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# SCIENTIFIC RESEARCH IN AUSTRIAN SECURITY STRATEGIES AND RESEARCH ON SECURITY AND DEFENCE

## INTRODUCTION

The challenges faced by the EU in the middle of the past decade originated within and outside of the EU. In the international environment, these were progressive instability and conflicts as well as new multi-faceted threats. The asymmetry of relations between states in terms of potentials and institutional multilateralism in international relations were also noticed, as well as an increase in dependence on international disproportions. The pool of these concerns is finalised by the crisis of democracy, the development of protectionism and progressive isolationism. In the light of the position of the European Parliament at the time, the existing order was questioned, which poses a threat to institutions and societies. These challenges turned out to be too great and complex for individual states, and there has been security instability adversely affecting the EU. The internal weaknesses of the EU then indicated at:

- lack of cooperation between countries (over 80% of procurement and 90% of scientific and technical research took place at the national level);
- ineffective spending of public funds, duplication of activities and differentiation of the defense spending levels between EU countries;
- the existence of different weapon systems in the EU
- unfavorable demographic processes (*Utworzenie Europejskiego...*, 2017: 2–3).

The analysis carried out many years later – in autumn 2020 as part of the Strategic Compass, formed the view about the existence of intensified geopolitical competition, the weakening of the world order based on rules, and about the transformations of multilateralism (Anderte, 2021: 19–20; Bąchora, 2022: 31–35). Official documents of the Austrian government indicated the growing dependence of the economy and society on technical infrastructure, which required continuous research (e.g. cybersecurity). New techniques (materials science and technologies) lead to new threats, but at the same time open up new perspectives – and Austria sees them as an opportunity on the path to its own development and integration within the EU. The development of human competences in the areas of technology and security also requires coordinated research efforts, which had to be strengthened through European partnerships. Here, too, Austria has developed a national research program to promote its own economy, technology and cooperation. It is also intended to support the Austrian defense and civilian economy as a coherent part of the EU's research, technology and economic

structures (*Österreichische Strategie...*, 2018: 5; *Europäische...*, 2019: 38–39; Frank, 2021: 18–23).

This text is based in particular on primary literature, which includes documents of EU institutions, Austrian security and defense strategies, and statements of the Ministry of Defense. It is complemented by specialist items, especially those relating to the national research, technology and innovation system. This publication is an attempt to answer the question of how Austria made the effort to integrate security and defense issues with the national research-technology-innovation system (Forschung-Technologie-Innovation, hereinafter FTI), with the specificity of the domestic industry dominated by small and medium-sized enterprises.

This paper is based on the analysis of documents including the selection, description and scientific interpretation of key EU and Austrian positions. The key benefit of this is the definition of sectoral goals and policies, *raison d'état* and national security. It also includes a relatively new element: the incorporation of scientific research into them, as it is crucial for ensuring competitive advantages and strategic security. The aim of the research is to analyze and understand the role of research in the concept of (national) security in Austria and to link – through science and technology – with the EU's security and defense policy. Research and this publication verify the assumption that security and strategic autonomy of the EU / Member States require integrated solutions (Europeanization process). This is due to the change in the specificity of threats and the role that the EU intends to play in international relations. Going beyond the soft impact towards hard instruments requires a knowledge-based development and synergies of coherent strategies, technologies and research.

## EU POSITION AND INITIATIVES

Successive crises in Europe and Europe's immediate environment confirm the legitimacy of the Common Security and Defense Policy (CSDP). The European Council, in its note of December 2013 on CSDP, spoke of the need to intensify research and technological-industrial cooperation (EDTIB – European Defense Technological and Industrial Base), which laid the foundations for European security research (*Nowy ład...*, 2014: 2–12). The issue of EU security was fully present at the meeting of representatives of 27 European countries held in Bratislava in 2016 (*Bratislava Declaration...*, 2016: 3–5).<sup>1</sup> There, the attempt was made to diagnose and set goals for the future suggesting that we are concentrating on peace, democracy and the security of citizens. This view was shared by the then President of the European Commission, Jean-Claude Juncker, in his State of the Union address (2016) (*European Action Plan...*, 2016: 2–3). He pointed the need for greater EU responsibility for its own

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<sup>1</sup> Recognizing (Bratislava 2016) the then geopolitical situation as difficult, it was postulated to improve cooperation in the field of internal and external security – on the basis of both treaty provisions and the joint EU-NATO declaration. The enhancement of cooperation and information exchange, the introduction of the necessary measures at the EU's external border, border management control (ETIAS) were to contribute to the improvement of internal and external security, to protect against radicalism and terrorism.

security, which meant the need for investment and expenditure in defense. The Union should provide soft and hard security.

