

Republic of Estonia
Ministry of Defence

**RESEARCH AND INNOVATION POLICY IN THE MINISTRY
OF DEFENCE'S FIELD OF GOVERNANCE**

2022

Introduction

The **main objective** of the Ministry of Defence's research and innovation policy is to support the development, planning, and execution of national defence. To achieve this, it will support government policy making and management decisions, provide solutions for deterrence, early warning, force generation and defence capabilities, support sustainable military science, and provide a platform for international activities, including outputs for the defence industry. The development of a mindset and organisational culture that supports science and innovation is essential.

The research and innovation policy of the Ministry of Defence is a sectoral framework document developed by analysing and considering the current situation in the relevant sectors and their strengths and development needs.

The foundations of Estonian security policy are what guide the research and innovation policy of the Ministry of Defence, the National Defence Development Plan, and the Ministry of Defence's strategic goals. Consistency with international and national research, development, and innovation strategies, which include the NATO Strategy for Science and Technology¹, the European Defence Research Fund's Strategic Guidelines for Research² and the Estonian Research and Development, Innovation and Entrepreneurship Development Plan 2021-2035³, has also been monitored.

The implementation of the Ministry of Defence's research and innovation policy is financed from the defence budget per allotment. Additionally, the involvement of external funding from the defence budget is encouraged, and separate accounts are kept for research and development and innovation expenditure. The main prerequisites for a research and innovation policy are the timely and accurate formulation of research questions, awareness of the opportunities and role of research and innovation policy, and corresponding research networks.

¹ Approved by the North Atlantic Council 27.07.2018 https://www.nato.int/nato_static_fl2014/assets/pdf/pdf_2018_07/20181107_180727-ST-strategy-eng.pdf

² Approved by Regulation (EC) No 2021/697 of the European Parliament and of the Council of 29.04.2021 on the creation of a European Defence Fund. <https://eur-lex.europa.eu/legal-content/ET/TXT/?uri=CELEX:32021R0697>

³ Approved by the Government of the Republic of Estonia 15.07.2021 <https://www.hm.ee/sites/default/files/htmtaiearengukavaa4web.pdf>

Objectives and indicators

In order to implement, achieve primary objectives, and increase policy impact, the following objectives have been set, and activities and metrics have been established for research, development⁴ and innovation⁵.

Objective 1: Implementation of research and innovation policies to meet the strategic objectives of the area of governance.

Knowledge-based policy making, based on data analysis, peer review and research, is essential to the policy development of the eight strategic objectives and core activities of the Ministry of Defence. Understanding the relationships between variables and the current situation is necessary to influence performance indicators in a desired direction. The role of research and innovation policy is not only to test, confirm or disprove existing understandings, but also to find and use new and bold solutions. Activities related to the objective:

- Research that supports the identification of core challenges (relating to the current situation, baselines, linkages) at different levels of governance.
- Carrying out governance-related research that is based on scientific methods while providing innovative solutions.

Indicators	Baselevel (2021)	Target level	
		2025	2030
Proportion of research and development policy funds directly targeted at the strategic objectives of the policy area as a share of total research and innovation policy funds.	The objectives were confirmed in the year 2022	60%	80%
Satisfaction with the contribution of research and development in supporting policy making and management decisions.	Based on research conducted in 2022	+10% compared to the baselevel	+10% compared to 2025

⁴ **Research and development** - as defined in the OECD Frascati Manual (2015), it is a systematic, creative activity aimed at increasing the stock of knowledge and using that knowledge to find new applications; it includes three types of activities (basic research, applied research and experimental development), which must meet five basic principles (novel, creative, systematic, with an uncertain outcome, transferable and/or replicable).

⁵ **Innovation** - as defined in the OECD Oslo Manual (2018), is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process).

