

HQ Supreme Allied Commander Transformation
RFIP-ACT-SACT-25-48

Headquarters Supreme Allied Commander Transformation Norfolk Virginia



REQUEST FOR INNOVATIVE PARTICIPATION (RFIP) RFIP-ACT-SACT-25-48

This document contains a Request for Innovative Participation (RFIP) Call for Industry and Academia collaboration regarding the Innovation Challenge 2025/June (IC-25/June) 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 25-48
Project Title	Innovation Challenge 2025/June: Countering Fiber-Optic-Controlled FPV Drones
Deadline for submission	30 May 2025, 5PM Eastern Time (Norfolk, VA)
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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 the NATO HQ SACT Innovation Branch and industry and/or academia regarding solutions¹. 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 within **Annex I** to participate in the NATO Innovation Challenge 2025/June (IC-25/June). All submissions must conform to this RFIP.

A Selection Committee composed of representatives from NATO HQ SACT, advisors from the IC-25/June Partners² and other relevant experts invited by NATO HQ SACT will select up to **10 solutions** amongst the responses submitted by industry and/or academia. The selected solutions will participate in the IC-25/June *Pitch Day* projected to be June 20, 2025. Participation in the *Pitch Day* will be either on-site, in TALLIN (ESTONIA), an/or online. An Advisory Panel composed of representatives from NATO HQ SACT, the IC-25/June partners and other relevant experts invited by NATO HQ SACT will assess which solution(s) best responds the scenario presented in **Annex I**. The final selection of the IC-25/June winners will be done by a board of representatives from HQ SACT, advisors out the IC-25/June Partners and other relevant experts invited by NATO HQ SACT.

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

- 12 **Dates.** The event and timelines of IC-25/June is described in Section III. It will take place between 30 April and 20 June 2025, with the IC-25/June *Pitch Day* taking place online and on-site on 20 June 2025. Details will be posted on the Innovation Challenge (<https://innovationhub-act.org/innovation-challenges/>).
- 1.3 **Disclaimer.** This is a Request for Innovative Participation (RFIP) **ONLY**. In no way does the RFIP constitute a current Request for Proposal (RFP) or a commitment to issue a future RFP. HQ SACT has not committed nor intends to commit to procure any product(s)/solution(s) described herein, and the release of this RFIP shall not be construed as a commitment, nor an authorization to incur cost for which reimbursement will be required or sought after. Further, respondents are advised that HQ SACT will not pay for any information or administrative costs incurred in *responding* to this RFIP. HQ SACT will not pay any costs associated with participating in the IC-25/June. The costs for responding to this RFIP and participating in the IC25/June 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 HQ SACT 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 HQ SACT capability development efforts through collaborative work. These collaborations enable HQ SACT, and NATO to benefit from industry/academia models, advice, capabilities and experience in the course of work. In addition to the benefits HQ SACT gains from such projects, the collaborative effort will provide industry/academia with an improved

¹ In this RFIP, the term “solutions” refers to applications, tools, systems concepts or devices.

² Center of Excellence (COEs), experts JATEC and experts from Ukrain.

understanding of developmental challenges to be addressed by HQ SACT, and NATO's capability requirements and the associated issues. 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 HQ SACT ranging from informal information exchanges, workshops, and studies to more extensive collaboration on research and experimentation.

- 2.1.2 Since 2017 HQ SACT has conducted Innovation Challenges; these are informative and exploratory events focused mainly on the application of new technologies. The collaborative interaction sought for the IC-25/June is focused on industry/academia's RFIP responses and willingness to share knowledge, expertise, and products/solutions with NATO and national representatives participating (see scenarios at Annex I).

SECTION III - DESCRIPTION OF THE IC-25/June

3.1 Background.

The HQ SACT Innovation Hub is the main organizer of the IC-25/June. The HQ SACT Innovation Hub also coordinates the NATO Innovation Network, federating national entities in order to leverage open innovation.

3.2 Planned activities. The IC-25/June will consist of:

- a. Initial Selection Phase: The selection will be announced 5 June 2025. Finalists will be contacted directly via email by the project coordinator in charge of the challenge, and the announcement will be made on the IC-25/June Webpage (<https://innovationhub-act.org/innovation-challenges/>). The selected submissions will be invited to be presented live online on the *Pitch Day*. Any cost associated with presenting online remains the sole responsibility of the industry/academia providing the submission. If there would be not enough submissions by **30 May 2025, 5PM Eastern Time (Norfolk, VA)** (the deadline for submission), HQ SACT reserves the right to cancel the Innovation Challenge.
- b. Final selection phase: On the *Pitch Day*, the winners of the IC-25/June will be selected by a Board of HQ SACT representatives and other relevant experts invited by NATO HQ SACT and announced as part of the *Pitch Day* program. Any cost associated with presenting online or in person remains the sole responsibility of the industry/academia providing the presentation.

