Headquarters Supreme Allied Commander Transformation Norfolk Virginia

REQUEST FOR INNOVATIVE PARTICIPATION (RFIP)

RFIP-ACT-SACT-20-18

This document contains a Request for Innovative Participation (RFIP) Call for Industry and Academia collaboration regarding the Innovation Challenge 2020/Spring (IC-20/Spring) calling for solutions (applications, systems, tools, concepts etc.) that can support solution development for NATO. Industry and Academia wishing to respond to this RFIP should read this document carefully and follow the guidance for responding.

General Information	
Request For Information No.	RFIP-ACT-SACT-20-18
Project Title	Innovation Challenge 2020/Spring: Solutions to enable leaders, commanders, small specialized tactical units and information systems to identify false information and mitigate the effects of this information on generating a true common operating picture, predicting behaviors, and supporting decision making.
Due date for submission of requested information	**05 May 2020**
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SECTION I - INTRODUCTION

1.1 **Summary**. HQ SACT is issuing this Request for Innovative Participation (RFIP) announcement in order to facilitate collaboration between NATO HQ SACT Innovation Hub and industry and academia regarding solutions[1]. The purpose of this RFIP is to request representatives from industry and academia to submit solutions (either existing and/or under development) to the scenario presented at Annex I (Information and Visualization) to participate in NATO Innovation Challenge 2020/Spring. Submissions must conform to this RFIP.

A Selection Committee composed of representatives from NATO HQ SACT and advisors from the IC-20/Spring Partners[2] will select up to 10 solutions amongst the responses submitted by industry, academia, or by individuals (participating under separate Terms of Participation). The selected solutions will be invited to participate in the IC-20/Spring *Pitch Day* on June 17, 2020, in Rotterdam, Netherlands. Participation in the *Pitch Day* can be onsite or online. An Advisory Panel will be composed of representatives from NATO HQ SACT, the IC-20/Spring Partners and other relevant experts invited by NATO HQ SACT. The Advisory Panel will assist in assessing which solution(s) respond best to the scenario. The final selection of the IC-20/Spring winner will be performed by a Board, composed entirely by representatives of HQ SACT.

The nature of this event will be *discovery* only and will not be intended to solicit contracts. However, relevant solutions could potentially support development of future concepts, doctrine, STANAGs, user requirements, capability development, etc.

1.2 **Dates.** The events and timelines of IC-20/Spring is described in Section III. It will take place between March and 17 June 2020, with the IC-20/Spring *Pitch Day* taking place in Rotterdam, Netherlands on 17 June 2020. Exact location will be posted on the Innovation Challenge webpage.

1.3 **Disclaimer**. This is a Request for Innovative Participation (RFIP) only, and in no way constitutes a current Request for Proposal (RFP) or a commitment to issue a future RFP.

HQ SACT has not made a commitment to procure any of the products/solutions described herein, and release of this RFIP shall not be construed as such a

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[1] In this RFIP, the term "solutions" refers to applications, tools, systems concepts or devices.
[2] Old Dominion University (USA), the Dutch Ministry of Defense (Netherlands), NATO C2 COE (Utrecht, Netherlands.

commitment, nor as authorization to incur cost for which reimbursement will be required or sought. Further, respondents are advised that HQ SACT will not pay for any information or administrative costs incurred in *responding* to this RFIP, nor will HQ SACT pay costs associated with participating in the IC-20/Spring. The costs for responding to this RFIP and participating in the IC-20/Spring shall be borne solely by the responding party. Not responding to this RFIP does not preclude participation in any subsequent RFP if issued in the future.

SECTION II –BACKGROUND

2.1   **ACT Framework for collaborative Interaction (FFCI).**

2.1.1 HQ SACT has implemented a Framework for Collaborative Interaction (FFCI) to increase opportunities for industry and academia to contribute to ACT capability development efforts through collaborative work. Such collaboration enables HQ SACT, and NATO as a whole, to benefit from industry/academia models, advice, capabilities and experience in the course of this work. In addition to the benefits ACT gains from such projects, this collaborative effort will provide industry/academia with an improved understanding of NATO's capability requirements and associated issues and development challenges to be addressed by ACT. Potential collaborative projects are on specific topics that are of mutual interest to both parties but shall be restricted to collaborations in non-procurement areas. Several mechanisms have been already developed to support the initiation of collaborative projects between industry/academia and ACT ranging from informal information exchanges, workshops and studies, to more extensive collaboration on research and experimentation.

