DEFENSIE
LA DÉFENSE

Royal Higher Institute for Defence

belspo

DEFRA

Defence-related Research Action

Call for proposals 2021

Information document including submission and evaluation guidelines and budget rules - amended version

Important dates:

Information session: 8 March 2021 (14h00 - 16h00)
Deadline Pre-proposals: 22 April 2021 - 14h00
Deadline Full proposals: 30 June 2021 - 14h00

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

.be

Amendment made compared to original version:
- see blue text under "step 1 remote scientific peer review evaluation" on page 19

TABLE OF CONTENTS

1. SCIENTIFIC AND TECHNOLOGICAL RESEARCH OF THE MINISTRY OF DEFENCE

1.1. CONTEXT

In order to maintain the Belgian Defence military and technological edge to face current and future security challenges, scientific and technological research in the domain of security and defence is key.

As mentioned in the policy declaration of the Minister of Defence (2020)[1], the Ministry of Defence wants to take advantage of the existing and developing links between Defence, the national research institutions and the industry for the increased support of its security interests. In order to give a positive impetus to the pragmatic partnership between Defence and the Belgian industry and research institutions, the Ministry of Defence will gradually increase its R&T contribution as from 2022, with a view to reaching 2% of the defence effort in 2030.

The setup of this Research Action 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 framework, 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 programs. 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 program of the Ministry of Defence. Although in the past this program 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 open calls for proposals within the frame of its research program. The current call is the first open call, based on three selected research themes. In the future, larger open calls with a broader scope will be part of the program.

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

[1] Policy Declaration Defence 04 November 2020. https://www.dekamer.be/FLWB/PDF/55/1610/55K1610017.pdf

1.3. COLLABORATION WITH THE FEDERAL SCIENCE POLICY - BELSPO

For organising and managing the call for proposals, a collaboration agreement has been signed between the Ministry of Defence and the Federal Science Policy (BELSPO). BELSPO will manage this call 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.

2. DEFENCE-RELATED RESEARCH ACTION - DEFRA

2.1. OBJECTIVES OF THE PROGRAM

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

The general objectives of the program 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 first call in the frame of the DEFRA program.

2.2. ELIGIBILITY CRITERIA FOR PROJECT PARTNERS

This call is open to Belgian public and private non-profit research institutes and private companies (funded or non-funded).

For themes 2-SEHS and 3-SPACE, the project partnership must be in a triple helix composition where academia and industry work together to foster R&T for Defence (see section 3.3).

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.

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.

2.3. INFORMATION SESSION

To inform potential applicants about the context, scope and modalities of this call, an online information session will be held on **8 March 2021 (14h00 - 16h00).**

Registration prior to the event is required.

More details will be 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 program and the call, overview proposal content and corresponding evaluation criteria for the applicants and the evaluators (the present document)
- Evaluators eligibility: eligibility rules of proposed experts for the evaluation of the proposal
- 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 template (PDF file)
- Full Proposal template (PDF file)
- Annexe II - general conditions applicable to the contract

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) - only accessible to the selected pre-proposals
- Gantt chart (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	8 March 2021 (14h00 - 16h00)	Online
Deadline Pre-proposals	22 April 2021 - 14h00	Online submission platform
Communication of evaluation result pre-proposals	17 May 2021	Mail
Deadline Full proposals	30 June 2021 - 14h00	Online submission platform
Remote scientific peer review evaluation	05 July - 15 August 2021	Online evaluation platform
Feedback to applicants in preparation of panel meeting	end August 2021	Mail
Panel evaluation, incl. interviews with the applicants	beginning September	RHID or online
Selection proposal formulated by the scientific committee of the RHID	mid-September	NA
Final selection of proposals by the board of directors of the RHID and allocation of projects	beginning October	Mail
Signature contracts	01 December 2021	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 (K€)
Theme 1: NEET: Employment of NEET (Not in Employment, Education or Training) for Belgian Defence	200
Theme 2: SEHS: Small Energy Harvesting systems for Defence applications	400
Theme 3: **SPACE**: Space technologies for Defence applications	400

There is no maximum project budget set. 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. It is envisaged to have 1 or 2 projects funded for each of the themes. Budget transfers between the themes are possible.

