



WHAT FUTURE EUROPEAN DEFENCE AND TECHNOLOGICAL INDUSTRIAL BASIS (EDTIB) DO WE WANT/NEED?

The Romanian case

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The Armament Industry European Research Group (Ares Group) was created in 2016 by The French Institute for International and Strategic Affairs (IRIS), who coordinates the Group. The aim of the Ares Group, a high-level network of security and defence specialists across Europe, is to provide a forum to the European armament community, bringing together top defence industrial policy specialists, to encourage fresh strategic thinking in the field, develop innovative policy proposals and conduct studies for public and private actors.

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ABSTRACT

The Russian invasion of Ukraine has prompted the European Union to reassess its defence landscape. EU Member States have boosted defence spending to address equipment shortfalls, but national defence planning and acquisition, is hampering EU-level cooperation. The risk of isolated spending and fragmentation persists, particularly if non-EU procurement solutions are favoured. This is also the case of Romania. The country's defence industrial sector has grappled with challenges since the fall of communism, which led to low technological sophistication and a shrinking defence industrial base. The U.S. has also played a pivotal role in Romania's defence procurement and in providing a strategic security umbrella. Regarding short-term plans, Romania seeks modernisation of its armed forces through continued acquisitions from the U.S. and new agreements with South Korea. In the long term, Romania's governmental defence sector should support the country's booming IT sector and dual-use digital products, aligning with the EU's focus on emerging technologies and cyber capabilities. Longer-term defence planning should also give higher priority to the EU's defence innovation initiatives, while transparency and improving procurement practices remain vital.

Keywords: Romanian defence | EDTIB | Romania

The Russian invasion of Ukraine and the return of large-scale conflict on the continent have served as a wake-up call for the European Union (EU). The conflict has raised awareness of the lacking equipment stockpiles and the vulnerabilities of an undersized European Defence and Technological Industrial Basis (EDTIB). This shifting security context will have a lasting yet incremental impact on the European defence landscape. With defence planning and development of military assets taking place at a national level, anticipating, and identifying opportunities for European cooperation is often hampered. In this respect, the 2022 Coordinated Annual Review on Defence (CARD)¹ has offered key strategic and political messages, actionable recommendations, and concrete cooperation opportunities, while noting that defence expenditure has grown significantly to €214 billion in 2021, up 6% compared to 2020, and is estimated to grow further by up to €70 billion by 2025. Yet, the 2022 CARD identified that only 18% of all investment in defence programmes involves European cooperation.

This is further substantiated if Member States favour individual, non-EU off-the-shelf procurements over longer-term investments. Capacity choices and priorities vary from one member state to another, and there does not seem to be a consensus on the direction the EDTIB should take in future years. But what about the case of Romania, a country which is close to the front lines? Due to the urgency of the situation, what short and longer-term lessons should the EU and Member States like Romania draw for the bloc's future defence industry and market? Romania's Defence Technological and Industrial Base (DTIB) has a long history, dating back to the early twentieth century. During the communist era, Romania developed a strong DTIB, producing a wide range of military equipment, including tanks, aircraft, and ships. Before 1989, Romania's defence industry exported military equipment up to \$800 million per year, from over 100 companies that employed approximately 130,000 people². However, the collapse of communism in 1989 led to a sharp decline in the country's DTIB.

¹ European Defence Agency. *The 2022 Coordinated Annual Review on Defence Report (CARD)*. [Link](#).

² Ivan, L. (2020). Evaluation of the Romanian Defence Industry. *Business and Management Studies*, 6(4), 59-71.

ROMANIA'S DEFENCE INDUSTRIAL STRATEGY

Post-1989, Romania's national defence industry largely became clustered³ around ROMARM⁴ - a Romanian state-owned defence company under the authority of the Ministry of Economy - and ROMTEHNICA⁵ - a company trading on both domestic and external markets the goods under the administration of the Romanian Ministry of National Defence, as well as exports products supplied by the Romanian defence industry. At the heart of Romania's defence industry also lies PATROMIL⁶, a consortium representing more than 200 companies specialising in the production of military goods, components, and technologies.