All information provided in response (abstracts, supporting materials, and, if selected for *Pitch Day*, in the presentations) will be releasable to the public. Only abstract submissions selected for presentation at IC-25/June *Pitch Day* will be showcased in the public domain.

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

3.4 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 partner 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.

3.5 Monetary Awards

- 3.6.1 No monetary awards are planned for this event.

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 the 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 on commercial off-the-shelf. Existing or potential solutions that can DETECT, INTERCEPT, or NEUTRALIZE a Fiber Optic Drone are particularly interesting. Solutions that involve cognitive domains or related concepts in the cognitive domain are also welcomed. Solutions may address some of the challenges described in the scenario presented in Annex I, associated to one or more of the following **areas of interest**:

- a. Detect
- b. Track
- c. Neutralize

The inherent discovery nature of the IC-25/June allows for novel approaches to these challenges. For solutions of a potential or conceptual nature, time is a constraint.

4.2 Responses to the RFIP.

In response to the RFIP, please submit an abstract (**4500 characters maximum, space not included**) describing the solution idea and answering the criteria. Based on this submission and the eventual file attached, an IC-25/June Selection Committee will select up to **10** abstracts to be presented at the Innovation Challenge *Pitch Day*. In the event that the scores result in a tie (between the 10th and 11th place), the 11th finalist will be permitted to participate in the pitch day before the final jury. The response to this RFIP should be submitted through the webform (<https://innovationhub-act.org/innovation-challenges/>) with the following information:

- a. The name of the participant (Industry/academia)
- b. The name of the proposed solution and which area(s) of interest it addresses
- c. Name(s) of participant’s representative(s) (new representatives cannot be appointed after pre-selection)

The abstract can include:

- a. Limited to 4500 characters max text document, space not included.
- b. Max 5 graphics, pictures or slides.
- c. Eventual file attached to the submission

NOTE: 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-25/June. 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:

- Technical Feasibility and innovation
- Operational relevance for Ukrainian forces
- Scalability & ease of integration
- Cost-benefit ratio
- Modularity and flexibility of deployment.

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 (involving individual team members) headquartered, nationalized and/or located in NATO member countries will be considered for IC-25/June.

4.4 **Terms applicable to this RFIP:** The participating industry and academia agree IC-25/June may without any limitation or further compensation 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 HQ SACT Innovation Challenge, and any associated programs. Furthermore, the participant(s) grants HQ SACT and the IC-25/June the right to take photographs and videos of the submission in connection with the challenge and grants the right to HQ SACT Innovation Challenge to use and publish the photographs and videos with or without the participant's name for any lawful purpose including but not limited to publicity, illustration, advertising, and internet/social media content. Additionally, the participant(s) agree that the IC-25/June 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-25/June and subsequent events organized by HQ SACT.

a. The participating industry and academia represents and warrants 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 represents and warrants that:

- (i) the participant(s) is the original author of the submitted contributions;
- (ii) the participant(s) acknowledges, 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 agree to grant IC- 25/June (and thus HQ SACT), a non-exclusive, use of the submission as necessary to conduct the IC- 25/June 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. Furthermore, participants acknowledge and agree that the submission is submitted in a non-confidential basis. The IC- 25/June (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 (<https://innovationhub-act.org/innovation-challenges/>).
 - e. By responding to this RFIP and participating in the IC- 25/June it is constituted industry and academia acknowledge and agree that the IC- 25/June will receive many entries and submissions in connection with this RFIP. As such other participants' 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 waives any and all past, present or future claims against HQ SACT and the IC- 25/June 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- 25/June be liable for incidental, exemplary or punitive damages arising out of or in connection with the IC- 25/June, industry and academia participation, or the submission. If a participant has a dispute with any participant in the IC- 25/June or any other third party, the participating industry and academia release HQ SACT and the IC- 25/June 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- 25/June, industry and academia agree, on behalf of that participant and the heirs, executors and administrators, to release and hold harmless the IC- 25/June (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- 25/June. 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 event webform (<https://innovationhub-act.org/innovation-challenges/>). Post-submission, RFIP respondents may be contacted to provide additional information on their proposals/response.

- 4.6 **Questions.** All questions of a technical nature about this RFIP announcement shall be submitted solely to all the technical points of contact listed on page 2. Accordingly, questions shall not contain proprietary and/or classified information
- 4.7 **Deadline for responding to this RFIP. 30 May 2025, 5PM Eastern Time (Norfolk, VA)**
- 4.8 **Summary.** This is a 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 after. It is again re-emphasized that this document is a RFIP, and not a RFP of any kind.