3.3.1. THEME 1- NEET: EMPLOYMENT OF NEET (NOT IN EMPLOYMENT, EDUCATION OR TRAINING) FOR BELGIAN DEFENCE

Context

In these times of economic development and digital transformation of the society, the so-called 4th industrial revolution, we see in many countries a large group of the population remaining unemployed and without adequate training. Long periods of unemployment lead to deterioration of skills and lack of motivation, such that even if demand picks up, the motivation of this group – the so-called NEET (Not in Employment, Education or Training) may erode. This phenomenon is linked to the demographic changes and the transformation in our society, and is also a concern for our country, in which this group is growing[2].

In its vision towards 2030, the Directorate General (DG) of Human Resources (HR) of the Belgian Defence aims at alleviating acute personnel shortages while assuming its important societal role. The Belgian Defence already offers a range of temporary jobs and provides its candidates additional training and skills as well as a set of values and competencies for responsible citizenship that aims at increasing the chances on the labour market for those wishing to return to civilian life. However, the Belgian Defence will require innovative approaches and concepts in order to resolve the shortage of personnel, increase efficiency and optimise organisational and decisional processes.

Research scope

For this call, the primary focus of the research questions is the large group of people who are currently not in employment, education or training (NEET).

What are the objectives to reach with the initiative, for the society as a whole i.e. common (cultural) values crafting, responsible citizenship, training, preparing and insertion into the labour market, etc.?

At the basis, there is always the issue of basic education, training and citizenship. The NEET are inactive and not enrolled in education or training. The challenge for this group is not only the provision of specific education and training but also the assistance and coaching to bring them to the routine and the structure of working days and learn the skills that are also highly demanded by employers in the civil society. Identifying the societal factors that contribute to this NEET-phenomenon and the person-related determinants of people who belong to the NEET-category will decisively contribute to answering the main question: What needs to be done in order to prevent youngsters to become NEET in the first place and finally how to 'activate' this group ?

Furthermore, what could be the Belgian Defence's societal role in preventing and combatting this NEET-phenomenon? Which resources should be harnessed and what are the associated costs? Indeed, the Belgian Defence can act as a "social ladder" to pave the way for the NEET to become a useful contributor in society, or even be a direct employer. After all, facing major short- and mid-term HR-challenges, the Belgian Defence would definitely benefit from successfully attracting and retaining the NEET.

The questions to be answered then are how to tailor recruitment campaigns, adapt recruitment requirements, selection and training methods and maybe even corporate culture in order to catalyse proper integration?

This process implies an evidence-based SWOT analysis related to the NEET situation.

[2] NEET | Statbel

Expected impact

By investing in the prevention of the development of a potentially growing group of people without adequate training or education and consecutively without employment, the Belgian Defence assumes societal responsibility by contributing to a solution, at the same time fills a gap in its own recruitment policy, and improves diversity within the armed forces.

This study should provide a clear set of guidelines for job crafting within the NEET population and highlight the opportunities and pitfalls for the Belgian Defence with respect to this group.

The proposed model should also include the answers on specific questions regarding the cost-effectiveness of the inclusion of the NEET in the current recruitment, employment and retention policy of the Belgian Defence's DGHR.

First, this study should provide a clear set of answers about what the society aims to achieve with the NEET-group and what needs to be done in order to activate this group.

Secondly, the results of this study should indicate how the Defence department, in its societal role, could contribute to this and which cost-effective means should be used in order to reach this goal.

A third expected outcome is to investigate which role the Defence department could take in this employment model. This could lead to an adaptation of the recruitment campaigns, the selection standards, the education and training methods and the corporate culture in order to facilitate integration.

