Proposal (RFP) and, or Request for Standing Offer (RFSO). However, the Government is not bound to accept any response or to consider it further in any resulting bid solicitation documents.

The issuance of this Request for Information does not create an obligation for Canada to issue a subsequent RFP and, or RFSO, and does not bind Canada legally or otherwise, to enter into any agreement or to accept any suggestions from organizations. Canada reserves the right to accept or reject any or all responses submitted.

There will be no short listing of firms for purposes of undertaking any future work, or the issuance of a standing offer, as a result of this request. Similarly, participation in this Request for Information is not a condition or prerequisite for participation in any subsequent RFP and, or RFSO.

Companies responding to this Request for Information should identify any submitted information that is to be considered as either company confidential or proprietary. Companies responding to this Request for Information should note that DRDC may use contracted resources to assist with project development. Such contracted resources may be required to access responses submitted by vendors while assisting in project development. Any contracted resources will be required to sign non-disclosure agreements and their respective companies excluded from bidding on any future bid solicitation for a Space Common Operating Picture for use in the Canadian Space Operations Centre in the future.

10.0 LANGUAGE OF WORK

Responses are to be provided in English or French. These documents may be translated into English or French by the Government of Canada.

11.0 SECURITY

No security classification identified for this RFI.

12.0 ENQUIRIES

13.0 CLOSING DATE

14.0 RESPONSE EVALUATION AND INDUSRTY FOLLOW-UP

15.0 PROCUREMENT AUTHORITY