DEFRA

DEFENCE-RELATED RESEARCH ACTION

DEFRA

Defence-related Research Action

Call for proposals 2025
Information document including submission and evaluation guidelines and budget rules

Important dates:

Information day: 22 January 2025 (8h30 - 16h30)
Deadline Pre-proposals: 20 February 2024 (14h00)
Deadline Full proposals: 2 May 2025 (14h00)

For more information on the programme, please visit https://www.belspo.be/defra

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1. SCIENTIFIC AND TECHNOLOGICAL RESEARCH OF THE MINISTRY OF DEFENCE

1.1. CONTEXT

Scientific and technological research in the domain of security and defence is key to maintaining the Belgian Defence military and technological edge, to face current and future security challenges.

For this purpose, the Ministry of Defence (2023)[1] seeks to further develop and strengthen the links between Defence, the national research institutions and the industry by gradually increasing its R&T contribution as from 2022, with a view to reaching 2% of the total defence effort in 2030.

The setup of the Defence-related Research Action - DEFRA - fits perfectly in and contributes to the implementation of this strategic vision and general policy for Defence.

1.2. ROLE OF THE ROYAL HIGHER INSTITUTE FOR DEFENCE - RHID

As a "smart hub" and "honest broker" for scientific and technological research, the Royal Higher Institute for Defence (RHID) is responsible for the development and implementation of the Ministry of Defence's policy on scientific and technological research. Within this policy, twelve focus areas have been identified, in which research is actively supported and stimulated.

As a "smart hub", RHID aims to promote the growth of Belgian scientific and technological research in the field of defence and security, as well as to restore and strengthen the links between administrations, universities and companies at this prospect. It wishes to achieve this, among others, by promoting and facilitating the participation of Belgium and the Belgian Ministry of Defence in international, national and regional research programmes. In addition, the results of research are published annually for a wide audience and colloquia are held regularly.

As an "honest broker", RHID manages and facilitates, through the department Scientific and Technological Research of Defence (STRD), the research programme of the Ministry of Defence. Although in the past this programme was primarily reserved for Defence research institutions, collaboration with other partners, including Belgian research institutes and industry, is increasingly becoming the norm.

The Ministry of Defence wants to further develop its capabilities through collaborative research with external partners by launching annual open calls for proposals within the frame of its research programme. The current call is the fifth DEFRA call, based on eight (8) well-defined research themes and one (1) open call in which applicants can propose Defence-relevant research, both in the technology domain and human factors domain.

More information on the institute and its activities can be found on the website: https://www.defence-institute.be/en/accueil-english/

1.3. COLLABORATION WITH THE FEDERAL SCIENCE POLICY – BELSPO

For organising and managing the DEFRA calls for proposals, a long-term collaboration agreement has been signed on 13 December 2021 between the Ministry of Defence and the Federal Science Policy (BELSPO). BELSPO will manage these calls for proposals on behalf of the Ministry of Defence. For the selected projects, funding is granted by and contracts will be concluded with the Ministry of Defence.

[1] Policy Declaration Defence 2023

2. DEFENCE-RELATED RESEARCH ACTION – DEFRA

2.1. OBJECTIVES OF THE PROGRAMME

Through the funding of research projects based on scientific excellence, the DEFRA programme allows meeting the scientific knowledge needs of the Belgian Defence.

The general objectives of the programme are the following:

- Support and strengthen scientific excellence.
- Develop and realise a critical research mass on themes considered to be a priority for Belgian Defence in order to:
    - contribute to short- and long-term capacity development, in line with the Integrated Capability Development Plan (ICDP) and the Strategic Vision for Defence.
    - contribute to the culture of innovation planned within Defence, both in terms of technology and process improvement.
    - foster employment for Defence.
    - contribute, in accordance with the Defence, Industry and Research Strategy (DIRS), to the development of a competitive and credible national industrial and technological base in the field of security and defence.
- Encourage the participation of highly qualified Belgian research institutes and industry in Defence and security related research activities.
- Promote systemic, multidisciplinary/interdisciplinary and integrative approaches.
- Strengthen transdisciplinary research in order to enable potential users to make better use of the research achievements.

This is the **fifth call** in the frame of the DEFRA programme.

2.2. ELIGIBILITY CRITERIA FOR PROJECT PARTNERS

This call is open to **Belgian** public and private non-profit research institutes and private companies (both as funded and non-funded partners in the project).

From the **public research sector**, all Belgian universities, colleges of higher education, federal scientific institutions, defence research institutes and other public research institutes are eligible partners.

Private non-profit research centres must have operational and/or research activities in Belgium. They must have legal personality and their registered office in Belgium.

From the **private sector**, companies (including SMEs) complying with the following criteria are eligible partners:

- The company must have operational and/or research activities on the Belgian territory.
- The company must have a legal personality and its registered office in Belgium. The legal personality is required at the latest when signing the research contract.
- At the moment of signing the contract, the company must have fulfilled its obligations to pay its taxes and social security contributions.

Foreign partners can participate in the call as non-funded partner only. Foreign partners must be registered in a country of the European Union or in a country of the European Free Trade Association or in a country that is a member of NATO.

The project partnership must be in a **triple helix composition** where academia and industry work together to foster R&T for Defence. Specific partnership requirements per theme are set out in section 3.5.

Research institutes and/or companies external to the project (other than funded and non-funded project partners) can confirm their interest and commitment to provide input to the project via cash or in-kind contributions by completing the cash or in-kind commitment letter available on the platform.

NOTE: As foreseen in the law of 18 September 2017, **companies, a(i)sbl and foundations** must have submitted accurate and current information on their beneficial owners to the UBO (Ultimate Beneficial Owner) register of the FPS Finances. **The delivery of an extract of the UBO register is a formal requirement for a valid application for the call.**

You are a **company, a(i)sbl or a foundation**? Upload your **UBO register** in the online platform!

The documents of the applicants are submitted to the General Intelligence and Security Service which will examine them in accordance with its missions and legal powers as defined in the law of November 30, 1998 governing intelligence and security services. The advice rendered by the security service may be based on a classified note.

2.3. INFORMATION DAY

To inform potential applicants about the context, scope and modalities of this call and to offer them network opportunities, an information day will be held on **Wednesday 22 January 2025 (8h30 – 16h30) at the Royal Military Academy.**

Registration prior to the event is required.

More details are announced through the **DEFRA-website** and the **website of the RHID** as well as through social media.

3. CALL INFORMATION

3.1. DOCUMENTATION RELATED TO THIS CALL

3.1.1. DEFRA WEBSITE

The following documents are available on the **DEFRA website** (https://www.belspo.be/defra):

- Information document, including submission and evaluation guidelines and budget rules: general information on the programme and the call, overview proposal content and corresponding evaluation criteria for the applicants and the evaluators (the present document)
- Evaluators eligibility: eligibility criteria for potential remote evaluators
- Evaluation matrix for pre-proposals: overview of the evaluation ratings for the pre-proposals
- Evaluation matrix for full proposals: overview of the evaluation ratings for the full proposals
- Platform Submission guidelines: information for the applicants on the use of the submission platform
- FAQ
- Pre-proposal structure (word-file available on online platform)
- Full Proposal structure (word-file available on online platform)
- Annexe II – general conditions applicable to the 2025 contracts

3.1.2. DEFRA SUBMISSION PLATFORM

The following templates will be made available on the **DEFRA online SUBMISSION platform** (https://defra.belspo.be) and must be used compulsorily unless otherwise stated. Applicants must log in to the platform in order to access them:

In PHASE 1 of the call (submission of pre-proposals):

- Pre-proposal template (Word file)

In PHASE 2 of the call the following documents will be made accessible to the applicants that are invited to submit a full proposal:

- Full Proposal template (Word file)
- Gantt chart (Excel file)
- Budget file (Excel file)
- Cash or in-kind commitment letter (from institutes/companies which are not partners of the project) – non mandatory, only if applicable (Word file)