More detailed information on the ACT FFCI initiative can be found on the ACT web site being developed to support FFCI projects at http://www.act.nato.int/ffci.

2.1.4 HQ SACT has since 2017 conducted Innovation Challenges; these are informative and exploratory events focused mainly at the application of new technologies. The collaborative interaction sought for the IC-20/Spring is focused on presenting and demonstrating solutions to enable leaders, commanders, small specialized tactical units and information systems to identify false information and mitigate the effects of this information on generating a true common operating picture, predicting behaviors, and supporting decision making (see scenarios at Annex I). RFIP respondents should be willing to share their knowledge, expertise, and products/solutions with NATO and

national representatives participating in the IC-20/Spring.

2.1.5 IC-20/Spring winner for HQ SACT will be selected by a Board of HQ SACT representatives and announced as part of the *Pitch Day* program.

All information provided in response (abstracts, supporting materials, and, if selected for *Pitch Day*, in the presentations) must be releasable to the public. While the abstracts only will be provided in the public domain if selected for presentation at IC-20/Spring *Pitch Day*, both the Selection Committee and the Advisory Panel will be comprised of representatives from NATO HQ SACT and other relevant experts invited by NATO HQ SACT.

SECTION III - DESCRIPTION OF THE IC-20/Spring

3.1 **Background.**
The HQ SACT Innovation Hub is the main organizer of the IC-20/Spring. The HQ SACT Innovation Hub also coordinates the NATO Innovation Network, federating national entities in order to leverage open innovation. For more information on the HQ SACT Innovation Hub, please visit https://innovationhub-act.org/.

3.2 **Objectives.**
The objectives of this RFIP is to invite eligible industry and academia to participate in IC-20/Spring through submission of abstracts in response to the scenario at Annex I, identifying and exploring existing and emerging technologies that could address current and foreseeable challenges to an effective and efficient approach.

3.3 **Planned activities**. The IC-20/Spring will consist of:

a. Initial Selection Phase: The selection will be announced 23 days prior to the *Pitch Day,* allowing further development of the presentation Finalists will be contacted directly by email by the Innovation Hub team and the announcement will be made on the IC-20/Spring webpage The selected submissions will be invited to be presented live online or onsite on the *Pitch Day*. Any cost associated with presenting online or onsite remains the sole responsibility of the industry/academia providing the submission.

b. Final selection phase: On the *Pitch Day*, the winner of the IC-20/Spring will be selected by a Board of HQ SACT representatives and announced as part of the *Pitch Day* program.

3.4 **Expected input from industry/academia.** See below in Section IV.

3.5 **Expected benefits to industry.** Through this collaboration, HQ SACT offers industry / academia an opportunity to gain awareness about the particularities of the innovation challenges in NATO and Nations. It will be an opportunity to engage with HQ SACT Innovation Hub and other participants within a framework of a community of interest focused on the development of innovative solutions based on new technologies in support of the NATO Innovation Process.

SECTION IV - REQUESTED INFORMATION

4.1 **Intent**. The intent of this RFIP is to call for formal collaboration with industry and academia in order to present solutions based on new technologies that can support the improvement of NATO Innovation process. These solutions should be applicable in a federated information environment and should be interoperable by design. Additionally, they should be intuitive, requiring none or very limited training at the end-user level. Solutions are sought at different levels of development, from the "advanced concept development stage" through "customizable applications" available "commercial off-the-shelf". Solutions may address some of the challenges described in the scenario presented in Annex 1, associated to one or more of the following *areas of interest*: ability for leaders, commanders, small specialized tactical units and information systems to identify false information and mitigate the effects of this information on generating a true common operating picture, predicting behaviors, and supporting decision making. The inherent discovery nature of the IC-20/Spring allows also for novel approaches to these challenges.

4.2 **Responses to the RFIP**.
In response to the RFIP, please submit a three page abstract (4500 characters maximum) describing the solution idea. Based on this submission, an IC-20/Spring Selection Committee will select and invite up to 10 abstracts to be presented at the Innovation Challenge *Pitch Day*.