3.3.2. THEME 2 - SEHS: SMALL ENERGY HARVESTING SYSTEMS FOR BELGIAN DEFENCE APPLICATIONS

Context

As today's military energy solutions are still largely based on fossil fuels, it is important to start a transition towards a more sustainable eco-friendly approach.

The aim of SEHS is to capture directly available energy - be it radiant, mechanical or other forms of energy - and convert it into electrical energy.

In today's context of sustainability on the one hand, and respect for the environment and climatic imperatives on the other hand, small energy collection systems (or a combination of such systems) offer the advantage of increased autonomy, or even a self-sufficient source of energy for systems with modest energy needs. In military operations, such systems would offer promising prospects in a variety of fields, such as powering UAS's (Unmanned Aerial System), communication systems, portable electronic/electrical equipment, sensors in permanent active mode, contributing to the energy supply of a camp,...

Under specific circumstances, SEHS would offer an important added value. A good example are small (specialised) teams of 6 to 10 people carrying out isolated and independent operations, usually for an initially unknown length of time, in areas of operations characterised, inter alia, by austere conditions. Often it is very difficult (or even inadvisable) to call on local resources for their energy supply. Moreover, for various reasons, these teams may be unable to be resupplied on a regular and safe basis, as convoys transporting fossil fuels are extremely vulnerable to enemy attacks. This will be the focus scenario for this call.

Research scope

The applicants will therefore have to focus on the following aspects:

Main focus

- solutions for optimising energy collection according to the conditions of use (including storage, management and distribution);
- technologies offering the best performance for minimum weight and volume, high autonomy and maximum robustness, keeping them operational in the most austere environments given the conditions

characterising more specifically a use in military operations (wider temperature (standard -32°C/+52°C) and humidity ranges than for civilian use, potential shocks...);
- the SEHS should be able to be used as a power supply for existing systems (e.g. sensors, deployed communication infrastructure and devices, UAS (Unmanned Aerial System), GSM and smartphones, charging of batteries, portable battlefield surveillance radars, tethered UAS…)[3];
- optimisation of interoperability through standardisation of interfaces and power standards[3];
- the optimisation of the stability of the electrical power ranges to be delivered[3];
- maximum resistance to electromagnetic interference.

Circular economy aspects
- the use of non-polluting technologies wherever possible;
- recyclability of components with a shorter life span;
- minimal dependence on rare earth elements or materials.

Expected impact

The result for Defence should be the provision at least a technology demonstrator of SEHS, TRL 6 (technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies, to demonstrate working when outside the standard operating conditions of the same technology for common civilian use)) or higher, in compliance with the main objectives set out in the 'research scope' section.

In case of doubt of the ability to reach TRL 6, a motivated explanation has to be given.

The proposed solutions will offer a good compromise between improved energetic autonomy and operational flexibility / effectiveness. This will have to be demonstrated by using a scenario (to define in the project) representative for the type of activities described above and using factors such as:

- Increase in operational autonomy by increase of energy in quantity and availability, storage capacity, …
- Transportability (weight/volume/…)
- Usability for a broad range of equipment (as described above)

3.3.3. THEME 3 - SPACE: SPACE TECHNOLOGIES FOR DEFENCE APPLICATIONS

Context

The global space sector is undergoing rapid transformations. Due to the importance of its structures and services, new players are entering the space sector and it becomes more and more open to smaller, non-state actors. In order to remain one of the world's leading space actors, Europe and the European countries have to react and invest early into the most promising future technologies to generate the necessary breakthroughs. Belgium needs to find its place and its role in defining this bigger picture. Three capabilities are of particular importance for defence on the short term. Space systems are capable of delivering independence with regard to global positioning, surveillance and communications. Most of them being dual use technologies; the benefits for defence are evidently present and need to be researched further.