In 2016 EU Global Strategy (EUGS) and the European Defense Action Plan (Europäischer Verteidigungs-Aktionsplan, EDAP) were issued by the EC. They emphasized the importance of research and technology. Within them, and in conjunction with the European Defense Fund (Europäischer Verteidigungsfonds – EVF), new moves and structural transformations have been proposed. EVF became the focal point with transfer of knowledge and technology, in which the area of security research is to be reflected (*Österreichische Strategie...*, 2018: 3–4).

The EU Global Strategy for foreign affairs and security policy (the so-called global strategy) pointed to many important issues of a military nature, but at the same time also indicated the fragmentation and modest industrial cooperation and the need for more effective investment of public funds in the technical base. The competitiveness and innovation of the defense industry and its positive impact on the public sector, entrepreneurship, transfer of know-how and job creation in advanced industries were considered as the key to success.

The transfer of selected issues of the defense industry and the security sector to the European Community level was intended to eliminate the duplication of national expenditures, to eliminate the existing technological gaps, and to overcome market fragmentation. Reducing unit costs is aimed at development of investments, “creating a new generation of critical defense capabilities.” The final goal – which was later reiterated many times – was the strategic autonomy of the EU and the “security guarantee.”

This new subsidiary approach to defense policy and industry means taking into account the programs and guarantees of governments, sound and sustainable financing, as well as own position towards the major international powers (*European Action Plan...*, 2016: 4).<sup>2</sup> The developed EU strategies and programs did not replace national investments in the security and defense sector, but were only strengthening, consolidating and integrating them (*W kierunku...*, 2013). The role of public support is to bear / cover investment risk, and to include SMEs – to treat the economy in an integrated manner (production, financing and transfer chain) (*Utworzenie Europejskiego Funduszu...*, 2017: 7.15).<sup>3</sup> The aim of the program – according to the proposers – was to increase the competitiveness of the defense industry by promoting cooperation and launching permanent lines of support and financing of research, technologies and defense equipment. The planned research was to focus on the development of

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<sup>2</sup> Announcement that defense expenditure of the EU-27 countries decreased by almost 11% between 2005 and 2015 reaching the value of EUR 200 billion, while the share of this type of expenditure stopped at 1.4% in 2015. Defense budgets in this period have dropped in real terms. Only four countries from the 28-EU member states fulfilled the expenditure levels as agreed by NATO (2% of GDP – Estonia, Greece, Poland, Great Britain). In 2015, the US allocated more funds to defense budget than all EU countries together.

<sup>3</sup> Aid to SMEs and mid-caps also aims to help bridge the gap between research and development. For this purpose, the European Investment Fund (EIF), national / regional promotional banks should be consulted. In order to strengthen economic, social and territorial cohesion, the use of the European Regional Development Fund was planned, which may be of particular benefit to smart specializations.

defense-related technologies and products in key areas. The prevailing belief was that breakthrough research strengthened the technological advantage of continental industry. Today, it is seen as the first European defense kit with three important dimensions: the creation of the European Defense Fund; promoting investment in defense supply chains and strengthening the single market in defense equipment.

From this perspective, it is worth emphasizing the enhancement of synergies between the public and military sectors, the use of the European Defense Agency (EDA) and the separation of two funding divisions within the EDF (European Defence Fund), ie research and “defense capabilities.” The research financing division was assigned to finance cooperative projects to create a special research program in the field of defense. The planned budget (EUR 90 million for 2017–2019, EUR 500 million per year after 2020) was to guarantee the emergence of innovative technologies, products and services in order to ultimately contribute to the long-term competitiveness of the defense industry and to maintain strategic autonomy by the EU. In 2017, initiatives on European cooperation in the defense industry were approved. A year later (18/7/2018), the regulation establishing the European Defense Industry Development Program was adopted. The European Commission approved (13/6/2018) the proposal for a regulation establishing the EDF for the 2021–2027 financial framework, with a proposed budget of EUR 13 billion to support defense research and development projects. With these actions, the European Commission confirmed the need to extend defense cooperation between the Member States (*Zawiadomienie Komisji...*, 2019), in order to secure the role of a full-fledged political and economic power in international relations, and thus contribute to shaping the global order. European foreign and security policy – the European Parliament emphasises (*Sprawozdanie roczne...*, 2018) – must be based on strategic autonomy and integration, on eliminating the “national egoisms for the sake of becoming a global player.” Therefore, the Member States and the EU should act in a strategic and integrated manner, using a wide range of tools (including military, public communication, diplomacy, trade, development and diplomatic tools). The strengthening of geopolitical influence will lead to an increase in economic sovereignty and strategic autonomy. Thus, tools of soft and hard power, used for the development of a strong defense industry that would strengthen the technological independence of the entire EU.