3.2. INDICATIVE CALENDAR OF THE CALL

	Date	**At / via**
Information session	22 January 2025 (8h30 – 16h30)	RMA, building I, meeting room Frank De Winne
Deadline Pre-proposals	20 February 2025 (14h00)	Online submission platform
Communication of evaluation result pre-proposals	20 March 2025	Mail
Deadline Full proposals	2 May 2025 (14h00)	Online submission platform
Remote scientific peer review evaluation	5 May – 2 June 2025	Online evaluation platform
Feedback to applicants in preparation of panel meeting (consensus reports and questions to applicants)	30 June 2025	Mail
Written feedback by applicants (answers)	31 July 2025	Mail
Panel evaluation, incl. interviews with the applicants	Between 13 August and 3 September 2025	RHID
Selection proposal formulated by the scientific committee of the RHID	11 September 2025	NA
Final selection of proposals by the board of directors of the RHID and allocation of projects	25 September 2025	NA
Communication of results to applicants	30 September 2025	Mail
Signature contracts	14 November 2025	Online E-sign platform

3.3. RESEARCH THEMES AND INDICATIVE BUDGET OF THIS CALL

The present call covers the following research themes, with their indicative budget:

	Indicative budget (M€)
Theme 1 – AI in support for operations	2.0
Theme 2 – CYBER	2.0
Theme 3 – Medical Casualty Evacuation	2.0
Theme 4 – Demining Technologies	2.0
Theme 5 – Biotechnologies and Human Enhancement/Augmentation (BHEA)	2.0
Theme 6 – Sensor Technologies	2.0
Theme 7 – Critical Maritime Infrastructure Protection	2.0
Theme 8 – Counter-Unmanned Aerial Systems	2.0
Theme 9 – Open call: Defence relevant research	4.0
TOTAL	**20.0**

The "Open call" (theme 9) is open to any research relevant for defence across a broad spectrum, focusing on two domains: the Technology domain and the Human Factors domain. Proposals can only be introduced in the "Open call" if the subject of the proposal does not correspond with one of the other eight themes.

There is no set maximum budget per project. However, applicants should take into consideration the total available budget for each theme. The objective is to develop a project with the most efficient use of public resources.

The number of projects that will be funded per theme depends on the evaluation of the proposals and the requested budget per proposal. Passing the threshold of scientific quality, the best ranked proposal per theme will be funded. The remaining proposals will be put together in a common ranking list based on their final evaluation results (after the Scientific Experts Committee meetings, see section 5.1.2).

Budget transfers between the themes are possible.

3.3.1. THEME 1 – AI in Support for operations

Context

In today's complex military environment, Artificial Intelligence (AI) systems will become crucial for enhancing effectiveness and decision-making. In this light, multi-agent AI systems, composed of autonomous agents that decompose complex problems, collaborate, and adapt in real-time, have the potential to excel in managing the complexity and unpredictability of military environments. Whether coordinating logistics or optimizing battlefield strategies, multi-agent AI systems enable military forces to decompose complex problems, process vast amounts of data, explore alternatives, simulate outcomes, and generate informed proposals for decision-making.

Research scope

A multi-agent AI system framework allows for thorough research into the value of this approach, enabling the exploration, development, and testing of diverse use cases in controlled and realistic environments. This framework provides not only a flexible reference architecture where a particular configuration of AI agents (including agentic AI) can be deployed to assess their effectiveness in a targeted scenario, but also the necessary processes to implement such a system within Belgian Defence. The inclusion of agentic AI enhances the framework's ability to adapt, learn, and optimize autonomously, further improving the precision and effectiveness of defence operations.

This approach is expected to facilitate innovation and the discovery of new applications while ensuring rigorous testing under specific conditions, enhancing robustness and reliability. The state-of-the-art multi-agent AI system framework should be designed to enable users to tailor it for specific use cases, ensuring maximum flexibility while adhering to industry standards (including NATO and EU standards). It will serve as a foundation for proof of concepts and scalable implementations, providing a robust platform for exploring innovative applications and rapidly deploying them in real-world scenarios.

Research proposals should include both the development of a multi-agent AI system framework and its application with at least one use case. Possible use cases include but are not limited to:

- (Operational) logistics and supply chain management
- Doctrine for the planning of operations (per the AJP-5)
- Battlefield simulations and wargaming
- Cybersecurity
- Swarming of autonomous systems
- Adaptive user interface design for intelligence analysis

Research proposals should anticipate any security, ethical and legal data collection, processing and sharing requirements in their planning (e.g., by generating synthetic data).

Impact for Defence

Due to the broad range of applications and versatility of multi-agent/agentic AI, it can revolutionise the way defence operations take place: it can enhance operational efficiency and coordination and improve decision making.
The research projects are expected to:

- reach technology readiness level 6, with an emphasis on demonstrating a proof-of-concept in simulated or real-world scenarios (such as air gapped environments);
- increase the knowledge of state-of-the-art methods and tools for multi-agent/agentic AI within Belgian Defence. This includes documenting the resulting multi-agent/agentic AI framework, its reference architecture and the involved processes to configure and implement the framework.

3.3.2. THEME 2 – CYBER

Context

Cryptographic mechanisms are increasingly used for the protection of critical information, and it is of paramount importance to achieve the highest security in their implementation. The security of cryptographic protocols and algorithms can be compromised due to flaws introduced in their implementation or naïve/optimistic assumptions made about their execution environment. The production of high security devices and the assessment of their resistance against attacks by well-funded adversaries, such as state-sponsored actors, is a notoriously difficult task.

Research scope

This theme seeks project proposals on any topic that facilitates the production or the evaluation of cryptographic modules, with an emphasis on feasibility and cost-effectiveness, including, but not limited to, the following topics:

- Cryptographic designs and security architectures that mitigate risks linked to implementation vulnerabilities. For example, the use of threshold mechanisms to avoid single points of failure or threshold implementations to mitigate side-channel vulnerabilities.
- Methods and tools for the production of high-assurance cryptographic implementations. For example, cryptographic coding rules and best practices, certified compilation, formal methods to verify security properties of implementations (e.g. zeroization, information flow), hardware trojan prevention and detection.
- Attacks on cryptographic implementations and their countermeasures, for example micro-architectural side-channel attacks, physical side-channel attacks, fault attacks, hardware tampering and reverse engineering.
- Methodologies to assess cryptographic implementation vulnerabilities and attack potential. For example, side-channel leakage assessments, feasibility of remote timing attacks, threat assessment.

Impact for Defence

Projects are expected to increase one or both of the following:

1. The capacity of Belgian Defence with respect to the evaluation/certification of cryptographic products and their implementation:

- knowledge of state-of-the-art attacks and countermeasures,

- know-how in performing state-of-the-art attacks on cryptographic devices.

2. The capacity of Belgian Defence with respect to the production of cryptographic products:

- knowledge of state-of-the-art methods and tools,
- know-how in performing sound risk analyses and vulnerability assessments.

3.3.3. THEME 3 – Medical Casualty Evacuation

Context

In recent years, global conflicts, natural disasters, and humanitarian crises have underscored the urgent need for scalable, efficient, and resilient solutions for the rapid evacuation of large numbers of casualties. Bulk, long-range evacuation capability is critical to saving lives and ensuring optimal medical care, yet current options remain limited, especially for mobilizing resources at a moment's notice. We invite proposals for research projects aimed at developing adaptable, rapid-response solutions in the following domains (not limitative):

- Adaptation and integration of medical equipment on civil/military multi-use platforms,
- Development of real-time, rugged, patient physiological monitoring systems that can function in different transport environments,
- Innovative patient care support systems during transport,
- Medical sustainable logistics and documentation systems.

Further research is needed to validate solutions and new capabilities.

Research scope

The research project(s) should focus on developing long-range evacuation options that can be mobilized quickly, using existing civilian means such as trains, busses, and/or civilian ships, transformed into evacuation options. The projects should aim to provide solutions that are innovative in their approach, and that can effectively respond to the needs of different types of casualties in different circumstances. Within the projects special attention is needed in patient care support during transportation, logistics, patient tracking, documentation, communication means but also safety and regulatory standards outlined by national and international bodies.
The proposed research should focus on solutions that are scalable and adaptable, up to TRLs 5-6.
We are seeking projects that focus on key areas essential for effective bulk casualty evacuation and patient care. The proposed solutions could aim to address the following challenges:

- Adaptation and Integration of Medical Equipment on civil/military multi-use platforms
  Research should explore methods for adapting civil/military multi-use platforms to accommodate medical equipment effectively. This includes developing frameworks for installing life-support systems, medical beds, and monitoring devices on trains, busses, and ships while maintaining interoperability and operational efficiency.
- Innovative patient care support systems during transport
  Innovative approaches are needed to enhance patient care & physiological monitoring during transport. Research should focus on support systems that facilitate safe handling, stabilization, and continuous care for various types of casualties, from minor injuries to critical care patients.
- Medical logistics and documentation systems
  Develop robust logistics systems for efficient and coordinated evacuation operations. This includes designing interoperable medical documentation systems that can provide real-time data to multiple stakeholders and ensure continuity of care across borders and agencies.