Objective 2: Solutions in the field of deterrence, early warning, force generation and defence capabilities

One of the research and development objectives is to support the transformation of force to be faster and more effective, to surprise the opponent through innovative solutions, and to speed up the flow of information and analysis. Activities related to the objective:

- Research and development activities will focus on the development of advanced and new technologies, the prototypes of which will be integrated into military units at an early stage.
- Impact assessments support the feasibility, robustness and continuity of existing systems and systems under development or planned for development.
- Operational and resource management analyses are capability-driven and provide qualitative support for defence planning.
- In order to deploy new technologies, testing and development activities are carried out within military units (experimental capabilities test programme).
- The assessment of military units' readiness and the competencies required to perform their essential wartime tasks is based on scientific methods.

Indicators	Baselevel (2021)	Target level	
		2025	2030
Number of new research and development projects per year related to improving force generation	3	5	8
Satisfaction with research and development contributions to solutions	Based on research conducted in 2022	+10% compared to the baselevel	+10% compared to 2025

Objective 3: Supporting the sustainability of Military Sciences

The specificity of the military sciences calls for long-term competence-building, in which progress will be made by setting up joint research teams with civil scientists and companies. In order to increase research capacity and research output, research directions will be effectively oriented, doctoral studies will be promoted, and research-based military education will be developed. Activities related to the objective are as follows:

- Carrying out research and development projects in cooperation with universities and research and development institutions.
- The development of the Operational Doctoral Programme and Joint Doctoral Programme in Military Sciences.
- International evaluation of research outputs as well as the establishment of a centre of excellence in electronic warfare.

Indicators	Baselevel (2021)	Target level	
		2025	2030
Proportion of high-level scientific publications in the government sector (%) / Research impact indicator of government research staff (average per employee).	54 / 2,2	60 / 3,2	60 / 4,0
The Estonian Military Academy is an internationally evaluated and recognised research institution in at least one scientific discipline.	NO	YES	YES
A joint doctoral programme in Military Sciences is open	NO	NO	YES
Number of active military personnel (cumulative) who have obtained a doctoral degree within the framework of the PhD programme of the Defence Forces.	2	6	12

Objective 4: Platform for international activities, including output for the defence industry

International research cooperation and interoperability with allies will ensure greater potential for developing new solutions, support the development of defence industries, allow participation in restricted research projects and access to new research results from other states. Activities related to this objective are as follows:

- Development of centres of excellence in cyber, electronic warfare, war and disaster medicine for training, research, and field experiments in Estonia and in cooperation with allies (e.g. in the framework of NATO DIANA).
- Applying for external funding to support research and development and cooperation with research and development institutions and companies.
- Participation in EU (European Defence Fund) and NATO research cooperation to boost research, development and innovation and support for the defence industry.

Indicators	Baselevel (2021)	Target level	
		2025	2030
Share of external research and development funding from the defence budget (%)	17	35	40
Number of international research and development projects involving universities and/or companies (cumulative)	3	5	8

Governance structure and tasks

The implementation of the Ministry of Defence's research and innovation policy is managed and coordinated by the Ministry of Defence and the Ministry of Defence's Research and Development Commission.

The main task of the **Research and Development Commission of the Ministry of Defence** is to guide the implementation of research and innovation policy. The Commission for Research and Development makes consolidated proposals for priority research areas and identifies those responsible. The Commission prepares and updates the National Defence Development Plan and other planning guidance in the research and development subsectors. The Research and Development Committee shapes, where appropriate, the government's positions in developing national research and development and innovation strategies and policies. The Minister shall approve the composition, tasks, and rules of procedure of the Research and Development Committee by decree.

The roles and responsibilities of the institutions of the Ministry of Defence in the implementation of research and innovation policy are defined in Annex 1. Each institution has designated responsible oversight for each area.

The Research and Development Agency of the Ministry of Defence is the Estonian Military Academy. The development plan of the Estonian Military Academy is prepared and approved following the Higher Education Act.

An annual report on the year's results will be produced for the Ministry of Defence's research and innovation policy. Longer-term summaries of the implementation of the policy objectives will be carried out in 2025 and 2030 in cooperation with the Ministry of Defence's partners. The research and innovation policy will be renewed in collaboration with stakeholders as appropriate.

