



NATO SCIENCE FOR PEACE AND SECURITY

CALL FOR PROPOSALS 2023-1

The NATO Science for Peace and Security (SPS) Programme enhances civil science and technology to address emerging security challenges and their impact on international security. It connects scientists, experts and officials from NATO and partner nations to work together to address these challenges, by supporting security-relevant activities in the form of four established grant mechanisms, which are:

1. Multi-Year research and development Projects (MYP)
2. Events, in the following formats:
 - a. Advanced Research Workshops (ARW)
 - b. Advanced Training Courses (ATC)
 - c. Advanced Study Institutes (ASI)

Through the SPS Programme, NATO has demonstrated its longstanding commitment to science, innovation and practical cooperation with partners. The SPS Programme offers funding, expert advice and support to tailor-made, civil security-relevant activities that respond to NATO's strategic objectives. Participation in the SPS Programme enables experts and scientists to develop innovative solutions to today's security challenges, and to build partnerships with their peers in NATO and partner nations.

For more information on the SPS Programme and its activities, please visit the NATO SPS website at www.nato.int/science

BOUNDARIES OF THE CALL FOR PROPOSALS

This call for proposals welcomes applications for Multi-Year Projects and Events (Advanced Research Workshops, Advanced Training Courses and Advanced Study Institutes).

Proposals should focus on innovative solutions and demonstrators to tackle one or more of the topics mentioned below. They should also demonstrate a solid and long-term approach, indicating clearly the expected Technology Readiness Level to be reached, and how additional actors or programmes (e.g. industrial partners, programmes, national funding, end users, etc.) will be involved in further developing and exploiting the results of the SPS-supported activity after its conclusion. Proposals should also include plans for the demonstration of the achieved results (prototypes, simulators, demonstrators, etc.) to key stakeholders.

THEMES OF THE CALL FOR PROPOSALS

This call for proposals welcomes applications responding to any of the [SPS Programme's Key Priorities](#) outlined in the Annex.

In line with the outcomes of the [2022 NATO Summit in Madrid](#) and the [new Strategic Concept](#), proposals focusing on the topics below are especially encouraged and will be given higher priority for funding.

1. EMERGING AND DISRUPTIVE TECHNOLOGIES (EDTs)

- **Policies related to EDTs:**
 - *Policy aspects in NATO and partner nations*
 - *Ethical and legal aspects*
 - *Strategic foresight*
 - *Exchange of experiences / best practices*
- **Quantum technologies:**
 - *Quantum sensing*
 - *Quantum communications*
 - *Enablers for quantum technologies*
 - *Post-quantum cryptography*
- **Autonomy:**
 - *Autonomy in all physical domains (ground, air, space and maritime)*
 - *Counter-autonomy*
- **Artificial Intelligence (AI):**
 - *Use of AI (in particular machine learning) to: enhance energy management, environmental security or early warning systems; help mitigate the impact and risks of climate change on operations and missions; combat disinformation; strengthen cyber security*
 - *Innovative methods and frameworks for machine learning techniques, in particular federated learning, machine vision, image recognition and voice technology*
 - *Human-in-the-loop approaches*
- **Data**
 - *Enhanced solutions for mining big data and/or sparse data, originating in particular from sensors, satellites or autonomous systems*
 - *Novel approaches or frameworks for enhancing data quality, in particular of sparse data*
 - *Synthetic data generation, in areas such as cyber security, environment, climate and energy, military mobility or multi-domain operations*
 - *Environmentally sustainable data management and processing, for example exploring the optimisation of data processing, storage or transfer to reduce the energy consumption of such operations*
- **Biotechnology and human enhancement**
 - *Security applications of biotechnology*
 - *Exoskeletons*
 - *Augmented reality*

- **Novel materials and manufacturing**
 - *Security applications of 3D printing and additive manufacturing*
 - *Resistant and stealth coatings*
 - *Superconductors*
- **Technological convergence:**
 - *Research and development in multiple scientific areas through a tight integration of different technologies and disciplines with the purpose to serve a common goal (i.e. integration of engineering, biotechnologies, physical sciences, data science, computation, life sciences, social sciences, etc.).*
 - *Technologies for enabling digital trust across data, platforms and technologies*

2. CLIMATE CHANGE AND SECURITY / ENVIRONMENTAL SECURITY / ENERGY SECURITY

- *Assessment of current and future increased climate change-related bio-security risks and mitigation options*
- *Climate change interactive scenario modelling – outlook to 2050/60 +*
- *Exploitation of innovative and low carbon environmental technologies for operations*
- *Impact of increased variation in maritime salinity, acidity, and temperature on legacy and novel systems and technologies*
- *Impact of climate change on transboundary security*
- *Strategic and critical resource management*
- *Nexus between terrorism and climate change*
- *Insurgency, Terrorism and Organised Crime in a warming climate*
- *Exploitation of innovative sustainable energy systems in off grid and on grid locations*
- *Exploitation of hydrogen fuel cells*

ELIGIBILITY

Applications must be submitted using the templates and documentation published on the SPS website. Templates and manuals detailing procedures for the development and management of activities in the framework of this call for proposals are available on this page: <https://www.nato.int/cps/en/natohq/172949.htm>