The response to this RFIP should be submitted through the webform at https://innovationhub-act.org/eform/submit/nato-innovation-challenge-2020-1. It must contain:

1) The name of the participant (Industry/academia)
2) The name of the proposed solution and which area(s) of interest it addresses;

3) Name(s) of participant's representative(s) (new representatives cannot be appointed after pre-selection)

The abstract can include:

- up to 4500 characters max text document
- max 5 graphics, pictures or slides
- max 4 min video/audio file

Note that all information provided in response to this RFIP has to be releasable to the public.

4.3 **Evaluation of Solutions and Selection Process**. A Selection Committee will be convened to analyze and evaluate the responses to the RFIP and select which submissions will be presented/demonstrated at IC-20/Spring. The Selection Committee will assess each response according to the following criteria:

4.3.1 *Eligibility*: The response to this RFIP should reflect a solution that addresses at least one of the areas of interest presented at paragraph 4.1.

Submissions will specifically be scored against:

- o **Usefulness**: Understood as the potential impact of proposed solution on challenge topic.

- o **Innovativeness**: Understood as if it is a genuinely new idea or an already existing solution adapted for this Challenge.

- o **Feasibility**: Understood as if the solution is cost-effective and easy to develop and implement.

4.3.2 *Priority*: the Selection Committee retains the right to prioritize the answers to RFIP based on the relevance and diversity of the solutions, on the proposed *demonstration* method, and the complexity of the challenges addressed. Additionally, ensuring a balanced representation of both industry and academia will be part of the prioritization process.

4.3.3 *Status*: Only submissions by industry and academia headquartered or located in NATO member countries will be considered for IC-20/Spring.

4.4 Terms applicable to this RFIP: The participating industry and academia agree that the IC-20/Spring, without any limitation or further compensation, may use the participant's name as well as voice and/or likeness of its representative(s) in any and all media for the purpose of advertising and promoting the IC-20/Spring, HQ SACT, and any

associated programs. Further, the participant grants HQ SACT and the IC-20/Spring the right to take photographs and videos of the submission in connection with the challenge and grant the right to the IC-20/Spring to use, and to publish the photographs and videos with or without the participant's name and for any lawful purpose, including but not limited to, publicity, illustration, advertising, and internet and social media content. Additionally, the participants agree that the IC-20/Spring and thus HQ SACT may demonstrate the operation and functionality of the submission (but may not modify or publicize the source code) in connection with advertising and promoting the IC-20/Spring and subsequent events organized by HQ SACT.

a. The participating industry and academia represent and warrant that there are no contractual or other obligations that would:

    (i)   prevent the participant from granting the right of use provided here and/or

    (ii)   prevent the participant from claiming Intellectual Property ownership rights in materials or inventions created by the participant and incorporated into the submission.

b. Representation and Warranties: The participating industry and academia represent and warrant that:

    (i)   the participant is the original author of the contributions to the submission;

    (ii)   to the participant's knowledge, the submission will not infringe on any third party's copyright, patent, trademark, trade secret, right of publicity or property or any other right;

    (iii) the submission is not the subject of any actual or threatened litigation or claim;

    (iv) the submission will not be obscene, offensive, libelous, pornographic, threatening, abusive, or otherwise objectionable; and

    (v)   the submission will not contain any content that is illegal, would constitute or encourage a criminal offense, or would otherwise give rise to liability or violate any law.

c. The participating industry and academia agrees to grant to the IC-20/Spring (and thus HQ SACT), a non-exclusive, use of the submission as necessary to conduct the IC-20/Spring and for internal evaluation purposes by HQ SACT:

    (i)   in any Intellectual Property incorporated into the submission;

(ii)   in Intellectual Property that is needed to operate or use the submission;

(iii)   in Intellectual Property covering other materials or inventions that are incorporated into the submission, and/or

(iv)   in Intellectual Property that is needed to operate or use the submission.

d. Further, participants acknowledge and agree that the submission is submitted on a non-confidential basis, and that the IC-20/Spring (and thus HQ SACT) shall have no obligation to prevent the disclosure or otherwise treat as confidential such submission. Also, to the extent that the submission includes publication of information or content on innovationhub-act.org, participating industry and academia consent to terms governing utilization of any information or content published on innovationhub-act.org.