With the creation of the “European Defense Industry Development Program,” the European Parliament saw an opportunity to support the competitiveness and innovation of the industry, develop new products and technologies, promote consortia involving SMEs and mid-cap companies, and finally integrate research centers from different countries. Ultimately, this was to lead to an improvement in the strategic autonomy of the EU and the European defense technological and industrial base (EDTIB) (*Sprawozdanie roczne...*, 2018).<sup>4</sup>

The weaknesses of the EU in the area of security were mainly seen in three reasons:

- a) the lack of political will of the Member States,
- b) the specificity of investing in hard skills,
- c) providing / giving the resources of the Member States for the disposal of the EU.

<sup>4</sup> The creation of the European Defense Fund was welcomed, the importance of the EDA as the EU’s executive agency was emphasized, the implementation of PESCO was appreciated as well as the need for coordination between: PESCO, CSDP, NATO, CARD.

For some time The EU has pursued a more dynamic external and security policy through the prism of the development of its own instruments, following risk analyzes and the subsequent strategic compass (17/06/2020). This compass provides perspectives but also allows the EU to better position itself in the world. The target point in this respect is strategic autonomy, and its condition is to strengthen readiness and ability to act (Fiott, 2021a: 44).<sup>5</sup>

The concept of strategic autonomy appeared in the EU circulation in 2016, and in Austria three years earlier. The EU institutions understand it purely functionally as the ability to act independently with or without the participation of partners. But at the same time, the dynamic nature of this concept is emphasized, which in the changing nature of politics can be summarised in the slogan “yes, we can.” The EU combines the political aspects of strategic autonomy<sup>6</sup> with technical and institutional-process, in order to better respond to geopolitical challenges and emphasize its presence in international relations. The Union does not see security through autonomy as contradictory with security through cooperation. The problems are of a cross-border nature and such solutions should be sought (Kammel, 2021: 8–13; *OpEd...*, 2021: 32–33; Fiott, 2021b: 237–241).

The answer to the above challenges was the proposal of the multiannual financial framework, which the European Commission presented in May 2018. For the first time in the history of the EU, Security & Defense was included with two points the European Defense Fund (EDF) and Military Mobility. EUR 13 billion was planned for the EDF, while the framework contained planned activities through the prism of: the “research window” with the European Defense Research Program (EDRP); the “capability window” with the Europäischer Programm zur industriellen Entwicklung im Verteidigungsbereich (EDIDP) and the Financial Toolbox.

At the same time, the European Commission proposed a research budget with financial guarantees of at least EUR 500 million a year, and for EDIDP an annual budget of EUR 1 billion for co-financing development projects. In addition, the European Defense Action Plan (EDAP) focuses on supporting cross-border supply chains, for the internal market of security sector goods, and the use of synergies between the civil and military areas. These initiatives are treated as historic due to the development of a comprehensive defense support program covering the research and development component with EU public procurement (and funds) (Kunasek, 2018: 3–4). As a complement to European Value Fund – EVF (and under EDAP), steps were proposed to expand the supply mechanism, strengthen the internal market for security goods and increase the synergy effect of civil and military spheres to stimulate dual-use-research

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<sup>5</sup> The strategic compass is expected to allow the full application of all available instruments at EU level that can be used for security and defense purposes. It is also an opportunity to synchronize initiatives (eg CARD, PESCO, EDF). A compass can help define the EU as a military-type entity.

<sup>6</sup> Strategic autonomy applies to NATO, but does not exclude it as an organization. Co-operative orientation means making use of this alliance. At the same time, it is important to recognize the fact that improving the security capacity of the EU (states) serves NATO itself. The functioning definition of strategic sovereignty was presented by France in January 2021 in connection with the assumption of the presidency of the EU Council. The concept of strategic sovereignty was included in the coalition agreement of the new federal government of Germany.

(*Österreichischer Forschungs...*, 2021: 84–86).<sup>7</sup> As part of these plans, the European Commission proposed financial instruments (ESIF, COSME, ESF, EIB<sup>8</sup>).

In 2019 the agenda for 2019–2024 was approved as part of developments of the common defense and security policy. It was based on the Strategic Compass threat analyzes- increasing readiness/ability to act independently, and included greater responsibility with higher expenses (Anderte, 2012: 16–20). It also became the beginning of considering security issues and, in this respect, a form of defense strategy. Importantly, European countries have started to deal with this issue in a collective manner, and that defence sector is treated as the EU internal market. NATO is expected to act in line with EU competences (NATO summit in Brussels in June 2021). The literature on the subject emphasizes that the EU has the right to expect who, and to what extent, acts and invests in EU. It is also recognized that NATO's allies are exerting economic pressure within the EU and on individual countries. In this case, the EU should be the primary actor in building its resilience (Biscop, 2021: 24–26).