- Development of real-time patient physiological monitoring systems that can function in different transport environments
  Secure data exchange systems are essential for tracking and coordinating patient care across national and international jurisdictions. These systems should enable the secure transfer of medical records and facilitate real-time communication among medical, logistics, and coordination teams.

Impact for Defence

The primary objective is to design a scalable, rapidly mobilizable bulk evacuation solution that can be implemented across national and international boundaries using adaptable civilian resources. Proposed solutions should address finalities such as:

- Rapid Mobilization and Deployment: Utilize existing civilian transport systems with minimal modification and rapid deployment capability,
- Adaptability and Scalability: Ensure that solutions are flexible enough to handle different casualty types and scalable to meet varying demands,
- Regulatory and Safety Compliance: Adhere to national and international safety and regulatory standards for medical transportation to ensure legal compliance, medical ethics and operational safety.

Proposals should aim to achieve a technology readiness level (TRL) of 5-6, demonstrating robust proof-of-concept and initial deployment capabilities. Emphasis on validation and real-world application is highly encouraged.

3.3.4. THEME 4 – Demining Technologies

Context

The "Demining Technologies" theme seeks to advance innovative solutions to address the critical challenges of mine-breaching and mine-clearing in post-conflict environments.

In modern warfare, Improvised Explosive Devices (IEDs) and Unexploded Ordnances (UXOs) remain pervasive threats, responsible for a substantial portion of casualties and infrastructural damage. The development of efficient, reliable, and cost-effective demining technologies is therefore of paramount importance, not only for military, but also for humanitarian and economic purposes. These challenges necessitate cutting-edge research to ensure safer environments and sustainable recovery in conflict-affected regions.

Research scope

This theme promotes research efforts in a range of critical technological areas, including but not limited to:

- Unmanned Platforms: The development of autonomous systems for the detection, identification, neutralization, and disposal of explosive threats in diverse environments,
- Advanced Detection Systems: Investigation of novel sensing modalities (e.g., hyperspectral imaging, acoustic sensors, and ground-penetrating radar) and multi-sensor data fusion techniques integrated with Artificial Intelligence to significantly enhance the detection and classification of explosive devices,
- Nanotechnology: Exploration of nanomaterials and nanodevices for precise detection, neutralization, or even self-healing capabilities in minefields,
- Drone Swarms: Utilization of coordinated drone swarms for efficient area coverage, mapping, and collaborative threat neutralization,
- Electromagnetic Countermeasures: Development of advanced tools capable of safely disabling IEDs and UXOs without triggering their explosive components.

Proposals should address one or more of these areas, demonstrating how the research contributes to the overall safety, efficiency, and scalability of demining operations. Technologies should aim to provide innovative solutions that are deployable in real-world scenarios, including at least one of the below:

- Removal or neutralization of UXOs in populated areas,
- Safe neutralization of IEDs in rural and urban settings,
- (optionally) Indoor and subterranean settings.

Impact for Defence

These efforts should be directed towards:

- Improving the speed, accuracy, efficiency, and safety of demining/EOD operations,
- Ensuring scalability, enabling technologies to adapt to different operational environments,
- Achieving Technology Readiness Levels (TRL) 5 to 6 within a project duration of 2 to 4 years, ensuring a clear pathway towards practical deployment,
- Minimize collateral damage, including ecological, economic, and social impacts.

3.3.5. THEME 5 – Biotechnologies and Human Enhancement/Augmentation (BHEA)

Context

Biotechnologies and Human Enhancement/Augmentation (BHEA) are recognized as a core component of NATO's Emerging and Disruptive Technologies (EDT) portfolio, offering transformative potential across a wide array of Defence and security domains. Recent advances in synthetic biology—the integration of microbiology, genetic engineering, and systems engineering principles—have unlocked new possibilities to enhance military capabilities, improve resilience, and safeguard personnel.

The NATO EDT focus on BHEA aims to harness these breakthroughs to create advanced tools and applications in medicine, human performance, and Chemical and Biological (CB) defence, thus enhancing preparedness and response capabilities.

Research scope

Synthetic biology enables the modification or creation of biological systems by combining microbiology and genetic engineering techniques with the principles of systems engineering and its exploitation will advance defence capabilities through applications in medicine (e.g., development and application of vaccines and therapeutics), human performance enhancement (e.g., development of wearable/body-worn biosensors designed for pathogens and chemical threats), and Chemical and Biological (CB) defence (e.g., development of threat agnostic detection and identification systems).

We are seeking innovative proposals that will drive the development of BHEA technologies and contribute to Belgian Defence and security objectives. Key areas of focus include:

1. Medical Advancements and Human Performance Enhancement
    - Vaccine and Therapeutic Development and Applications: Explore (synthetic) biology approaches to accelerate the design and production of vaccines and (personalised) therapeutics, especially those capable of responding to emerging (multiresistant) pathogens and rapidly evolving biological threats that have the potential to pose a public health problem,

- Precision Medicine in Battlefield Conditions: Develop tools for rapid diagnosis and treatment customization in challenging environments, focusing on point-of-care (clinical samples) and point-of-need (environmental samples) solutions that improve survival and recovery rates for injured or infected personnel,
- Tissue Engineering and Regenerative Medicine: Research in tissue repair, cellular regeneration, and wound healing, with the aim of significantly reducing recovery time and enhancing resilience for personnel, particularly in austere or high-risk settings,
- Design of next-generation biosensors that can be worn or integrated with equipment to detect biological pathogens and/or chemical agents in real-time. Emphasis should be on developing sensors that are accurate (highly specific and sensitive), robust and adaptable across a range of sample matrices (biomedical/clinical and environmental) and operational conditions.

2. Chemical and Biological (CB) Defence and Detection
    - Threat-Agnostic Detection and Identification Systems: Create versatile detection systems that can identify a range of chemical and biological agents without requiring pre-existing knowledge of specific threats. These should provide rapid, reliable detection in field environments, supporting personnel and public safety in the event of CB incidents. Demonstrating the remote usability (e.g. mounted on a drone, UAV, etc.) of the system to be developed could be an added value,
    - Bioengineered Defence Solutions: Research novel countermeasures, such as biologically-derived neutralizing agents, that can degrade or deactivate chemical and biological threats. Projects might explore applications in decontamination, containment, and individual protection,
    - Resilience and Response Tools for CB Scenarios: Design biosynthetic platforms that can detect and neutralize threats in complex or contaminated environments and explore genetically engineered organisms capable of serving as “biosentinels” or environmental indicators for threat detection.

We encourage proposals that incorporate a multi-modal approach, leveraging advances in genetic engineering, data science, sensor technology, and systems integration. Projects should consider:

- Ethics and Compliance: Consider the ethical, legal, and societal implications of BHEA applications, ensuring alignment with NATO standards and (inter)national laws,
- Scalability and Adaptability: Design solutions that are modular and can be scaled up or adapted to different missions and environments,
- Security and Reliability: Emphasize data security, especially in systems involving health monitoring and sensitive information sharing in operational environment, to protect personnel privacy and operational integrity.

Impact for Defence

The primary goal is to advance BHEA technologies that can support and protect personnel, enhance military readiness, and increase the operational effectiveness of Belgian Defence forces. Proposals should aim to achieve outcomes that:

- Enhance Operational Efficiency and Resilience: The solutions and systems to be developed are expected to enable military personnel and civilian stakeholders to maintain peak performance in challenging environments,
- Advance Threat Detection and Response: Provide tools and techniques for rapid and accurate threat detection, identification, and neutralization across chemical and biological domains in order to prevent, protect, and recover people from exposure to naturally occurring or laboratory- derived threats that are

released accidentally or deliberately, especially in the context of a Chemical and/or Biological (CB) hazard,

- Promote Adaptability and Interoperability: Ensure that solutions are adaptable across Belgian Defence and civilian stakeholders, interoperable with existing systems, and compliant with (inter)national standards and ethical guidelines.