e. By responding to this RFIP and participating in the IC-20/Spring the participating industry and academia acknowledge and agree that the IC-20/Spring may receive many entries and submissions in connection with this and/or other participants, and that such entries and submissions may be similar or identical in theme, idea, format, or other respects to the submission. By responding to this RFIP the participating industry and academia waive any and all past, present or future claims against HQ SACT and the IC-20/Spring relating to such similarities, or asserting that any compensation is due in connection with the submission.

f. Limitation of Liability: In no event shall the HQ SACT or the IC-20/Spring be liable for incidental, exemplary or punitive damages arising out of or in connection with the IC-20/Spring, industry and academia participation, or the submission. If a participant has a dispute with any participant in the IC-20/Spring or any other third party, the participating industry and academia release HQ SACT and the IC-20/Spring from any and all claims, demands and damages, (actual and consequential) of every kind and nature arising out of or in any way connected with such disputes.

g. Release and Indemnification: By responding to this RFIP and participating in the IC-20/Spring, industry and academia agree, on behalf of that participant and the heirs, executors and administrators, to release and hold harmless the IC-20/Spring (and thus HQ SACT) from any claim, liability, damage, litigation, illness, injury or death that may occur, directly or indirectly, whether caused by negligence or not, from participating in the IC-20/Spring. This includes any entry (submission)

submitted by the participating industry and academia.

- 4.5 **Communication and Follow-on**. The answers to RFIP should be submitted through the Innovation Hub webform at https://innovationhub-act.org/eform/submit/nato-innovation-challenge-2020-1. Post-submission, RFIP respondents may be contacted to provide additional information on their proposals/response. The results of the selection process will be posted on the Innovation Hub webpage: https://innovationhub-act.org/nato-innovation-challenge

4.6 **Questions**. Questions of a technical nature about this RFIP announcement shall be submitted solely to the Innovation Challenge Forum:

https://www.innovationhub-act.org/forums/innovation-challenge

Accordingly, questions shall not contain proprietary and/or classified information

4.7 **Deadline for responding to this RFIP**. May 05, 2020

4.9 **Summary**. This is an RFIP only. The purpose of this RFIP is to request both industry and academia to present and demonstrate solutions (either existing and/or under development) based on new technologies that may support the improvement of NATO Innovation Process. HQ SACT has not made a commitment to procure any of the products/solutions described herein, and release of this RFIP shall not be construed as such a commitment, nor as authorization to incur cost for which reimbursement will be required or sought. It is again reemphasized that this document is a RFIP, and not a RFP of any kind.

For more information on the Innovation Challenge IC-20/Spring, please visit https://innovationhub-act.org/nato-innovation-challenge

ANNEX I – SCENARIO AND QUESTIONS

Background

The world is filled with competing interests. All of them try to change the thinking and behavior of specific groups, subgroups or individuals to achieve their own missions. A beverage company tries to convince consumers to buy their brand of soda. A charity tries to convince people to become actively involved in a social problem. Even a military intervention team must try to convince local populations that their actions are in their best interests.

Regardless of context – corporate, social, or military - in order to achieve your goals, you must be aware of both the physical and information spaces in which you operate. Therefore, it is important to be aware of your surroundings (i.e. What is happening? Who is doing it? What information is out there? Where is it coming from? Who is it coming from? What are their motives?). You must develop an understanding of how situations will develop in your surroundings (i.e. What will happen next?). You need a mechanism to choose the optimal course of action (i.e. What will I have to do to achieve my goal?).

As situations get more complex and bigger spaces are considered, it becomes more difficult to monitor the physical and informational environments. Naturally, this makes it harder to anticipate developments and to choose optimal strategies for achieving your mission.

Achieving your goals (e.g. selling your product, or conveying your idea or opinion) becomes even more difficult when competitors or adversaries are considered. These entities sometimes have goals which conflict with yours (e.g. selling their product, or conveying their idea or opinion). For instance, another brand of soda might claim their product is superior and that your product is flawed (e.g. unhealthy, dangerous, tasteless). Likewise, a deployed military mission might experience difficulty in finding acceptance in a local population when a subgroup of that population is actively discrediting them.

Today's technologies present increased capabilities to manipulate information, cloak activities, and cloud understanding of situations. This makes it even more difficult to understand what is going on, anticipate what will happen, and decide on the optimal courses of action. These things can severely impact the well-being of a population, the prosperity of a company, or the success of a mission.