Belgian Defence has a history of satellite Imagery Intelligence since the recommendations of the Rwanda parliamentary commission to develop a strategic imagery capability. Since 1999, it has participated in the program HELIOS II together with France, Spain, Italy, Greece and Germany, co-running a constellation of 2 High-Resolution satellites. In order to exploit these sensors, the Belgian Satellite Center was created in Evere.

More recently, Belgian Defence has joined with the collaboration of BELSPO the 3-satellites French program Composante Spatiale Optique (CSO) with the aim to replace the existing HELIOS II constellation. The existing know-how and knowledge will be leveraged significantly with the new generation assets.

[3] Whenever necessary for the project, more details about the equipment used by Belgian Defence can be provided after the signing of the research contract and the signing of a non-disclosure agreement (NDA).

In order to complement these strategic military assets, Belgian Defence is also relying on the purchase, exchange and exploitation of various commercial sensors with partners like the European Union Satellite Sensor in Torrejon, or national sensors from allied countries like US or Luxembourg.

Research scope

The focus of this theme is on improved image analysis in the frame of earth observation.
Nowadays, earth observation satellites are equipped with a huge portfolio of different passive and/or active sensors spanning the optical, infrared and radar regions of the electromagnetic spectrum. Further evolution is expected from the development of new classes of sensors. Spatial, spectral, temporal and radiometric resolution is constantly improving. This raises the challenge of the efficient and timely exploitation of an increasing number of available images. The following research merits particular attention:

- exploitation of time series;
- fusion of different types of RS (Remote Sensing) imagery;
- automatisation of data processing e.g. using AI (Artificial Intelligence) techniques;
- pattern recognition & change detection;
- standardization;
- ….

Additionally improved estimation of uncertainty of the results is of major importance. All results need to be backed up with quality and reliability tests.

In general, the aim is to reduce the pressure on analysts and release them from dull and tedious tasks allowing them to focus on areas or infrastructures of particular interest for Security & Defence purposes.

Expected impact

Several factors are driving the need for an improved analysis throughput in order to cope with the rising operational demand. The multiplicity of sensors, the need for higher spectral and spatial resolutions, the shorter revisit times and the booming variety of operational use cases are pressuring the lower number of imagery analysts to eventually deliver within the shortest time actionable intelligence.

The main challenge in Space-Based Earth Observation (SBEO) is to enhance the throughput of downwards services delivery. Improving rapid access for users to adequate processed imagery and efficient exploitation of SBEO big data would considerably leverage the analysis output of reduced analyst manpower. The delivery of SBEO and geospatial services and data to users will remain the dominating factor throughout all planning horizons.