Projects are expected to reach technology readiness levels (TRL) 4-6, with an emphasis on demonstrating proof-of-concept solutions in simulated or real-world scenarios.

3.3.6. THEME 6 – Sensor Technologies

Context

Limited situational awareness in armoured vehicles is a tactical handicap endangering crew and mission, especially in urban conditions. Lately, this situation is further exacerbated by hard-to-detect threats from above such as unmanned aerial vehicles (UAVs). Electro-optical sensors allow to enhance the field of view and the range of detectable wavelengths. However, a real continuous omnidirectional surveillance, including the sky, is lacking. Furthermore, even if this was not the case, it is not possible to continuously display a fully omnidirectional view inside the vehicle, nor can the human operator continuously monitor all the output of these sensors to extract important information. In addition, many existing surveillance systems are not able to extract information regarding the distance from the system to the potential threat.

Research scope

Solution oriented efforts could include electro-optical based omnidirectional low Size, Weight, Power and Cost (SWaP-C) surveillance which automatically presents important information in a condense and intuitive manner to the crew. In addition to the detection, solutions able to acquire information on the distance between threat and observer are also highly interesting.

Proposals should encompass all the following topics:

- Use of passive electro-optical sensors; passive infrared (IR) sensors and active Electro-Optical/Infra-Red (EO/IR) sensors can be included,
- Data processing of the sensor data to produce recognized land picture,
- Collaboration between multiple vehicles,
- Edge computing.

The analysis of the cognitive load reduction is an added value as well as applicability in an urban environment.

Impact for Defence

Added value:

- Better situational awareness on the battlefield despite the limited display area,
- Threat evaluation and classification to facilitate decision making by vehicle commander,
- Added resilience (thanks to the edge computing) against jamming and decreased need for long distance data link (link to Command & Control Center),
- Estimation of the distance to the threats or to other vehicles.

3.3.7. THEME 7 – Critical Maritime Infrastructure Protection

Context

The critical infrastructure, such as cables, pipelines, windmills, and artificial islands in Belgian North Sea (TTW-EEZ) and beyond, requires robust protection measures. This becomes even more crucial in view of projects such as the energy island, which will hold strategic importance for Belgium's energy infrastructure. It is essential for Belgian Defence to be prepared to contribute to the safeguarding of the maritime infrastructure against non-malicious and malicious threats when, not if, called upon.

Last year's DEFRA call in this domain slightly focused on underwater challenges, although multi-domain aspects were to be considered. This year's call shifts the focus to the aerial domain, aiming to prepare for the safeguarding of maritime infrastructure, especially in the face of evolving aerial threats. However, it is still important to recognize that threats in all relevant domains (underwater, surface, air and cyber) are to be considered.

Research scope

The growing threat from the air, including potential attacks by unmanned aerial vehicles (UAVs) and other airborne systems, demands increased vigilance and (very) short reaction times. To further enhance defenses against unauthorized access by these threats and to mitigate their potential impact, proposed systems could implement:

- Robust aerial surveillance systems of any nature,
- Autonomous aerial vehicles (AAVs) to ensure regular monitoring,
- Access control mechanisms (e.g. quick access to traffic control systems, or other ways to ensure smooth threat identification),
- Means to provide real-time situational awareness to authorities such as the Maritiem Informatiekruispunt (MIK),
- Physical barriers (e.g. nets, shields, cables, …),
- Air defense systems (e.g. counter-UAVs, …).

Note that it is not the intent to protect against ballistic or hypersonic missiles.

The research should have specific attention on the challenges:

- Balance between delayed versus real-time data dissemination,
- Maximum effectiveness with minimal collateral damage (in the largest sense: ecological, economic, military, …),
- Trade-off ranging from single use sensor/effector to permanent observation/neutralization,
- Maximum probability of detection with minimum probability of false alerts,
- Cyber resilience.

Impact for Defence

This call aims to facilitate the research of a credible and realistic architecture for the protection of Belgium's maritime critical infrastructure, taking into account the existing legal framework and all other competent parties involved.

The architecture should fit in a comprehensive framework that integrates physical and cyber related (counter)measures, considering the unique circumstances in the maritime environment and the cross-domain nature of the protection requirements.

Ideally, the offered solution should be compatible with the existing and future systems in the “Maritiem Informatiekruispunt” (MIK) and the Maritime Operations Centre (MOC).

3.3.8. THEME 8 – Counter-Unmanned Aerial Systems

Context

The Ukraine war underlined the breakthrough of a new era of aerial warfare: the extensive use of unmanned aerial systems (UAS). Today, UAS are an indispensable part of any military operation, with tasks including, but not limited to, reconnaissance and surveillance.

Due to the small, inexpensive, and readily available character of drones, they are also used by maleficent actors, in different environments and contexts, such as terrorism or drug smuggling. There is therefore an increasing need for the development of effective counter unmanned aerial systems (C-UAS). By effectively countering UAS threats, Belgian forces can better protect personnel, assets, and critical infrastructure both domestically and in international contexts.

Research scope

This call invites proposals from multidisciplinary teams that aim to address the critical challenges in C-UAS technology development along the whole kill-chain (Detect, Track, Identify, Neutralize). The project will focus on small UAS (sUAS), specifically targeting NATO Class 1 up to mini (<15kg) drones flying alone or together in remote-controlled or (semi)-autonomous modes.

The goal is to improve the following (non-limitative) list:

- Detection and classification:
  - Enhance the probability of detection and classification in a realistic outdoor environment in presence of surrounding RF communications, clutter and changing (poor) visibility at long range > 1 km,
  - Improve Sensor fusion (different sensors from the same system and/or different systems).

- Identify/Track
  - Payload identification,
  - Trajectory prediction, intent (threat) determination,
  - Target prioritization.

- Neutralize
  - Enhance the probability of neutralization for kinetic and non-kinetic means (soft/hard kills),
  - Enhance the probability of neutralization of multiple targets,
  - Enhance the probability of neutralization at longer (>1 km) range,
  - Improve the collateral damage limitation during/after neutralization,
  - Allow scalability of effectors (creation of a possible escalation of force).

The goal is also to improve potential integration of individual sensors and/or effectors in an existing Systems of Systems (SoS).

Proposals should focus on innovative solutions that will contribute to the deployment of effective C-UAS systems. The research should not only focus on technological advancement but also consider the broader implications of C-UAS deployment and use, including legal, ethical, and environmental factors.

Impact for Defence

The research should further pave the way towards Counter-UAS systems with following characteristics:

- Improved detection, classification, identification, tracking and neutralization compared to existing State of the Art (SoA) Commercial-off-the-shelf (COTS)/Military-off-the-shelf (MOTS) solutions,
- Modularity,
- Scalability,
- Integration into existing/future systems.

The project should provide concrete, evidence-based validation of the solution's performance and effectiveness under relevant conditions and this compared to SoA products.

Every project should be compatible with the current interoperability standards (draft version of STANREC 4869 'Countering Class I UAS Data Exchange Format' – use of the SAPIENT standard) and integration in civilian security environment should be envisaged.

3.3.9. THEME 9 – Open call: Defence relevant research

Context

Proposals are welcome to address new, upcoming, or unforeseen challenges and/or creative or disruptive solutions. Proposals can only be introduced in the "open theme" if the subject of the proposal does not correspond with one of the other eight themes.
This call is "open" to any research relevant for defence across a broad spectrum, focusing on two domains: Technology domain and Human Factors domain.

Research scope

This call is open to any research for defence across a broad spectrum within the following defence research areas:

- Space technologies
- Communication Technologies
- Sensor Technologies
- Autonomous Systems and Artificial Intelligence
- Cybersecurity
- Smart and Advanced Materials
- Advanced Weapon Systems and Platforms
- Protection of Personnel, Systems, and Infrastructure
- Sustainable Energy and Environment
- Advanced Military Health
- Human Systems and Behaviour
- Security and Defence Policy

Specific for the Human Factors domain, it has to be mentioned that Belgian Defence is confronted with a wide array of specific challenges in the omnipresent uncertainty and complexity of the operational context (i.e.

sociocultural context, information overload, optimised organisational and decisional processes, resilience, highly developed operational and training means…).
The Human Factors domain targets studies on both the development of defence and security policy as on the optimisation and integration of human beings in a complex organisation such as defence. The latter can be approached from an economical, legal, psychological, sociological, historical, or ethical point of view.