To achieve this, the EU needs to make up for significant neglect of defense research, technology and innovation, and to reduce strategic and asymmetric dependence on external actors. In conclusion, there is a need to invest in research and technological innovation, as well as to identify key areas of importance (Costa, 2021: 32, 36). After unsuccessful attempts initiated in 2016 with the EUGS and some progress on PESCO, the EDF marks a turning point in the EU's defense industrial policy with research and technology investments. The initiated steps were successful because – as indicated in the report for 2021 – Member States are constantly introducing new research and development projects related to key and technologically advanced areas (e.g. artificial intelligence, robotics, automation, electronic components) to the EDA. At the same time, the synergy of dual-use products is looked after. In the same year, work was started on cross-cutting areas (e.g. strategic energy and space research programs) (*Joint Research...*, 2022: 14–15).<sup>9</sup>

## AUSTRIA – PROGRAMS AND STRATEGIES

In its National Reform Programs Austria takes into account scientific research in conjunction with European goals (Polt, Peneder, Prem, 2021: 2–16). Traditionally, they are implemented within the walls of universities, research institutions, and the private sector with the help of specialized niche organisations. Under FTI-Strategies 2020,

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<sup>7</sup> A new solution in Horizon Europe is the European Defense Fund Program with a budget of EUR 8 billion, dedicated to the security sector, its technological and industrial facilities. This new aspect is beneficial for Austria as it allows it to participate in security research and development projects.

<sup>8</sup> ESIF – Europäischer Struktur- und Investitionsfonds; COSME – Wettbewerbsfonds; ESF – Europäischer Sozialfonds; EIB – Europäischer Investitionsbank.

<sup>9</sup> At the end of 2021 EDA's operational budget was EUR 203 million, ad hoc capacity and research and technology – EUR 137 million, general and support activities – EUR 42 million. Member States' contribution to ongoing capacity and research / technology programs and projects: budget 29 million; industry contribution – over 46 million; contribution in kind – 49 million; industry contribution in kind – more than EUR 25 million.

it committed itself to rising R&D expenditure to 3.76% of GDP as being one of the high research-intensive countries. Recognizes the need for initiatives based on clusters of excellence to create new research areas with high innovation potential. NDP 2021 on research and innovation (following the FTI-Strategies 2030), in pursuit of research efficiency and excellence, intended to focus, inter alia, on the multilateral transfer of knowledge, on the expansion of research infrastructure and on stimulating small and medium-sized enterprises (*Nationales Reformprogramm*, 2020..., 2020: 40–42; *Nationales Reformprogramm*, 2021..., 2021: 78–81). Technological sovereignty and systemic resilience was made – to some extent – an end goal, and the Austrian approach to technological sovereignty was introduced by the Research and Technology Development Council (Rat für Forschung und Technologieentwicklung) in its position from 2021, and it was regarded as the ability of a state or an association of states to maintain themselves and developing technologies that are considered fundamental to, or to acquire, the prosperity, competitive ability and functioning of states without a unilateral structural dependence on other economic areas. Key technologies fulfill three principal tasks:

- a) ensure the sovereignty of tasks;
- a) satisfy social needs;
- b) they ensure competitiveness.

Technological sovereignty in the above dimensions can be achieved in various ways and, of course, must take into account the current situation in the international distribution of resources, labor and service development. The position of RFTE should be seen both as a subsidiary voice of an important institution in the discussion on the priorities and development of the Austrian FTI and the national economy. It is argued that technological sovereignty:

- a) requires a strategic approach to globalization, not rejection of it;
- a) can also be achieved through the development of technology abroad;
- b) is data / digital independence (sovereignty);
- c) requires autonomy (sovereignty) in terms of resources;
- d) stands for technology-based resilience to impending crises;
- e) is a security policy issue;
- f) requires a broad, coordinated policy mix;
- g) requires careful consideration of the possibilities and risks of near-shoring/back-shoring;
- h) requires well-functioning and crisis-resilient international and domestic technology transfer channels;
- i) requires a technology-aware education policy (*Neujahrsempfang...*, 2021: 2–8).