Next, will follow a fictional military scenario which illustrates the complexity of monitoring surroundings, anticipating developments and choosing optimal strategies to obtain your goals, in a large, complex environment with several conflicting interests. Similar scenarios could be developed for businesses competing for market shares, or organizations seeking to promote their vision.

Scenario

In this fictional scenario, population levels of a random continent have risen rapidly and drastically. The social infrastructure in the countries of this continent were not designed to accommodate this growth, and emergency shelters were constructed. These emergency shelters were placed wherever space was available and are reluctantly accepted by the local communities. Within the shelters people of different ethnicities and cultures are tightly packed together, leading to social tension within the shelters. To make matters worse, the continent has been struck by a severe draught, causing a shortage of both food and water. Because of these shortages, small riots have broken out throughout the area, both inside and outside of the shelters, fighting for more of these commodities.

Despite the efforts made by individual governments to maintain the social order in their respective countries, social tensions continue to rise as time goes on. The tensions have created a favorable environment for an anarchistic insurgent group to form and rise to power. In the previous weeks, these armed insurgents have led a carefully planned campaign, appropriating as much of the scarce commodities as they can. Furthermore, the insurgents are targeting valuable objects (e.g. energy plants, water plants, etc.) to disrupt the social order even more. Besides fighting in the physical landscape, the insurgents are also working the social landscape by redistributing the commodities they have gathered. These actions have earned the insurgents the support of the locals, leading the locals to both actively and passively support the insurgent's cause.

Unfortunately, the insurgents are also extremely active in the informational landscape, continuously advocating their cause on the internet, and feeding true and false information into various information systems to disrupt civilian life. They are also generating both true and false information concerning their location and plans.

As the peace and stability in this continent is jeopardized, the North Atlantic Council decides to deploy the enhanced NATO Response Force (eNRF) in response to a request (mandate) from the United Nations Security Council, reacting to the increased concerns of the governments in said continent and their request for international support. In order to be able to respond to its mandate, the eNRF quickly needs to establish and maintain an overview of the area of operations. Once this operating picture is established, eNRF supporting data systems need to acquire additional information to aid in predicting behaviors of both the population and the insurgent groups. Finally, the system needs to aid commanders in their decision-making by examining courses of action and making recommendations on how to proceed.

The Challenge

This Innovation Challenge is seeking innovative solutions that will enable leaders, commanders, small specialized tactical units and information systems to identify false information and mitigate the effects of this information on generating a true common operating picture, predicting behaviors, and supporting decision making. The solutions should consider one or multiple of the following issues:

Commanding Officer Dashboard

Commanders need to monitor and understand the environment of a given space of operations (i.e. continent, country, city, and neighborhood). Being able to predict how situations in the environment will develop, facilitates making decisions which are beneficial to their people and ultimately, to reaching their goal. Therefore, we are looking for solutions that will:

- Provide a way to gather, sort (e.g. on relevancy, urgency etc.) and discriminate (e.g. real from fake) information (open source and private) concerning the space of operations. For this challenge, it is important that a large space is considered (big data). The gathered information needs to be presented in a concise and intuitive way, enabling efficient navigation through the information.
- Provide a way to autonomously discriminate between true and false (or trustworthy and untrustworthy) information concerning a specific topic. Identifying false or untrustworthy information given a specific topic will enable a commander to retain a clear overview of the surroundings and facilitate the commander in stopping the false information from spreading.

- Provide a way to predict (possible) developments in the space of operations. Using the gathered information to detect trends and predict developments aids the commander in anticipating the (near) future. Show the effects of the false information on prediction so that commanders may see what courses of action the adversary may be trying to get the commander to select.
- Provide a way to select the optimal course of action solving a problem or situation in the space of operations. Assume that the possible courses of action are defined.

Deployment

Alternatively, sometimes a small team of specialist needs to be deployed to solve a specific problem. The problems that these teams solve often require them to be fast-paced and highly focused, whilst maintaining a high level of adaptability. Therefore, we are looking for solutions that will:

- Provide a way to actively push information to a small team in a non-distracting way. Information that might be pushed is open source information, intelligence about own and adversary troops, UAS/drone feeds and recent developments. Information should be pushed without risking the team getting detected.