Impact for Defence

Technology Domain:
The proposals must address innovative defence technologies and solutions, including those that can improve readiness, deployability and sustainability in all spectra of tasks and missions, for example in terms of operations, equipment, basing, energy solutions, … The goal of this open call is to achieve innovative and cost-effective solutions for defence applications, ground-breaking or novel concepts and approaches, new promising future improvements or the application of technologies or concepts previously not applied in the defence sector.

Human Factors Domain:
The goal of this open call is to explore new solutions towards the development of defence and security policy and optimised functioning and integration of human beings in complex organisations such as defence, from an economical, legal, psychological, sociological, historical, or ethical point of view.

3.4. PROJECT DURATION

The projects will have a duration of **2 to maximum 4 years**.

3.5. PROJECT PARTNERSHIP

3.5.1. PARTNERSHIP

For all themes, except for proposals in the Human Factors domain of theme 9, proposals must be submitted by a **network** composed of **at least one** (public or private non-profit) **research institute** - receiving at least 10% of the project budget - **and one private company**. All types of organisations can act as project coordinator. For proposals submitted in the Human Factors domain of theme 9, the partnership does not have to contain a private company.

Partnership:
- at least one (public or private non-profit) research institute
- at least one company (except for the Human Factors domain of theme 9)

Belgian Defence research institutes (Royal Military Academy (RMA), Military Hospital Queen Astrid (MHQA) and the Defence Laboratories (DLD)) can be a partner in the network[2]. Except for theme 2*, it is not mandatory to have one of these institutes as a partner; it will neither have a beneficial effect on the evaluation result (no bonus).

[2] DLD and MHQA must inform the RMA of all proposals they are participating in.

*For **theme 2 – CYBER**, it is **MANDATORY** to have the Royal Military Academy (RMA) as a partner in the network.

3.5.2. ROLES AND RESPONSIBILITIES WITHIN THE PROJECT

Project partners jointly share obligations and responsibilities during the implementation of the project. The project should be fairly balanced, even if different partners may have different tasks and subsequently different budgets.

A **coordinator** must be appointed in each network proposal.

For each project, a **Steering Committee** shall be established at the start of the project to act as the governing body (see section 6.3.).

ROLE OF THE COORDINATOR

The coordinator is responsible for the overall project management and coordination. He/she is the contact person for the RHID to communicate with the partnership and must transfer all relevant information to the other project partners. He/she shall:

- Coordinate all activities to be carried out in the framework of the project,
- Coordinate the internal meetings between the network members,
- Coordinate the production of the required project reports intended for Belgian Defence as described in section 6.4.,
- Coordinate the synthesis and translation of the research results, with a view to applications and support for decision-making,
- Coordinate the publication and dissemination of the research results,
- Chair all meetings of the Steering Committee, unless decided otherwise in a meeting of the Steering Committee,
- Convene meetings of the Steering Committee and write the reports of these meetings. The coordinator shall give notice in writing of a meeting with the agenda to each member no later than fourteen (14) calendar days in advance,
- Inform the Steering Committee and the RHID of any problems that might hinder the implementation of the project.

SUBCONTRACTORS

The project may require specific or punctual expertise, which can be delivered in the form of **subcontracting**. It is the responsibility of the project team to ensure that the rules and practices of the subcontractor, and in particular the ownership and valorisation of research results, publications and communications, are compatible with the rules governing the call. The project team takes full responsibility for the final result of the subcontracted work.
Subcontractors must be registered in Belgium. Subcontractors that are companies, a(i)sbl and foundations must submit accurate and current information on their beneficial owners to the UBO (Ultimate Beneficial Owner) register of the FPS Finances and deliver an extract of the UBO register to the DEFRA secretariat. This document will be submitted to the General Intelligence and Security Service which will examine it in accordance with its

missions and legal powers as defined in the law of November 30, 1998 governing intelligence and security services. The advice rendered by the security service may be based on a classified note.

In case the subcontractor needs access to classified information, the subcontractor must also obtain a security clearance (see section 7.3).

3.6. RESEARCH ETHICS

The "Code of Ethics for Scientific Research in Belgium" is a joint initiative of the Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique, the Académie Royale de Médecine de Belgique, the Koninklijke Vlaamse Academie van België voor Wetenschappen en Kunsten and the Koninklijke Academie voor Geneeskunde van België, with the support of BELSPO.

All projects must take this code of ethics into account in their research. If applicable, it is the responsibility of the applicants to consult the relevant Ethical Board for their organisation before submitting a proposal.

The code of ethics for scientific research in Belgium is available here: http://www.belspo.be/belspo/organisation/publ/pub_ostc/Eth_code/ethcode_en.pdf.

It is the responsibility of the applicants to consult the relevant Ethical Board for their organisation before submitting a proposal.

Applicants will be required to complete an “ethics self-assessment” when preparing the Full proposal. The Ethical Advisory Board of the RHID will assess this information and can advise the partnership how to deal with the ethical aspects of its proposal.

3.7. BUDGET RULES

Financing by Defence: This call is subject to the European legislation on State Funding (Art 107 (1) TFEU and the General Block Exemption Regulation in particular. Therefore, financing a public research institute or a private non-profit research centre is set to a maximum of 100% of the eligible costs. Financing a private company is limited to a maximum of 65% of the eligible costs, with a potential maximum of 80%, according to the size of the company (SME: +20% or 80% total threshold, MidCap: +10%).

	Public Research Institute and Private non-profit research centre	Private company
Partner budget FINANCED BY DEFENCE	100% eligible costs	Maximum of 65% of the eligible costs, with a potential maximum of 80%, according to the size of the company (SME: +20% or 80% total threshold, MidCap: +10%)

To discriminate between SME, MidCap and LargeCap enterprises article 2 of Regulation (EU) 2021/697 of the European Parliament and of the Council of 29 April 2021 establishing the European Defence Fund and repealing Regulation (EU) 2018/1092 is applied, which refers to Article 2 of the Annex to Commission Recommendation 2003/361/EC.

	Article 2 of Regulation (EU) 2021/697 of the European Parliament and of the Council of 29 April 2021 establishing the European Defence Fund and repealing Regulation (EU) 2018/1092 is applied, which refers to Article 2 of the Annex to Commission Recommendation 2003/361/EC
SME – Small and Medium Enterprises	*Staff headcount and financial ceilings determine enterprise categories within the SMEs:* *1. The category of micro, small and medium-sized enterprises (SMEs) is made up of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million.* *2. Within the SME category, a small enterprise is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million.* *3. Within the SME category, a microenterprise is defined as an enterprise which employs fewer than 10 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 2 million.*
MidCap Enterprises	*'Middle capitalisation company' or 'mid-cap' means an enterprise that is not a SME and that employs a maximum of 3 000 persons, where the headcount of staff is calculated in accordance with Articles 3 to 6 of the Annex to Recommendation 2003/361/EC.*
LargeCap Enterprises	*The 'large-cap' enterprises employ more than 3 000 persons, where the headcount of staff is calculated in accordance with Articles 3 to 6 of the Annex to Recommendation 2003/361/EC.*

The total project budget must be detailed in the tables of the budget file (100% cost) of the full proposal. Additional columns are foreseen to indicate the partner contribution to the total project cost (depending on the partner type) and the subsequent RHID funding contribution. (section 6.5 of the full proposal template: Budget assessment)

The project budget is reserved exclusively for the project activities. The different categories of expenditure financed by Defence are:

Staff: Pre-tax wages associated with increases in the cost of living, employers' social security and statutory insurance contributions, as well as any other compensation or allowance due by law and secondary to the salary itself. Defence does not allow cumulative wages for staff. Staff members bound contractually to a public institution - full time or part time - cannot apply for him/herself for Defence staff budget for that part.

The RHID prefers staff to be hired under a labour contract.

Costs related to non-employee staff, i.e. staff working in a management company, as freelancer or interim staff on behalf of the partner are also accepted.

Tax-free doctoral or post-doctoral scholarships are not accepted.