Annex 1: Roles of the institutions under the Ministry of Defence's area of governance

The tasks related to research and innovation policy are distributed among the institutions of the Ministry of Defence as follows:

Ministry of Defence

- a. guides and manages the implementation of research and innovation policy, supporting cross- and inter-governmental cooperation in this field;
- b. manages Estonia's participation in international defence research and development (e.g. participation in the NATO Science and Technology Council);
- c. coordinates cross-sectoral and inter-governmental cooperation on research projects funded with public support;
- d. coordinates the budgeting and use of resources needed to implement research and innovation policy;
- e. ensure coherence between research and innovation policy and defence industry policy;
- f. supports and coordinates strategic studies related to the non-military part of the National Defence Development Plan;
- g. supports and coordinates development projects to increase the competitiveness of the Estonian defence industry;
- h. monitors the implementation of research and innovation policy;
- i. coordinates the implementation of research and innovation policy with other public authorities and partners;
- j. organises research, development, and innovation in defence within its governance and intellectual property protection areas.

Estonian Defence Forces

- a. link research and development and innovation to defence planning and provide capacity gap-based input to defence research and development;
- b. analyse and, where possible, staff the position of Chief Scientist in the Defence Forces;
- c. participate in research and development activities related to the military component of the National Defence Development Plan;
- d. apply the results of defence research and development to military capability development and decision-making;
- e. support partners with military know-how and infrastructure;
- f. test the intermediate and final results of defence research and development activities and defence industry products according to cooperation agreements;
- g. hold and share information on military developments with partners;

incl. the Estonian National Defence College

- h. coordinates and manages research and development activities related to the needs of the Defence Forces;
- i. oversees the development and maintenance of the Defence Forces' research areas and contributes to increasing their international visibility;
- j. participates in national and international cooperation in support of military capability development and expanding Estonia's research influence;
- k. coordinates Estonia's participation in NATO's science and technology programmes;
- l. coordinates the involvement of the Defence Forces in EU research and development programmes;
- m. organises doctoral studies for active military personnel and, from 2028, doctoral studies in military sciences as a joint curriculum;

- n. publishes the internationally peer-reviewed scientific journal *Sõjateadlane* (Estonian Journal of Military Studies)
- o. manages the development and research activities of the Electronic Warfare Centre of Excellence;
- p. supports the promotion of military terminology;

Republic of Estonia Centre for Defence Investment

- a. participates in the preparation and implementation of designated international projects (e.g. the European Defence Fund) to support the armed forces and promote the defence industry;
- b. participates in product development and impact assessment research and development projects related to procurement procedures;
- c. supports partners with sectoral expertise where possible.

Estonian Defence League

- a. participates in research and development activities in the field of defence by establishing a network of specialists to support the identification of capability gaps and the development and implementation of innovative solutions;
- b. implements defence research and development activities in support of Estonia's national defence and military capability development;
- c. where possible, support partners with sectoral and/or military expertise and infrastructure;
- d. holds and shares information with partners on the broad concept of defence, the sphere of defence and military developments;
- e. participates in the testing of defence research and development milestones and deliverables and defence industrial products, according to cooperation agreements;
- f. participates in NATO Science and Technology Organisation programmes on an as-needed basis;
- g. participates in EU research and development programmes on an as-needed basis.

Estonian War Museum – General Laidoner’s museum

- a. develops and maintains the discipline of military history and contributes to its visibility;
- b. supports education and training related to research and development in its field;
- c. partakes in national and international cooperation in the study of military history;
- d. participates in NATO Science and Technology Organisation programmes on an as-needed basis;
- e. participates in EU research and development programmes on an as-needed basis.

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- a. develops, maintains and contributes to the international visibility of cybersecurity and cyber-technologies research;
- b. cooperates nationally and internationally with relevant partners;
- c. supports partners with sectoral know-how and infrastructure;
- d. supports research and development exercises and training in its field;
- e. participates in NATO Science and Technology Organisation programmes on an as-needed basis;
- f. participates in EU research and development programmes on an as-needed basis.