HQ Supreme Allied Commander Transformation

RFIP-ACT-SACT-25-48

Countering Fiber-Optic-Controlled FPV Drones: Detect, Track, Neutralize

1. Background

Since late 2024, the Russian Federation has introduced a new generation of fiber-optic-controlled First Person View (FPV) drones on the battlefield. These drones are resistant to electronic warfare and jamming due to the use of fiber-optic tethered communication links. This advancement, first recorded in the Kursk region and later expanded across Donetsk and Zaporizhia, has escalated the threat level, presenting new challenges for NATO and its partners.

EW counter-UAS systems are ineffective against this type of drone. The combination of high maneuverability, jamming immunity, and low visual and radar signature makes these drones particularly dangerous to frontline troops and forward elements.

2. Challenge Statement

Participants are asked to propose innovative concepts, systems, or integrated architectures that can detect, prioritize, track, and neutralize fiber-optic-controlled FPV drones, and potentially other similar low-cost unmanned threats.

Solutions should target one or more of the following mission-critical phases:

- **Detection & Prioritization** (Field of View 360° Azimuth x 80° Elevation (preferable 100° or above) scanning using radar, optical, acoustic, thermal, or hybrid sensors)
- **Guidance & Tracking** (target speed, distance, trajectory calculation)
- **Neutralization** (kinetic and non-kinetic defeat systems)

3. Technical Requirements & Operational Parameters

Participants should take into account the following performance ranges derived from operational feedback:

a. Detection

- Target Speed: from 1 m/s (hovering) up to 100 m/s
- Detection Range: from 300 (threshold) up to 500 (objective) meters in open terrain for 7-10 inch fpv drone with weight 3-4 kg;
- Typical target Size: detection of drones as small as 300×300×100 mm
- Should operate under night conditions and adverse weather (fog, rain, etc.)

b. Engagement

- **Firing Radius:** not closer than 50 meters
- **Precision Fire Control:** automated targeting (aiming, ballistics and leading offset calculation, wind correction etc.) with real-time data feed
- **Multi-shot capability:** highly preferred
- Countermeasures may include (but not limited by):
 - Kinetic: shotgun arrays, fragmentation munitions, machineguns with high fire rate, etc
 - Directed energy: electromagnetic impulses, microwave or laser (if feasible)
 - Non-kinetic: net launchers, gas/aerosol, etc.

c. System Characteristics

- **Weight:** preferable **under 100 kg**, including platform
- **Form Factor:** mobile, modular (tripod or vehicle-mounted)
- **Power:** should include but not be limited by autonomous power supply (battery, solar, or compact generator)
- **Cost:** targeted **unit cost 50K-100K EUR** for scalable production
- **Integration:** open architecture for C2 integration; NATO STANAG compliance preferred
- **Maintenance:** should have self-diagnostic and be ready for rapid service (munition jams, barrel change, battery replacement, connection lost, etc)
- Possibility to be mounted on vehicle (Armoured vehicle, pick-up truck, minibus, etc.);
- Possibility to detect and target on the movement (up to 40-50 km/hour);
- Possibility of different safety modes (arm/disarm, alarming when target detected and identify people on the shooting trajectory and disable shooting or engage by operator).

4. Expectations for Participants

Proposals may include:

- Innovative low-cost micro-radars (e.g. mass production <15K EUR)
- Thermal or optical target recognition and designation tools
- Automated defeat systems (e.g. smart turrets, shotgun arrays, net launchers, or aerosol-based interceptors)
- Modular systems that can be scaled, localised for production, and platform-agnostic

Solutions should be:

- Deployable within 6 to 12 months
- Lightweight and compact (target system weight $\leq 100\text{kg}$)
- Effective in adverse weather conditions
- Cost-effective, with strong potential for mass production in Ukraine

5. Evaluation Criteria

Submissions will be judged based on:

- **Technical Feasibility** and innovation
- **Operational relevance** for Ukrainian forces
- **Scalability & ease of integration**
- **Cost-benefit ratio**
- **Modularity and flexibility** of deployment

6. Deliverables

Participants are expected to submit:

- A **concept paper** outlining the proposed solution
- A **technical summary** describing detection and neutralization capabilities
- A **preliminary cost estimate** and production roadmap
- Optional: prototype demo, simulation, or illustrative media

7. Timeline

- **Scenario Publication / RFIP Release:** Estimated 1 May 2025
- **Submission Deadline:** 30 May 2025
- **Pitch Day:** 20 June 2025 (Tallinn, TBC)
- **Follow-up Prototyping & Maturation Phase:** July–October 2025

8. Stakeholders

- **Lead Coordinators:** ACT Innovation Branch, JATEC
- **Operational Users:** Ukrainian MoD (Unmanned Systems Forces)
- **Supporting COEs:** JAPCC, AIR OPS, IAMD, DAT, MP, SP
- **Technical Advisors:** CIDTD, NATO Communications & Information Agency (NCIA)