3.4. PROJECT DURATION

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

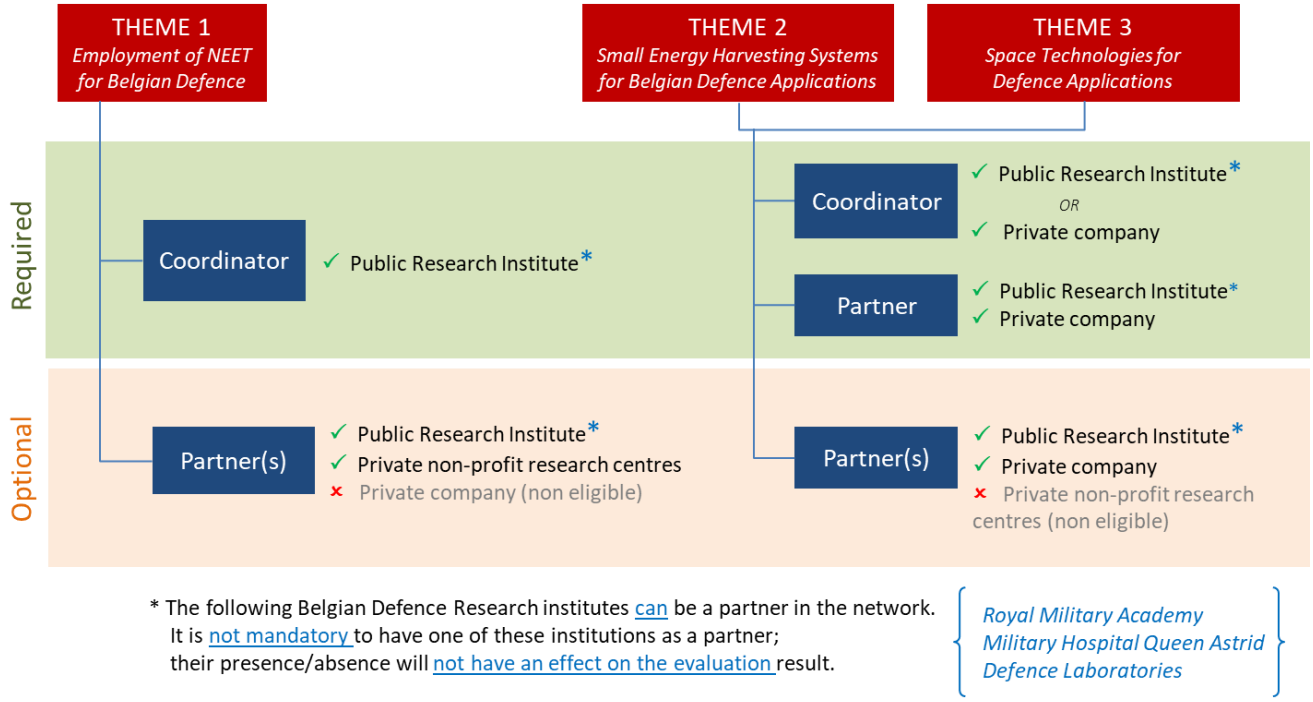
3.5. PROJECT PARTNERSHIP

3.5.1. PARTNERSHIP PER THEME

For **Theme 1-NEET**, proposals can be submitted **individually** or in a **network**. In both cases the proposal must be coordinated by a public research institute. Private non-profit research centres can only participate as a partner and cannot coordinate a project. Private companies are not eligible for this theme.

For **Theme 2-SEHS** and **Theme 3-SPACE**, proposals must be submitted by a **network** composed of **at least one public research institute** - receiving at least 10% of the project budget - **and one private company**. Both types of organisations can act as the coordinator. Private non-profit research centres are not eligible for these themes.

For the three themes, 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. 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).



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. If for the Theme 1-NEET, a project is submitted by one applicant, this applicant assumes the role of coordinator.

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

ROLE OF THE COORDINATOR

The coordinator is responsible for the overall project management and coordination. He/she shall:

- coordinate all activities to be carried out in the framework of the project;
- coordinate the internal meetings between the network members, if applicable;
- 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.

3.6. RESEARCH ETHICS

The first code of ethics for scientific research in Belgium was drawn up in 2009 (see http://www.belspo.be/belspo/organisation/publ/pub_ostc/Eth_code/ethcode_en.pdf).

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.

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%).

In the full proposal (section 6.5 Budget assessment) the total project budget cost should be detailed in the tables (100% cost). Lines are foreseen to indicate the partner contribution, depending on the partner type, and the subsequent RHID financing.

	Required Partners		Optional partners
THEME 1 PARTNERS	***Coordinator:*** **Public Research Institute**		**Public Research Institute** OR **Private non-profit research centre**
THEMES 2 & 3 PARTNERS	***Coordinator:*** **Public Research Institute** OR **Private Company**	***Partner:*** **Public Research Institute** OR **Private Company**	**Public Research Institute** OR **Private company**
TOTAL PARTNER BUDGET	**Public Research Institute**: 100% eligible costs financed by Defence **Private Company** : maximum of 65% of eligible costs financed by Defence, with a potential maximum of 80%, according to the size of the company (SME: +20% or 80% total threshold, MidCap: +10%)		**Public Research Institute** OR **Private non-profit research centre** : 100% financed by Defence **Private Company** : 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%)

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.