Proposals should be developed jointly by scientists or experts from at least one NATO and one eligible partner nation. To be eligible for funding, applications submitted to the SPS Programme must:

- contribute towards NATO's strategic objectives and have a clear link to security;
- address at least one of the SPS Key Priorities;
- be led by a co-director who is a national of, resident and employed in a NATO member country (NATO country Co-Director), and a co-director who is a national of, resident and employed in an eligible partner nation (Partner country Co-Director) (see list below);
- be developed and implemented by co-directors affiliated with a government, academic, or other non-profit institutions. For-profit private companies are not eligible for SPS funding;
- include realistic plans and budgets;
- be developed and managed in alignment with rules and regulations outlined in the SPS handbooks. Only applications developed using the templates and manuals pertaining to this call will be taken into consideration.

Scientists or experts from the following countries are eligible to participate in activities supported by the SPS Programme:

NATO member countries: Albania, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Iceland, Italy, Latvia, Lithuania, Luxembourg, Montenegro, Netherlands, the Republic of North Macedonia, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Türkiye, United Kingdom, United States of America.

Eligible NATO partner nations: Algeria, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bosnia and Herzegovina, Colombia, Egypt, Finland (the Invitee), Georgia, Iraq, Ireland, Israel, Japan, Jordan, Kazakhstan, the Republic of Korea, Kuwait, Kyrgyz Republic, Malta, Mauritania, the Republic of Moldova, Mongolia, Morocco, New Zealand, Pakistan, Qatar, Serbia, Sweden (the Invitee), Switzerland, Tajikistan, Tunisia, Turkmenistan, Ukraine, United Arab Emirates, Uzbekistan.

DEADLINE FOR APPLICATIONS: 17 February 2023 (23:59 CET)

Applications must be submitted before the deadline to the address sps.applications@hq.nato.int. When submitting your application, please mention in the subject line “Call for Proposals 2023-1”.

All relevant enquiries prior to application submission should be addressed to sps.info@hq.nato.int.

The NATO SPS Programme is committed to diversity and inclusion, and welcomes eligible applicants from all NATO and eligible partner countries, independent of gender, age, nationality, ethnicity, religion or belief, cultural background, sexual orientation, and disability.

ANNEX

SPS KEY PRIORITIES

All activities funded by the SPS Programme must address at least one of the SPS Key Priorities. The current SPS key priorities are:

1. Facilitate mutually beneficial cooperation on issues of common interest, including international efforts to meet emerging security challenges

a. Counter-Terrorism

- i. Methods for the protection of critical infrastructure, supplies and personnel;
- ii. Human factors in the defence against terrorism;
- iii. Detection technologies against the terrorist threat of explosive devices and other illicit activities;
- iv. Risk management, best practices and technologies in response to terrorism.

b. Energy Security

- i. Innovative energy solutions for the military; battlefield energy solutions; renewable energy solutions with military applications;
- ii. Energy infrastructure security;
- iii. Maritime aspects of energy security;
- iv. Technological aspects of energy security.

c. Cyber Defence

- i. Critical infrastructure protection, including sharing of best practices, capacity building and policies;
- ii. Support in developing cyber defence capabilities, including new technologies and support to the construction of information technology infrastructure;
- iii. Cyber defence situation awareness.

d. Defence against Chemical, Biological, Radiological, and Nuclear (CBRN) Agents

- i. Methods and technology to protect against, diagnose effects of, detect, decontaminate, destruct, dispose and contain CBRN agents;
- ii. Risk management and recovery strategies and technologies;
- iii. Medical countermeasures against CBRN agents.

e. Environmental Security

- i. Security issues arising from key environmental and resource constraints, including health risks, climate change, water scarcity and increasing energy needs, which have the potential to significantly affect NATO's planning and operations;
- ii. Disaster forecasting and prevention of natural catastrophes;
- iii. Defence-related environmental issues.

2. Enhance support for NATO-led operations and missions

- i. Provision of civilian support through SPS Key Priorities;
- ii. Provision of access to information through internet connectivity as in the SILK-Afghanistan Programme;
- iii. Cultural and social aspects in military operations and missions;
- iv. Enhancing cooperation with other international actors.

3. Enhance awareness of security developments including through early warning, with a view to preventing crises

a. Security-related Advanced Technology

- i. Emerging technologies including nanotechnology, optical technology, micro satellites, metallurgy and the development of Unmanned Aerial Vehicle (UAV) platforms.

b. Border and Port Security

- i. Border and port security technology;
- ii. Cross-border communication systems and data fusion;
- iii. Expert advice and assessments of border security needs and best practices.

c. Mine and Unexploded Ordnance (UXO) Detection and Clearance

- i. Development and provision of advanced technologies, methodologies and best practices;
- ii. Solutions to counter improvised explosive devices (IED).

d. Human and Social Aspects of Security related to NATO's Strategic Objectives

4. Any project clearly linked to a threat to security not otherwise defined in these priorities may also be considered for funding under the SPS Programme

Such proposals will be examined for links to NATO's Strategic Objectives (e.g. in the field of hybrid challenges).