The issue of security has found its place in the program of the Austrian federal government for 2020–2024, in which several parts focus on the issues of: integration, foreign policy, development cooperation, migration and asylum policy (part no. 4. Europa Integration, Migration & Sicherheit). Science and research in connection with digitization (part 6) emphasize the need for their sustainable financial security, support for the implementation of FTI-Strategie 2030, strengthening basic research through initiatives of excellence, integrated multi-directional knowledge transfer in a way that allows Austria to participate in European projects (e.g. in the European Defense Fund)

(*Aus Verantwortung...*, 2020: 3.40-41.217-218; *Zusammen...*, 2017: 29). The recent years in the development of the national FTI system have been positive, they have allowed it to develop institutionally and to professionalize the management of knowledge and scientific research. At the same time, they revealed the need to shape it in such a way that it would be flexible in relation to new needs and development requirements. In a broader – European perspective – it should support the path leading to innovative domination. In these conditions, research areas of particular importance for the armed forces had to be selected. In the White Book 2012, twenty such areas were identified, relating, inter alia, to: the potential of the armed forces, development capabilities, education and management systems, operational research, modeling and simulation, systems and automation, weapons, surveillance systems. Also at that time, the proper securing of financial resources and the use of the synergy effect gained support (*Weißbuch...*, 2013: 4–5, 60–62).<sup>10</sup>

The Austrian Security Strategy (2013) (*Österreichische Sicherheitsstrategie...*, 2013: 18–24) indicated the need to continue research on security. At that time, special importance was attached to the cooperation and networking of important organizations and institutions in the country and beyond. The need to evaluate and restructure beyond university security policy research was expressed. As part of internal security, Austria has focused on strengthening of research and the knowledge management component as well as networking of the centers. In the international crisis management part, the need to expand cross-border cooperation (especially the European Defense Agency) in the field of research, procurement, education and capacity building was emphasized.

The Partial Defense Policy Strategy (Teilstrategie Verteidigungspolitik 2014) (*Teilstrategie Verteidigungspolitik*, 2014: 15–29), published in 2014, emphasized the importance of the armed forces' ability to innovate, strengthening the above-mentioned findings. Therefore, the National Security Research Program run by the federal ministry and with the involvement of EU programs / agencies should meet the important future needs of the Austrian military. New technologies and their application are of key importance, hence the indicated need for the expansion of cooperation between institutions, new models of cooperation with industry and the economy. In order to ensure the best outcome and adaptability, innovation and development of public procurement, it was considered necessary to establish a modern political and defense management mechanism in Austria, taking into account three elements: analysis of the environment and scenarios of its changes; developing a security policy with a development perspective; portfolio management based on resources and international position, taking into account sector and regional policies, security research.

In the part relating to the principles of the development of the armed forces, it was emphasized that in order to solve tasks in a comprehensive manner, using technological innovations and security research, the armed forces must be developed in the paradigm of a knowledge-focused and learning organization. And the defense policy itself must take into account the regulation of the basic problems of specific policies: information, communication, education and research.

<sup>10</sup> The synergy effects were to strengthen the then initiatives related to: KIRAS projects, Europäische Verteidigungsagentur (EVA) and NATO cooperation. Austria participated in a research cooperation carried out under the EVA (eg Joint Investment Program Force Protection).



The above goals are reiterated in the *Militärstrategisches Konzept – 2017 (Militärstrategisches Konzept, 2017: 10–31)*, including the importance to develop cooperation, potential for cooperation, research on defense, education and skills for the purposes of interoperability with civil and military partners. To achieve these goals, Austria needed a high degree of innovation and adaptability, and these were associated with modern technologies and defense research. Their development would take place both through their own and international institutions. The demand for procurement-driven research had to be met through extensive targeted analysis and the provision of the necessary resources. The long-term priorities in the development of the armed forces were:

- “ability of strategic anticipation, early diagnosis, active cooperation in security research within the national framework”;
- ensuring the proper (acquisition) of personnel and its quantitative and qualitative development.

At the national level, the FORTE Research program was created in the second half of 2018, and it aimed at helping Austria to develop its potential, support research centers and build research capacity as well as innovation and, consequently, introduce security studies to the systemically implemented FTI-Politik. It was obvious that Austria needed to harness the influence and involvement of domestic enterprises, in addition to developing its own thematic research strategy and integrate it with the EU research system and infrastructure. The Austrian Government Program (*Das österreichische Regierungsprogramm*) envisaged the maintenance and strengthening of its own military defense capabilities, because the army should conduct research on defense to be able to fulfill its defence tasks (*Österreichische Strategie, 2018: 3–4*).