For persons to be hired for the project (so not identified by name in the proposal), the staff costs are limited to a maximum amount of:

- 5 700 €/month FTE for a technician/bachelor (regardless of years of experience)
- 8 000€/month FTE for a Master (regardless of years of experience)
- 8 700 €/month FTE for a Master in engineering (regardless of years of experience)
- 10 500€/month FTE for a PhD (regardless of years of experience)

The funding is limited to the time and period in which the (employee and non-employee) staff participates in the project.

General operating costs: this includes daily/usual supplies and products for the laboratory, workshop and office, documentation, consignments, use of daily software and IT facilities, organisation of internal meetings, etc. The general operating budget may not exceed 15% of the overall project staff budget for the project coordinator and 10% for the other project partners. The amounts claimed must correspond to actual expenditures strictly related to the project, even if supporting documents are not requested. Although no detailed justification is required for

these costs, the administration of the concerned partner must keep these invoices in its accounts in the event of an audit.

Specific operating costs: this includes a list of operating costs specific to the execution of the project tasks, such as costs for project analyses, testing, maintenance and repair of equipment purchased by the project, use of specific IT facilities and software, costs for surveys, open data publications, organisation of workshops and events, etc. These costs need to be clearly described in the proposal and each of them shall be justified by invoices during the project.

Overheads: Institutions' general overheads that cover, in one lump sum, administration, telephone, postal, maintenance, heating, lighting, electricity, rent, machine depreciation, and insurance costs. The total amount of this item is set as a fix amount of 10% of the total staff and operating costs.

Equipment: List of investment goods specific to the implementation of the project and to be purchased on the project budget. It concerns the purchase and installation of scientific and technical equipment and instruments, including computer equipment, to be entered in the inventory or assets of the institute/company. Equipment needs to be clearly described in the proposal and shall be justified by invoices.

Subcontracting: Expenses incurred by a third party to carry out project tasks or provide services that require special scientific or technical competences outside the partner's normal area of activity. The amount may not exceed 25% of the total budget allocated to the partner concerned. If the subcontractor is not yet known then only the nature, the planned duration and the estimated amount needs to be indicated in the proposal.

	STAFF COSTS (monthly costs)	GENERAL OPERATION COSTS	SPECIFIC OPERATION COSTS	OVERHEADS	EQUIPMENT	SUBCONTRACTING
PROJECT COORDINATOR	**Technician**: 5 700€/month **Master:** 8 000€/month **Master (engineering):** 8 700€/month **PhD:** 10 500€/month	15% of Staff costs *(Automatically generated)*	-	10% of [Staff costs + Operation costs] *(Automatically generated)*	-	Max. 25% of the total budget of this partner
OTHER PROJECT PARTNERS	**Technician**: 5 700€/month **Master:** 8 000€/month **Master (engineering):** 8 700€/month **PhD:** 10 500€/month	10% of Staff costs *(Automatically generated)*	-	10% of [Staff costs + Operation costs] *(Automatically generated)*	-	Max. 25% of the total budget of this partner

3.8. GENDER

The RHID strongly encourages the applicants to take into account the equality between women and men and to ensure gender mainstreaming in the implementation of the project. The project should include this both in the choice of the researchers and, where relevant, by integrating the gender dimension into their research.

4. SUBMISSION PROCEDURE

The submission of projects will be done in two phases using the DEFRA on-line submission platform:

https://defra.belspo.be

4.1. PHASE 1 – PRE-PROPOSAL

A **pre-proposal** must be submitted at the latest on **20 February 2025 (14h00).**
If the pre-proposal has not been submitted in time, it will be impossible to submit a full proposal.

The following information needs to be filled in directly into the online platform:

- The choice of the theme
- The title and acronym of the project
- The coordinates of the foreseen partners
- Summary of the project (1/2 page)
- Keywords (min 2; max 6).
- The name and contact details of 4 to 6 scientific experts (minimum **2 Belgian** and **2 foreign** experts) capable of assessing the proposal. The proposed experts must comply with the eligibility criteria for remote experts - see 'Evaluators eligibility'.
- Optionally, the name and contact details of 2 non-grata scientific experts to be excluded from the evaluation of the proposal under the condition of sufficient motivation.

The pre-proposal form can be downloaded from the platform and will contain:

- The title and acronym of the project.
- The choice of the theme.
- The coordinates of the foreseen partners.
- A brief description of the intended project: the scope, objectives, the innovation with respect to the state of the art, the relevance and potential impact of the project for Defence.
- Relevant references of the partners in relation to the project, incl. a short profile of the foreseen partners and a description of the added value of the partnership in addressing the research topic.

The total length of the **pre-proposal** should not exceed **9 pages** format A4.

Companies, a(i)sbl and foundations must upload the extract of the Ultimate Beneficial Owner (UBO) register as an annex to the pre-proposal (in pdf format).
Besides the extracts of the Ultimate Beneficial Owner (UBO), no other annexes are allowed.

BELSPO and the RHID will perform an eligibility check on the basis of the pre-proposal documents (see section 5.1.1.).

The pre-proposals that have passed the eligibility check will be evaluated by an internal evaluation committee of the Belgian Defence (see section 5.1.1.).

On **20 March 2025**, the internal evaluation committee will invite for each pre-defined theme (themes 1 to 8) maximum five (5) pre-proposals to submit a full proposal.
Only for theme 9, "Open call: Defence relevant research" maximum ten (10) pre-proposals will be invited to submit a full proposal.

The pre-proposals will also be used by BELSPO and the RHID to seek experts for the evaluation of the full proposals.

4.2. PHASE 2 – FULL PROPOSAL

For the themes 1 to 8, maximum five (5) pre-proposals will be invited to submit a full proposal. For theme 9, maximum ten (10) pre-proposals will be invited to submit a full proposal. Applicants must submit the full proposal via the online DEFRA submission platform.

The project objectives of the full proposal may vary from that of the pre-proposal to some extent. However, it cannot diverge to the point that the expertise mobilised for the evaluation of the proposal will become irrelevant.

Changes in the project partnership (changes in participating institute(s)/company(ies), including the coordination role) can only be accepted after the explicit approval of RHID. The keywords must remain the same since they are used for composing the evaluation panel.

In case other companies, a(i)sbl and foundations join the network, they must provide the extract of the Ultimate Beneficial Owner (UBO) register to the call secretariat by e-mail to defra@belspo.be.

The **full proposal** must be submitted at the latest on **2 May 2025 (14h00).**
If the full proposal does not comply with the submission rules or has not been submitted in time, it will not be taken into account for evaluation.

Content of the full proposal:

Within the full proposal form:

- The title, acronym and summary of the project.
- The name and contact details of the project partner(s).
- The proposal description:
    - scope and objectives,
    - state of the art and innovative character,
    - relevance and potential impact for Defence, including the data management plan and ethics self-assessment
    - quality of the partners/partnership of the project,
    - coherence between research objectives and methodology,
    - the work plan: work packages, the project risk assessment, the budget assessment.

As a separate document:

- The GANTT chart (mandatory)
- Budget file (mandatory)
- Cash or in-kind commitment letter (not mandatory)

5. EVALUATION PROCEDURE AND CRITERIA

5.1. EVALUATION PROCEDURE

5.1.1. PHASE 1 – EVALUATION OF PRE-PROPOSALS

Only pre-proposals that are complete and submitted in time will be taken into account.

BELSPO and the RHID will perform an eligibility check on the basis of the pre-proposal documents. Following criteria are applied:

- Completeness of the pre-proposal (all fields fully completed, UBR extracts available),
- Eligibility of each project partner (see section 2.2),
- Partnership composition (see section 3.5.1).

The pre-proposals that have passed the eligibility check will be evaluated by an internal evaluation committee of the Belgian Defence on the basis of the following criteria:

- The correspondence of the pre-proposal with the scope of the call themes,
- The quality of the pre-proposal, based on the description of the project objectives and the innovation with respect to the state of the art,
- The quality of the partners and the adequacy of the partnership,
- The relevance and potential impact for Defence.

More information about the criteria used can be found in the evaluation matrix for pre-proposals.