For persons not identified by name in the proposal, the staff costs are limited to a maximum amount of:

- 4 200 €/month FTE for a technician/bachelor (regardless of years of experience)
- 5 500 €/month FTE for a Master (regardless of years of experience)
- 6 500 €/month FTE for a Master in engineering (regardless of years of experience)
- 7 500 €/month FTE for a PhD (regardless of years of experience)

The RHID only accepts staff to be hired under a labour contract. Tax-free doctoral or post-doctoral scholarships are not accepted.

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	GENERAL OPERATING COSTS	SPECIFIC OPERATING COSTS	OVERHEADS	EQUIPMENT	SUBCONTRACTING
Project coordinator	4200€/month technician, 5500€/month master, 6500€/month master degree engineering, 7500€/month PhD	15% of the Staff costs (Automatically generated)	-	10% of [Staff costs + operation costs] (Automatically generated)	-	Max. 25% of the total budget of this partner
Other project partners	4200€/month technician, 5500€/month master, 6500€/month master degree engineering, 7500€/month PhD	10% of the 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 - especially for the Theme 1: NEET. For this theme, all statistics produced, collected and commissioned are, where appropriate, disaggregated by sex and gender indicators are established where relevant.

4. SUBMISSION PROCEDURE

The submisssion 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 **22 April 2021 (14h00).**
If the pre-proposal has not been submitted in time, it will be impossible to submit a full proposal.

The pre-proposal will contain:

- The title and acronym of the project
- The coordinates of the foreseen partner(s)
- A brief description of the intended project: the scope, objectives, the knowledge of the state of the art and innovative character, the relevance and potential impact for Defence of the project
- Relevant references of the partner(s) in relation to the project (maximum 10 per partner), incl. short profile of the foreseen partner(s)
- The name and contact details of 4-6 scientific experts (minimum 2 Belgian and 2 foreign experts) capable of assessing the proposal. See also document '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
- keywords (min 2 ; max 6)

The total length of the **pre-proposal** should not exceed **10 pages** format A4. Annexes may be added for clarification purposes, but not explicitly required information or documents will NOT be taken into account for the evaluation of the pre-proposal.

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

On **17 May 2021**, the internal evaluation committee will invite for each theme maximum five pre-proposals to submit a full proposal.

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

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 preferably remain the same since they are used for composing the evaluation panel.

4.2. PHASE 2 – FULL PROPOSAL

For each theme, maximum five pre-proposals will be invited to submit a full proposal. Applicants must submit the full proposal via the online DEFRA submission platform.

The **full proposal** must be submitted at the latest on **30 June 2021 (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 proposal template:

- The title, acronym and summary of the project
- The name and contact details of the project partner(s)
- The proposal description: scope, objectives, state of the art and innovative character, relevance and potential/expected impact for Defence, the quality of the partner/partnership of the project
- Methods and tools used
- The work plan
- The data management plan
- The project risk assessment
- Budget

As a separate form:

- The GANTT chart (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.

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

- the fitness of the pre-proposal with the scope of the call themes (quality of the pre-proposal, based on the description of the project objectives, the knowledge of the state of the art & the innovative character)
- the quality of the partner(s) and when applicable the composition 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	NEET	SEHS	SPACE
Quality of the pre-proposal	50%	40%	40%
Quality & Composition of the partner or the partnership	25%	30%	30%
Impact	25%	30%	30%

According to the scores obtained, the proposals will be ranked in a list (Pre-proposal Ranking). This list will serve as the base for the selection of the applicants invited to introduce a full proposal.

This evaluation will take place within four weeks after the submission of the pre-proposals. On **17 May 2021**, BELSPO will communicate the conclusions of the internal evaluation committee to the applicants and will invite for each theme maximum five 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 - Panel 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 the 3 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 2 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, BELSPO will compile the evaluation reports and produce 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 the applicants to be presented and discussed at the panel presentation (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.