## AUSTRIAN RESEARCH STRATEGY ON EU DEFENSE APPROACH

The 2018 EU processes prompted Austria to develop the EU Defense Research Strategy (*Österreichische Strategie zur EU Verteidigungsforschung*) with aim to better serve socio-economic and technological goals by taking into account systemic conditions. It has created favorable conditions for Austrian companies and research centers to successfully participate in future funding bids (eg EDF). Through active involvement in European ventures, Austria develops technological competences to meet current challenges and address new threats (Kunasek, 2018: 4), as new technologies help to ensure security. Research and development as well as synergy with European partners are of key importance to her. For Austria this was to lead to a change in the structure of research on security, and indirectly in health sciences and education; affect the competitiveness of the economy (technological spillover-effect for public benefit). The specificity of Austria in terms of know-how was the defense industry enterprises from several sectors, their good links and networking. Austria was successful in obtaining EU funds in technical fields and was well supported by the national FTI system, despite it not being well integrated with defense. Security studies as well as good thematic national and international cooperation were an unquestionable advantage.<sup>11</sup> Opportu-

<sup>11</sup> The strategy also indicates weaknesses of Austria, which, however, thanks to a systemic approach, should be overcome. These are: the slower pace of systemic adaptation and the shortage of

nities for further development were seen in new EU funding at the national level, in new international security challenges that will allow Austria to improve its research competences and modern technologies (*Österreichische Strategie...*, 2018: 6–8).

In Austria's defense technology industry, over 100 mainly small and medium-sized companies with an annual turnover of 2.5 billion euros employed over 11,000 direct employees and 20 thousand indirect one. In addition, numerous start-ups are involved. The specificity and a particular problem was the fragmentation of the research and economy sector, but nevertheless Austria indicated the areas in which it sustained research and technological competence and had scientific institutions, technology companies (*Österreichische Strategie...*, 2018: 6–7). With this in mind, EDIDP was expected to have a positive impact on the economy and employment, in particular on R&D and industrial competitiveness. The positive impact on FTI and the research and defense industry was to continue thanks to the EU money from EVF.<sup>12</sup>

In terms of research, Austria is dominated by centers located in universities and cooperating research institutions, in small and medium-sized enterprises. International companies are also active in the areas listed below, and the cooperation is described as effective. The areas of defense in which Austria has a strong position are: communication, information and network systems; radio engineering and sensing technologies; ABC and radiological weapons, robotics; land systems – ground platforms, mobility, battlefield support, mission systems; optoelectronics; technologies of ammunition and weapons; components and supply networks; aviation systems; soldier systems (soldier's equipment) (*Österreichische Strategie...*, 2018: 6–7).

By actively participating in European security research, Austria – through implementing its vision – aims at technological progress that meets the requirements, fills competence gaps, and also takes into account new conflicts and threats (*Österreichische Strategie...*, 2018: 9). As a consequence, research and involvement should create military potential, and thus strengthen their own and EU security. The security research strategy (s) should support multi-faceted goals and activities of a political, economic and technological nature, and should create appropriate conditions for Austrian companies and research units for their participation in the competition for EU public funds (with EVF).

The Austrian commitment meant the increase of EU independence in the international arena and assistance in the implementation of its *Globale Strategien der EU* in three priority areas:

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important thematic research and development programs. It is worth emphasizing that the adoption of the purchase of entire systems and ready-made solutions resulted in changes in the market for domestic producers / suppliers. Austria has become dependent on foreign suppliers with consequences for domestic suppliers and producers. This resulted in a deterioration in the quality and scope of systemic support, and consequently in lower competitiveness. As a result of this situation, many Austrian companies distanced themselves from the arms sector, and this isolated them further from international cooperation and creating structures.

<sup>12</sup> Austria assumed that if the amount of returnable support (Rückflussquote) remained at 2.8% (as in Horizon 2020), the total amount of recovery for EDRP may be 98 million, and for EDIDP – 196 million. Own expectations for gross value added could be 95 and 174 million (for EDRP and EDIDP respectively). The level of support, including Austrian payments, for industry may exceed 87 million Euro, and for the research and arms industry, 175 million Euro.

- response to external conflicts and crises;
- capacity building of partners and partnerships;
- protecting the EU and its citizens,

and Austria's task is to make the best use of the opportunities and to create the optimal framework for this to happen. Therefore, domestic businesses and research institutions should be treated as valuable partners in European security projects that can economically manage the available resources and enhance development, independence and security. The Austrian army is also considered to be such a reliable partner as a participant in (supra) national projects.

Two goals have been set for the implementation of the vision, and can be summarised as:

- developing FTI-Politik in the field of results-oriented and operational defense research as well as development, integration into national FTI policy, interest representation, optimal use and active policy profiling;
- enabling and supporting FTI entities (companies, research institutions) in order to effectively participate / engage in EU programs.

Austria has decided to pursue these goals by:

- creating internal structures and links;
- communication and networking with the EU level;
- creating framework conditions in Austria;
- thematic positioning of Austria by identifying its own fields and strengths in the economy and research, strengthening them through clusters and enterprises, improving research links / cooperation;
- accompanying activities in the field of communication, monitoring, parallel research and transfer support (*Österreichische Strategie...*, 2018: 9).

