Australian Government

Department of Defence
Defence Science and Technology Group

Information Warfare Innovation Community
Call for expressions of interest

Information Pack

Information Warfare Innovation Community

The Defence Science and Technology Group (DSTG) is inviting individuals and groups from industry, academia, Defence and national security agencies to submit expressions of interest in joining an Information Warfare Innovation Community.

This highly specialised community will support the development, implementation and quality assurance of the research and innovation activities of the Information Warfare STaR Shot, a large-scale multi-party, multi-disciplinary research initiative aimed at enabling the Australian Defence Force to operate in contested information environments.

Membership of the innovation community will provide access to future calls for proposals to address the innovation, science and technology requirements of the Information Warfare STaR Shot.

Introduction

As our lives become increasingly dependent on information and information environments, timely access to accurate information is becoming more and more critical. This trend extends beyond individuals to the strategic contest between nations, with a number of well publicised examples of nations seeking to influence other nations through the use of misinformation. Similarly, a number of nations have developed strategic cyber capabilities that are exercised in their national interest, often below the threshold for conventional warfare.

Information and information environments are also critical to many military systems. The Department of Defence is seeking to develop specific capabilities to defend and protect its own information environments, while seeking to degrade and disrupt those of its potential opponents.
In 2020, Defence established the Information and Cyber capability domain as part of the Defence Strategic Update 2020 (DSU), committing a significant investment over the decade to strengthen Defence's Information and Cyber domain capabilities.

The Information Warfare STaR Shot seeks to support the development of new Information and Cyber domain capabilities by conducting strategic research on information warfare, facilitating information warfare innovation, and supporting the maturation and transition of information warfare capabilities by Australian industry.

Background

The critical reliance on information environments will mean that information environments will be actively contested. Actors, ranging from criminals to nation states, will seek to exploit these information environments for their own benefit, often below the threshold for military conflict through grey-zone operations. This will include Defence information environments and will mean that Defence will need information warfare capabilities to defend and protect its own information environments, as well as capabilities to impact and effect opponent's information environments.

Information warfare is the integration and coordination of information operations, cyber warfare and electronic warfare into a single warfighting capability. This enables new warfighting capabilities that will be critical for future Defence operations. Automation and artificial intelligence will also enable information warfare capabilities to be scaled asymmetrically.

The Information Warfare STaR Shot seeks to develop new information warfare capabilities to enable Defence to operate in contested information environments. It will do this through a balanced program, leveraging strategic research and innovation from across the Defence innovation, science and technology enterprise.

Call for Partners

Through partnerships with Australian universities, research organisations and industry, Defence is establishing an Information Warfare Innovation Community to assist with the ongoing development, implementation and quality assurance of the research and innovation activities under the Information Warfare STaR Shot.

DSTG will engage with partners through a multi-party agreement that will facilitate access to more detailed information relating to the Information Warfare STaR Shot.

It is expected that innovation community members will have strong capabilities and existing research or innovation programs in one or more of the following themes:

- **_Human Environment_**: Information and influence concepts, algorithms and technologies for sensing, understanding and effecting the human elements of information environments. Includes mis/disinformation, information operations (IO), influence operations, psychological operations (PSYOPS) etc.

- **_Information Environment_**: Cyberwarfare concepts algorithms and technologies for sensing, understanding and directly effecting information environments. Includes cybersecurity, defensive cyber operations (DCO), offensive cyber operations (OCO), cyber vulnerability analysis, adversarial machine learning, network knowledge etc.

- **_Physical Environment_**: Electromagnetic Manoeuvre Warfare concepts, algorithms, technologies and techniques for sensing, understanding and effecting of the physical elements of information environments. Includes electronic surveillance (ES), electronic attack (EA), electronic protection (EP), signals intelligence (SIGINT), electromagnetic spectrum operations (EMSO) etc.

- **_Information Warfare Command & Control_**: Concepts, algorithms, technologies and demonstrations for command and control of distributed information warfare (IW) sensors and effectors. Includes IW theory and frameworks, real-time distributed command and control (C2) of distributed IW elements, C2 for synchronised and coordinated IW effects, visualisation of the IW battlespace etc.

- **_Architectures & DEVOPS_**: Architectures and frameworks for implementation of future IW capabilities, along with flexible and dynamic development processes to provide evergreen IW capabilities for Defence. Includes open architectures, standards and frameworks for ISR and IW, DEVSECOPS etc.

- **_Information Warfare Experimentation_**: Models, tools and approaches for IW experimentation, along with hosting the IW experimentation campaigns. Includes IW model engine development, IW experimentation architectures and approaches, IW scenario and vignette development, IW operating concept development etc.

Membership of the Information Warfare Innovation Community is open to defence and national security agencies, academic institutions, research organisations and corporations.

Members will need to identify all participants in their expression-of-interest for security purposes.

Partnering Opportunities

This call for Expressions of Interest is a unique opportunity for individual or groups to partner with other interested parties to develop an Information Warfare Innovation Community in support of the Information Warfare STaR Shot.

DSTG will:

- Commit to a multi-party collaborative agreement where the parties are named as part of the Information Warfare Innovation Community;

- Provide support to enable all community participants to obtain baseline security clearances;

- Provide further and regular information about the goals and objects of the Information Warfare STaR Shot

- Provide access to data, information and other materials, to be used as inputs to develop outcomes sought by the Information Warfare STaR Shot; and

- Provide guidance and supervision where appropriate.

Engagement Model:

DSTG will engage through multi-party agreements under the Defence Science Partnering Deed for universities, or via the appropriate MOU instrument where the partners are from research organisations or industry.

Essential Requirements

The following requirements are deemed essential for innovation community partners:

- Ability to achieve a baseline security clearance for all members; and

- Eligibility for Defence Industry Security Program (DISP) membership;

- Demonstrated capability and experience in one or more of the themes described above; and

- Capacity to work with Defence and other partners to enable Defence to operate in contested information environments.

Desirable Requirements

DSTG is interested in fostering and building enduring relationships with suitable partners. As such, the following will be considered desirable when assessing Expression of Interest submissions:

- Multi-party submissions including stakeholders from across the innovation, science and technology system;

- Genuine interest in developing and growing sovereign research capabilities within their organisation, and promoting an ongoing partnership with Defence; and

- Support from their organisation(s) to undertake activities supporting the innovation community.

How to Apply:

DSTG is inviting expressions of interest from Australian universities, research organisations and industry, including small-to-medium enterprises.

Submissions should be no longer than four (4) pages outlining all relevant capabilities, experience and interest in the program addressing the following:

- A succinct description of relevant innovation, science and technology capabilities identifying which theme(s) they relate to;

- A list of proposed participants, detailing name, nationality, country of birth and any security clearances;

- A succinct description of DISP membership status;

- A succinct description of relevant experience delivering innovation, science and technology relating to information warfare or information related capabilities for Defence or National Security;

- A succinct description of existing linkages to relevant third-party's, particularly overseas universities, research organisations and industry partners; and

- A succinct description of the capacity to establish and maintain membership of the community of interest.

Submissions should be in pdf format and sent via email to STaRShot_IW@dst.defence.gov.au by 31 October 2021.

Submissions will be assessed by a panel from DSTG. Selected submissions will then be invited for discussions to further develop the innovation community.

All submissions will be handled in-confidence. Feedback will be provided to unsuccessful applicants upon request.

DSTG Contact:

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