Applicants will get access to an anonymised version of their definitive Consensus Report, in preparation of the panel presentation.

STEP 2 - PANEL EVALUATION, INCLUDING INTERVIEWS WITH THE APPLICANTS

Preparation of the panel 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	NEET	SEHS	SPACE
Scientific quality	40%	30%	30%
Quality and efficiency of the implementation	30%	35%	35%
Impact	30%	35%	35%

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.

Panel evaluation

For each theme, the panel will be composed of the members of the Scientific Expert Committee of Defence that is concerned by the theme, enlarged with a representative of BELSPO.

Each panel 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 panel.

Each panel will organise interviews[4] with the applicants of the full proposals according to the following schedule:

- Presentation of the proposal by the applicants, based on the questions in the Consensus Report (10 minutes)
- Questions and answers (Q&A) (20 minutes)
- Deliberation (10 minutes)

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

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

- Budget availability
- Complementarities and/or overlaps between proposals
- The coverage of the themes of the call
- The coherence of the proposals with the strategic objectives (scope) of the themes
- The composition of the partnership - if applicable

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

- Highly recommended for funding
- Recommended for funding
- Not recommended for funding

The panel may list the proposals within each category by order of preference for funding, or put them in alphabetic order within each category.

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

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 program (ranking and selection of research projects) and evaluates its implementation. The composition of the Scientific Committee is currently defined in the Ministerial Decree of 20 January 2014. The chairman, vice-chairmen and members are appointed by the Ministerial Decree.

The Scientific Committee will receive the following documents:

- Panel Funding Scenarios(s) of the corresponding theme – via email
- Document explaining the Panel Funding Scenario(s) of the corresponding theme – via email
- Consensus Report of each proposal – via the online DEFRA evaluation platform

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,

[4] Physical meeting if possible - online meeting if necessary. Detailed instructions to adequately prepare the panel presentation will be sent separately.

- 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
- In NO case will proposals deemed 'highly recommended for funding' be put aside (unless the Scientific Committee believes the proposal falls outside of the Defence priorities).

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 2021.

The project contracts will have a duration of maximum 2 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 Technical Annex to the contract will be drawn up in consultation between the funded partners of the selected proposals and the Belgian Defence/RHID. Recommendations formulated by the evaluators and the Scientific Committee will be taken into account when drafting the Technical Annex to the contract.

Adaptations to the original proposal may relate, among other things, to the content of the research, the composition of the project partnership or Steering Committee, the budget, the proposals for valorising the research.

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.

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 and the concerned domain manager of Defence. The intended end user of Belgian Defence can decide if they want to be represented in the Steering Committee.

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 meeting should take place in the same period as the delivery of the progress report.

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 program. 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: to be submitted in the middle of the project term;
- final report: to be submitted at 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 program.

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.

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/all partner(s) in the project 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.

Existing information and data (the individual background), ownership 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.

7.2. SPECIFIC CONDITIONS

For social and humanities data, a copy of the data and/or metadata can be transferred to SODA (Social Sciences Data Archive) (https://sodabelgianproject.wixsite.com/sodaproject) after explicit approval of RHID.

7.3. CLASSIFIED INFORMATION/SECURITY RELATED ACTIVITIES

For theme 1-NEET and 2-SEHS there are no specific security requirements.

For theme 3-SPACE certain activities may use or generate classified information. This paragraph solely concerns protective measures to be taken to preserve the confidentiality of security-sensitive information regarding research projects under this theme.

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 199 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 for this theme 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 certain 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 has to be in place at the latest before the signature of the contract and will be considered as an annexe to the contract.

More information can be found on the NVO website: https://www.nvoans.be/nl/private-ondernemingen/industriele-veiligheid

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

8. COMPLAINTS

Both BELSPO and RHID place great importance on the quality of their service and on improving the way they operates. 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