## AREAS OF ACTION AND INSTRUMENTS

The development of a viable FTI-Politik requires systemic networking at the EU level, as well as the provision of an appropriate knowledge and information base. For Austria, this standard meant the need to allocate tasks, better intertwine its own structures and industry institutions, and to enter the best networks and actively cooperate with them. It was decided to focus on strong research fields and technologies, as the best quality of research is a key condition for entering the world-class science. It also offers an opportunity for top-level research and technological cooperation (Janger, König, 2020: 3–13). The integration of the environment was reflected in the postulate to create a Pool von Experten in the field of security and development research, which can be used in the development and evaluation of projects or public policies, with effective communication and knowledge transfer. In the economic sector, it was decided to focus on strategic trends and at the same time on optimal networking with local partners. The structures of cooperation and scientific cooperation allow some entities to fulfill the hub function. A different range of benchmarks is in the impact of EVF, business projects and investments sponsored by public funds. Therefore, the expectation is that investments in security and defense will develop the national research-

technology-innovation system in terms of: their support and financing, instruments, creation of cooperation and partnerships, project management (*Österreichische Strategie...*, 2018: 10).

In practice, they wanted to achieve the creation of structures and connections by including the EU security research in important political and advisory bodies and by representing the interests of the of security and defense organisations. Support from the stakeholders was helpful, and related to: financing, organization and research transfer. These are projects that help to create thematic clusters (*Österreichische Strategie...*, 2018: 7–22; *Wniosek...*, 2017)<sup>13</sup> in strong fields / industries with the direct involvement of companies and scientific institutions. Another way was to incorporate the analyzed issues into important national scientific and industry communication platforms, subjecting these studies to regular evaluation and reporting. The support from the state and the wider stakeholders aimed at the identification and search for research partners with the help of FTI-type institutions that had experience in the implementation of European projects. An information policy was to be a supporting component, allowing the dissemination of knowledge about programs, about the state of involvement of national and EU institutional, public and business actors. It was planned to create an inter-ministerial platform integrating stakeholders around cooperation and agreeing a position towards EU bodies (*Österreichische Strategie...*, 2018: 10–11).

Communication and networking at the EU level is to represent the Austrian interests in all relevant fora and programs, and thus determine the position and national interests, and agree positions. It is equally important to ensure the permeability of informal communication and process streams and for the coordination and anticipation of actions to associate Austrian representatives in international structures and teams. For this reason, it was justified to expand the network in Brussels, optimize cooperation and inter-ministerial arrangements, create contact offices, build databases of experts and fill important positions with them (eg ENDR) (*The European...*, 2022).<sup>14</sup> Among the priorities at the EU level was once again emphasized the necessity to create a framework and commitment to the economy and science, supporting SMEs to participate in research and development programs.

Creating the right framework conditions in Austria means the effective use of available instruments to support research and development projects that are implemented at the EU level (ESIF, EFRE, COSME). This proves the involvement of public and private funds, the cooperation of the army and research institutions, as well as the presence of technological monitoring as a form of long-term involvement in the development of programs. On the other hand, the joint design of EDRP and EDIDP at the national level was dedicated to agreeing the contribution to exchange programs and the development of projects integrating various industries.

Thematic positioning comes down to the clear identification of Austrian strengths in the economy and research, and to strengthening them through national initiatives. This is achieved by the expansion of national technology clusters in cooperation with

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<sup>13</sup> EU action should focus on a selected number of research projects linked to priorities in the field of defense capabilities, on critical technologies and innovation. Research is to be cross-sectoral and have civil use.

<sup>14</sup> ENDR – European Network of Defence – Related Regions.

stakeholders. The discussed Strategy assumes the improvement of the coherence (visibility, interaction, networking) of national bodies within the European and international environment, as well as a positive impact on the recognition of national and European research in the field of defense (complementarity, preparation of topics and stakeholders).

Accompanying activities add up to active communication and information about scientific developments and popularizing it to create media products and monitoring programs in a short reporting cycle. They also take into account the provision of activities and adequate accompanying research through prior analysis for the purposes of preparing strategic proceedings and ensuring optimal exploitation of project results (transfer, development, commercialization, public procurement). For this, close structural cooperation with public institutions, the army and research centers was required to increase the synergy effects and avoid duplication of efforts.

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According to the EU institutions, the development of technologies in key areas and building the appropriate capabilities necessary to obtain a technological advantage was required to ensure security and increase of the level of strategic autonomy / sovereignty. European security is based on independence, which provides the EU with the status of a fully-fledged participant in international relations. In connection with the above, the external policies of the EU and the Member States are to go beyond the soft influence towards the use of hard instruments – technologies of civil and military use and military potential. The EU saw the need for a structured promotion of research and innovation in the field of security and defense.

