Innovative Solutions Canada

CHALLENGE NAME: ROBUST "BEYOND LINE OF SIGHT" (BLOS) COMMUNICATIONS IN SATELLITE-DENIED ENVIRONMENTS

CHALLENGE SUMMARY STATEMENT: Provide robust approaches to over-the-horizon/BLOS communications in satellite-denied environments.

CHALLENGE NUMBER: *To be determined*

CHALLENGE CLOSING DATE AND TIME: *To be determined*

CHALLENGE SPONSOR: Department of National Defence (DND)

MAXIMUM CONTRACT VALUE:

Multiple contracts could result from this Challenge.

The maximum funding available for any Phase 1 Contract resulting from this Challenge is $150,000.00 CAD (plus tax) including shipping, travel and living expenses, as applicable.

The maximum funding available for any Phase 2 Contract resulting from this Challenge is $1,000,000.00 CAD (plus tax) including shipping, travel and living expenses, as applicable. Only eligible businesses that have completed Phase 1 could be considered for Phase 2.

This disclosure is made in good faith and does not commit Canada to contract for the total approximate funding.

TRAVEL: No travel anticipated.

PROBLEM STATEMENT

The Canadian Armed Forces uses both High Frequency (HF) and satellite communications (SATCOM) systems for beyond line of sight (BLOS) communications. While the HF band supports global communications, it is subject to widely varying performance due to interference, atmospheric conditions and, in times of conflict, jamming. Satellite communications can also be subject to denial jamming.

The challenge is to consider new approaches to providing robust, over-the-horizon/BLOS communications in satellite-denied environments, either by enhancing the reliability of HF and/or SATCOM approaches, or by exploring new technologies and techniques. While satellite communications have become (almost) ubiquitous, the satellites themselves are vulnerable to attack and therefore represent a potential point of failure. Canada, therefore, continues to need a robust backup for satellite communications under jamming in order to ensure strategic and operational command and control.

DESIRED OUTCOMES & CONSIDERATIONS

DND needs either more resilient/robust satellite communications or a robust backup for satellite communications (instead of using High Frequency (HF) systems) for beyond line of sight (BLOS) communications under various environmental and geographical conditions including in urban setting and remote locations.

Bidders may consider other concepts such as tropospheric scattering, meteor trails and deploying orbiting High Altitude Long Endurance Unmanned Aerial Vehicles (HALE UAVs) as communications relays and

propose alternative ways for over-the-horizon/BLOS communications to HF. Bidders may also consider concepts for more robust/resilience BLOS satellite communications under jamming conditions.

BACKGROUND & CONTEXT

Background & Current efforts/technologies being explored:

Communications in satellite-denied environments remains a challenge in various settings; In order to mitigate the risk and challenge, efforts require either enhancing the reliability of HF approaches, or exploring new technologies and techniques to ensure uninterrupted command and control functions.

Solutions to communication systems in satellite denied environments may also find market in non-defence sectors as well as in international markets.

ACQUISITION STRATEGY

It is anticipated that a CFP will be posted on the Buy and Sell website in January 2018. The CFP will describe the proposal submission instructions and the evaluation procedures and criteria against which proposals will be assessed.