The RHID will translate the outcome of each pre-proposal's evaluation into numeric scores. In practice, this will be done as follows:

1. Translating the appreciations given to each sub-criterion into scores.
2. Adding the scores of the sub-criteria to obtain a total for each criterion.
3. Performing a weighted sum of the criteria in the following way:

WEIGHT OF THE DIFFERENT CRITERIA	**THEMEs 1 - 8**	**THEME 9**
Quality of the pre-proposal	40%	30%
Quality of the partners & Adequacy of the partnership	30%	30%
Impact	30%	40%

According to the scores obtained, the proposals will be ranked in a list per theme (Pre-proposal Ranking).
For the pre-proposals submitted in themes 1 to 8, this list will serve as the base for the selection of the applicants invited to introduce a full proposal.
For the pre-proposals submitted in the open theme 9, the internal evaluation committee of the Belgian Defence can apply additional criteria based on strategic considerations and the diversity of topics of the pre-proposals.

This evaluation will take place within three weeks after the submission of the pre-proposals. On **20 March 2025**, BELSPO will communicate the conclusions of the internal evaluation committee to the applicants and will invite the selected pre-proposals to submit a full proposal.

5.1.2. PHASE 2 – EVALUATION OF FULL PROPOSALS

Only full proposals that are complete and submitted in time will be taken into account.

The selection of proposals is based on a peer-review evaluation that guarantees scientific excellence and the alignment of the projects with the thematic objectives of the call. The evaluation of the full proposals runs in four steps:

Step 1 - Remote scientific peer review evaluation
Step 2 - Scientific Experts Committee (SEC) evaluation, including interviews with the applicants
Step 3 - Selection proposal formulated by the Scientific Committee of the RHID
Step 4 - Final selection of proposals by the Board of Directors of the RHID

STEP 1 - REMOTE SCIENTIFIC PEER REVIEW EVALUATION

BELSPO organises and coordinates a scientific peer review evaluation of each proposal. The principles of this evaluation are the same for all themes.

Each of the full proposals will be evaluated by a team of 3 independent experts having an adequate combined expertise to evaluate the research proposal. Each expert team will be composed of minimum one Belgian and minimum one foreign expert.

BELSPO is responsible for composing this remote 'written evaluation team' with experts from BELSPO's and RHID's own databases and experts suggested by the applicants.

For each proposal, an individual written evaluation is performed. The written evaluation takes place remotely, via the online DEFRA evaluation platform, based on an evaluation form. During this assessment, the experts will only have access to the proposals they will evaluate. They will not know who the other two reviewers are for that proposal, nor will they have access to each other's evaluations.

Each reviewer will assess the proposal and provide comments taking into account a variety of (sub)criteria, namely in the following categories:

- Scientific quality
- Quality and efficiency of the implementation
- Impact

More information about the criteria used can be found in the evaluation matrix for full proposals.

Once all written evaluations have been introduced for a given proposal, the evaluations reports will be compiled into a Consensus Report for each proposal. The Consensus Report will consist of appreciations and comments for the different (sub)criteria.

The report will also include questions to which the applicants must **respond in writing** prior to the presentation to the Scientific Expert Committee (SEC) (step 2).

At this stage, the Consensus Reports are definitive. They will not be modified in the subsequent steps of the evaluation.

The individual evaluations are neither communicated to the Scientific Expert Committees, nor to the applicants.

On **30 June 2025**, applicants will get access to an anonymised version of their definitive Consensus Report, in preparation of the presentation for the SEC. They will also get the list of questions to which they must answer in writing by **31 July 2025**.

STEP 2 – SCIENTIFIC EXPERTS COMMITTEE EVALUATION, INCLUDING INTERVIEWS WITH THE APPLICANTS

Preparation of the Scientific Experts Committee (SEC) evaluation

BELSPO will translate the outcome of each proposal's evaluation into numeric scores. In practice, this will be done as follows:

1. Translating the appreciations given to each sub-criterion into scores.
2. Adding the scores of the sub-criteria to obtain a total for each criterion.
3. Performing a weighted sum of the criteria in the following way:

WEIGHT OF THE DIFFERENT CRITERIA	ALL THEMEs
Scientific quality	35%
Quality and efficiency of the implementation	40%
Impact	25%

According to the scores obtained, the proposals will be ranked in a list (Proposal Ranking). This list will serve as a base for the panel discussion.

Scientific Experts Committee (SEC) evaluation

For each theme, the Scientific Expert Committee of Defence will be composed of members that are relevant for the theme.

Each SEC will receive the corresponding Proposal Rankings, and will have access, via the online DEFRA evaluation platform, to the proposals as well as the anonymised Consensus Reports. The Consensus Reports shall not be modified by the SEC.

Each SEC will organise interviews with the applicants of the full proposals according to the following schedule:

- Introduction (5 minutes)

- Presentation by the applicants, including an introduction of the proposal and integrating the answers to the questions of the remote experts (15 minutes).
- Questions and answers (Q&A) (25 minutes).
- Deliberation (10 minutes).

The applicants will assist in the meeting for the presentation and Q&A session of their proposal only.

Each SEC will classify the full proposals into (a) Panel Funding Scenario(s) according to specific criteria:

- Budget availability.
- Complementarities and/or overlaps between proposals.
- The coherence of the proposals with the strategic objectives (scope) of the themes.
- The cohesion of the partnership.
- General appreciation of the presentation by the applicants.

The SEC Funding Scenario(s) will classify all proposals in:

- Recommended for funding.
- Not recommended for funding.

The SEC will list the proposals that are recommended for funding by order of their final evaluation result.

STEP 3 - SELECTION PROPOSAL FORMULATED BY THE SCIENTIFIC COMMITTEE OF THE RHID

After the Scientific Experts Committee meetings, the best ranked proposal per theme will be proposed for funding to the Scientific Committee of the RHID. The remaining proposals will be put together in a common ranking list based on their final evaluation results.

The Scientific Committee of the RHID is composed of senior scientists and research directors and guarantees the quality level of Defence research. It proposes evaluation methods and research objectives, participates in the drafting of the research programme (ranking and selection of research projects) and evaluates its implementation. The composition of the Scientific Committee is currently defined in the Ministerial Decree of 11 January 2022.

The Scientific Committee will receive the following documents:

- SEC Funding Scenarios(s) per theme, including its motivation
- Common ranking list of all proposals across all themes, earmarking the best ranked proposal for each theme
- Full proposal and Consensus Report of each proposal (on demand)

Based on these documents, the Scientific Committee will perform a strategic selection of the proposals based on the criteria and rules explained hereunder, delivering the Scientific Committee Funding Scenario.

The following aspects will be taken into account when formulating the Scientific Committee Funding Scenario to the governance board of the RHID:

- Alignment of the proposal in relation to Defence priorities.
- Added value of the proposal in relation to Defence priorities.

The Scientific Committee will formulate the Scientific Committee Funding Scenario taking into account the following rules:

- In NO case will proposals deemed 'out of scope' be considered.
- In NO case will proposals deemed 'not recommended for funding' be considered.

STEP 4 - FINAL SELECTION OF PROPOSALS BY THE BOARD OF DIRECTORS OF THE RHID

The final selection decision of proposals to be funded is made by the Board of Directors of the RHID on the basis of the Scientific Committee Funding Scenario.

5.2. EVALUATION CRITERIA

The evaluation criteria that are used in each step of the evaluation procedure are described in the evaluation matrices (pre- and full proposal).

6. CONTRACTUAL OBLIGATIONS FOR SELECTED PROJECTS

6.1. PROJECT STARTING AND END DATE

The projects selected within the context of the current call will start in December 2025.

The project contracts will have a duration of 2 to maximum 4 years (plus 3 months to allow meeting all administrative requirements before the effective start-up of the project).

6.2. CONTRACTS

For the selected proposals, a contract is concluded between Belgian Defence and the funded partners.

The contract is composed of three parts that make up the research contract:

- Basic contract
- Annex I: Technical specifications
- Annex II: General conditions applicable to the 2025 contracts.

The basic contract designates the contracting parties (partners and Defence) and contains the general obligations applicable to the project, including the project and contract duration and budget. **The basic contract is signed by the heads of the partners involved (directors, rectors, CEOs).**

The content of Annex I "Technical specifications" is specifically related to the operational implementation of the project. It includes the detailed work description and schedule, details on funding by expenditure category etc. **Annex I "Technical specifications" is signed by the DEFRA programme manager and the promotors concerned.**

Annex II "General conditions applicable to the contract" contains all general provisions applicable to all DEFRA contracts. Annex II is the same for all DEFRA projects of a specific call. It is available on the DEFRA website and **will not be signed**.