Austria – like many other countries – has been developing such research for several years, but it was mainly at national level and application. With EU initiatives and national security (research) strategies, an important step has been taken with: a common defense policy based on strategic autonomy, integrating EU research and technology investments, and weaving national FTI systems into the EU military and civilian military research space. The steps taken by Austria demonstrate the will to operate in wider EU (infra) structures and to benefit from financial instruments, while supporting and profiting from socio-economic processes. Although for many years the security and defense research have been developed in Austria within national security strategies, it is only the development of a separate research strategy in EU that proves the importance of threats and the vision of each country role to play, as well as the need for multi-level adaptation within the framework of Europeanization processes.

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## ABSTRACT

Official documents of the Austrian government indicate the growing dependence of the economy and society on technical infrastructure, which required continuous research. Austria has developed a national research program to promote its economy, technology and cooperation. It is also intended to support the Austrian defence and civilian economy as a coherent part of the EU's research, technology and economic structures. This text is based in particular on primary literature, which includes documents of EU institutions, Austrian security and defence strategies, and statements of the Ministry of Defense. This publication attempts to answer the question of how Austria made an effort to integrate security and defence issues with the national research-technology-innovation system (Forschung-Technologie-Innovation, hereinafter FTI), with the specificity of the domestic industry dominated by small and medium-sized enterprises. This paper is based on the analysis of documents and scientific interpretation of key EU and Austrian positions. The research aims to analyze and understand the role of research in the concept of (national) security in Austria and to link it with the EU's security and defence policy. Research and this publication verify the assumption that the security and strategic autonomy of the EU / Member States require integrated solutions (Europeanization process). Going beyond the soft impact toward hard instruments requires a knowledge-based development and synergies of coherent strategies, technologies and research. The EU saw the need for a structured promotion of research and innovation in the field of security and defence. Austria has been developing such research for several years, mainly at the national level and application. The steps taken by Austria demonstrate the will to operate in wider EU (infra) structures and to benefit from financial instruments while supporting and profiting from socio-economic processes.

**Keywords:** Austrian security and defense strategies, security and defense research, national security in Austria, European Security Policy

## BADANIA NAUKOWE W AUSTRIACKICH STRATEGIACH BEZPIECZEŃSTWA ORAZ BADAŃ NAD BEZPIECZEŃSTWEM I OBRONNOŚCIĄ

### STRESZCZENIE

Oficjalne dokumenty austriackiego rządu wskazują na wzrost zależności gospodarki i społeczeństwa od technicznej infrastruktury, która ta zależność wymagała stałych badań. Dlatego Austria opracowała narodowy program badań, aby promować własną gospodarkę, technologię i zacieśniać współpracę. Ma to także wspierać austriacką gospodarkę obronną i cywilną, jako spójną część unijnych struktur badawczo-technologicznych i ekonomicznych. Tekst bazuje w sposób szczególny na literaturze prymarnej, na którą składają się dokumenty instytucji unijnych, austriackie strategie bezpieczeństwa i obronności, stanowiska ministerstwa obrony. Publikacja jest próbą odpowiedzi na pytanie, w jaki sposób Austria podjęła trud zintegrowania problematyki bezpieczeństwa i obronności z narodowym systemem badań – technologii – innowacji (Forschung-Technologie-Innovation, dalej FTI), ze specyfiką krajowego przemysłu zdominowanego przez małe i średnie przedsiębiorstwa. Przyjętą metodą badawczą jest analiza dokumentów i interpretacja kluczowych stanowisk unijnych i austriackich. Celem badań jest analiza i zrozumienie roli badań naukowych w koncepcji bezpieczeństwa (narodowego) Austrii oraz powiązanie z polityką bezpieczeństwa i obronności UE. Badania i publikacja weryfikują założenie, że bezpieczeństwo i strategiczna autonomia UE/państw członkowskich wymagają zintegrowanych rozwiązań (proces europeizacji). Wyjście poza miękkie oddziaływanie w stro-



nę instrumentów twardych wymaga rozwoju osadzonego na wiedzy oraz synergii spójnych strategii, technologii i badań naukowych. UE dostrzegała konieczność usystematyzowanej promocji badań i innowacji na polu bezpieczeństwa i obronności. Austria rozwijała takie badania naukowe od szeregu lat, jednakże miały one głównie narodowy wymiar i zastosowanie. Kroki poczynione przez Austrię dowodzą woli funkcjonowania w szerszych unijnych (infra)strukturach i czerpania korzyści z instrumentów finansowych, jednocześnie wspierania i profitowania z procesów społeczno-gospodarczych.

**Słowa kluczowe:** austriackie strategie bezpieczeństwa i obrony, badania nad bezpieczeństwem i obronnością, bezpieczeństwo narodowe w Austrii, europejska polityka bezpieczeństwa