Belgian Defence/RHID grants the selected projects the funds required for their implementation. The RHID shall reimburse at most, and up to the amount specified in the granted budget, the actual costs proven by the partners providing these costs are directly related to the implementation of the project.

In case a "Cash or in-kind commitment letter" is associated to the selected project, this commitment and contribution will be formalised by means of a bilateral contract between the external partner(s) and the project partner(s). The bilateral contract shall be in conformity with all the provisions contained in the DEFRA project contract. The provisions of the bilateral contract shall always be subordinate to the provisions of the DEFRA contract. A copy of the bilateral contract must be handed over to the Royal Higher Institute for Defence (RHID, defra@mil.be).

The partnership is encouraged to conclude a Consortium Agreement to define internal regulations regarding intellectual property (access to foreground and background, valorisation rights and modalities, and any other

theme deemed necessary). A copy of the signed Consortium Agreement must be handed over to the Royal Higher Institute for Defence (RHID, defra@mil.be).

6.3. COMPOSITION AND ROLE OF THE STEERING COMMITTEE

Each project will be accompanied by a **Steering Committee**, to be set up at the start of the project. The Steering Committee is composed of the project managers of the partners, the programme manager, the research manager of Defence and the intended end user of Belgian Defence.

The Steering Committee acts as a governance body, to ensure that the project remains in line with the research objectives and adapt the project plan accordingly whenever necessary. It ensures that the project reporting is done in accordance with section 6.4.

The Steering Committee should meet at least once a year to discuss the project's progress. The organisation of such meeting must be included in the project work plan and the project budget. Ideally, this(these) meeting(s) should take place in the same period as the delivery of the progress report(s).

The following actions and decisions will be taken by the Steering Committee:

- Examine information collected by the coordinator on the progress of the Project, to assess the compliance of the Project with the Proposal and, if necessary, propose modification of the Proposal.
- Determine the policy for press releases, joint publications and other public disclosures regarding the Project.
- Keep a register of Foreground generated within the Project and patents filed thereon, which is concluded at the end of the Project.
- Examine and approve proposed changes to the work programme. In case of actions with a budgetary impact, the Steering Committee will make proposals to the funding authority but cannot decide without the approval of this funding authority.
- If necessary, propose the termination of all or part of the Project.

6.4. REPORTS

The contract foresees the following reports to be submitted to the RHID:

- Initial report: to be submitted within three months after the start of the project.
- Progress report(s): to be submitted according to the specifications in the contract (annex 1, technical specifications).
- Final report: to be submitted three months after the end of the project.
- If deemed useful by the RHID, an additional report may be requested for an external evaluation of the project.
- The RHID can ask for a report or other input at any time during the course of the project in order to provide scientific support to valorisation and service actions related to the programme.

These reports are to be included in the project work plan and the cost of preparing them (including possible translations) must be covered by the project budget.

They should contain all necessary information to assess the progress of the project in relation to the work packages, deliverables and budget. Problems must be identified, including possible solutions.

To evaluate the impact of the DEFRA programme, the RHID can ask input from the partnership until 3 years after the end of the project.

7. DATA, RESULTS, INTELLECTUAL OWNERSHIP AND SECURITY REQUIREMENTS

7.1. GENERAL CONDITIONS

The Data Management Plan (DMP), to be submitted as part of the proposal, describes how the project partners deal with the collected data before, during and after the project. It is a key element of good data management.

For all aspects regarding the use of data, intellectual ownership and valorisation of the project results and the confidentiality or security requirements, the conditions of the General Conditions (Annex II of the contract and the articles 12, 13 and 14 in particular) apply.

Ownership of existing information and data (the individual background) remains with the original owner.

As a principle, the Foreground - the results (including information) produced by the project - shall be the property of the partner carrying out the work generating this foreground.

The principles for the use of joint foreground will have to be determined by the project partners, with respect for these General Conditions. These principles can be included in a Consortium Agreement to be concluded between the partners.

7.2. SPECIFIC CONDITIONS

For social and humanities data, a copy of the data and/or metadata can be transferred to SODHA (Social Sciences and Digital Humanities Archive) (https://www.sodha.be) after explicit approval of RHID.

7.3. CLASSIFIED INFORMATION/SECURITY RELATED ACTIVITIES

Certain activities undertaken in the frame of the projects may use or generate classified information. This paragraph solely concerns protective measures to be taken to preserve the confidentiality of security-sensitive information regarding these research projects.

A classification is given to documents to prevent their improper use which could damage, among other things, the fulfilment of the tasks of Defence, the external security and international relations of the State and the scientific and economic potential of the country (for the complete list see “Wet van 11 Dec 1998 Art 3/Loi du 11 Déc 1998 Art 3”).

According to the same law this identification should be based on the following classification levels:

- The "**TRES SECRET/ZEER GEHEIM**" level is assigned to a piece if its improper use could cause EXTREMELY SERIOUS damage to the main Belgian interests listed in the law. Topics that qualify under this category cannot be part of the project.
- The "**SECRET/GEHEIM**" level is assigned to a document if its improper use could cause SERIOUSLY damage to the interests listed in the law.

- The "**CONFIDENTIEL/VERTROUWELIJK**" level is assigned to a document if its improper use could harm any of the interests listed in the law.

Documents of which the originator wants to limit the distribution to persons who are authorized to use them on a need-to-know basis, without however attaching legal consequences to this limitation, are marked with the indication "**DIFFUSION RESTREINTE/BEPERKTE VERSPREIDING**".

These classification levels should be applied taking into account both the need to protect information and the need to avoid unnecessary obstruction to the use of research information and results.

Applicants should identify in the Full-Proposal the classification needs for the work packages of the project that involve threat and /or vulnerability assessments and the information on specifications or capabilities of the tool(s) used.

- threat assessments (i.e. estimation of the likelihood of a malicious act against an asset, with particular reference to factors such as intention, capacity and potential impact)
- vulnerability assessments (i.e. description of gaps or weaknesses which can be exploited during malicious acts, and often contain suggestions to eliminate or diminish these weaknesses)
- specifications (i.e. exact guidelines on the design, composition, manufacture, maintenance or operation of threat substances or countermeasure substances, technologies and procedures)
- capability assessments (i.e. description of the ability of an asset, system, network, service or authority to fulfil its intended role — and in particular the capacity of units, installations, systems, technologies, substances and personnel that have security-related functions to carry these out successfully)

Based on the assessment of the provided input a security screening by Belgian Defence might be imposed in the contract on ALL partners of the selected project(s). In that case, these beneficiaries should obtain a security clearance before starting work on classified parts of the project.

The applicable security framework for the action must be in place at the latest before the signature of the contract and will be considered as an annex to the contract.

More information can be found on the website of the National Security Authority (Nationale Veiligheidsoverheid – Autorité Nationale de Sécurité) https://www.nvoans.be/

This security analysis will not be part of the evaluation process but is essential to be able to start the project.

Persons that are involved in a project must be nationals of a country of the European Union or nationals of a country of the European Free Trade Association or nationals of a country that is a member of NATO.
Persons involved in a project may be subject to a verification. Only after a positive verification, a person can be recruited to the project.

8. COMPLAINTS

Both BELSPO and RHID place great importance on the quality of their service and on improving the way they operate. A complaint about the administrative handling of this call for proposals will be handled by BELSPO, RHID will handle complaints about the content of the call and the contracts that are concluded as a result of the call.

A special form to handle complaints has been created.

The complaint form is available at the following address:
http://www.belspo.be/belspo/organisation/complaints_en.stm

Complaints submitted anonymously or which are offensive or not related to our organisation will not be processed.

A complaint is handled as follows:

- Once your complaint has been filed, a notification of receipt will be sent.
- The complaint will be forwarded to the relevant departments and individuals and will be processed within one month.
- An answer will be sent by e-mail or letter.
- The complaint will be treated with strict confidentiality.

If you are dissatisfied by the initial response to a complaint, you can always contact the Médiateur Fédéral / Federal Ombudsman, rue de Louvain 48 bte 6 / Leuvenseweg 48 bus 6, 1000 Brussels (email: contact@mediateurfederal.be / contact@federaalombudsman.be).

9. CONTACTS

Further information can be obtained by contacting the **secretariat**: defra@belspo.be