It is worth underscoring that Romania has grappled with challenges in cultivating competitiveness and technological innovation within a rigid bureaucratic framework inherited from its communist past. Furthermore, a pivotal factor contributing to the limited uptake of domestically produced military equipment is the relatively modest technological sophistication and edge of the country's defence industry.

Starting from 2017, Romania has committed to spend⁷ at least 2.0% of GDP annually on defence through 2027, although it has not fully utilised this budget allocation. In 2018, for instance, the expenditure only reached 1.89%. The commitment to maintaining the 2% target persisted in 2019 and 2020. In 2022 the defence budget was increased to 2.5% of GDP, with an additional \$1 billion to use especially for the acquisition of military equipment. Regarding defence procurement, Bucharest has traditionally favoured government-to-government contracts for acquisitions⁸.

Concerning military exports, Romania primarily engages in the sale of light weaponry and combat ammunition, with a conspicuous absence of advanced military technology or equipment featuring cutting-edge technologies. This observation underscores the relatively modest technological capabilities of the country's defence industry. It is noteworthy that a substantial portion of Romanian military equipment relies on ageing technologies dating back to the Soviet era from the 1960s to the 1980s, contributing negatively to both the technological sophistication and quality of end products. Before 1989, Romania operated under a centralised economy. The Soviet Union still provided the majority of heavy arms and complex equipment in Romania's inventory while Romania was also making considerable

³ Lațici, T. (2020). Armament and Transatlantic Relationships: The Romanian Perspective. Armament Industry European Research Group (ARES) Commentary No. 51. Retrieved November 1, 2023. [Link](#).

⁴ The main producer and direct exporter of military products in Romania, **Compania Națională ROMARM S.A.** was established in 2000 through the fusion of the most important factories of the Romanian defence industry. ROMARM has a holding structure with 100% Romanian capital. [Link](#).

⁵ ROMTEHNICA (2023). Information about the company. Retrieved November 1, 2023. [Link](#).

⁶ Lațici, T. (2020). Armament and Transatlantic Relationships.

⁷ U.S. International Trade Administration (2022). Romania's Defence Industry. Retrieved Nov. 1, 2023. [Link](#).

⁸ Lațici, T. (2020). Armament and Transatlantic Relationships.

efforts towards building an independent domestic arms industry. The key players were the ministries of economy, working in tandem with industrial conglomerates. Their primary focus was on the defence industry, as evidenced by the National Program for Defence Industry Development. This alignment was closely tied to international treaties within the Warsaw Treaty framework and the ‘Council for Mutual Economic Assistance,’ an initiative stemming from the former Soviet Union⁹.

The low technological level of Romanian military equipment is mainly due to reduced investment in the research and development (R&D) sector after 1989. A more pressing concern for the domestic defence sector lies in the shortage of skilled personnel proficient in operating industrial equipment for armament production, resulting in diminished product quality and subsequent cost escalation. After successive reorganisations, in 2020 the indigenous defence industry counted 22 economic operators with full state capital and 17 companies with mixed or private capital, whereas the level of export of military equipment amounted to about \$200 million, 25% of the export levels before 1989¹⁰. According to the Ministry of Foreign Affairs Department for Export Controls (ANCEX)¹¹, the Romanian Ministry of National Defence acquired military equipment from the internal market by 15%. The main reason for the low level of retention by domestic beneficiaries is accounted for by the low technological level of the military equipment produced by the industry.

Currently, Romania’s defence budget stands at \$8.5 billion in 2023¹², and projections indicate a compound annual growth rate (CAGR) of over 2% in the period spanning from 2024 to 2028. Romania’s military arsenal comprises a mix of modern NATO-standard Western equipment and adapted versions of Cold War-era Eastern Bloc weaponry. Ongoing initiatives are aimed at modernising the ageing inventory, while efforts to revitalise domestic defence production are underway. Key sectors within Romania’s defence market ‘encompass missiles and missile defence systems, military land vehicles, military rotorcraft, naval vessels and surface combatants, submarines, artillery, military simulation and training, electronic warfare, tactical communications systems, military fixed-wing, EOIR (Electro-Optical/Infrared), military radar, underwater warfare systems, naval engines, military UAVs (Unmanned Aerial Vehicles), and INS GNSS (Inertial Navigation System with Global Navigation Satellite System)’¹³.

Notably, the primary sector in the Romanian defence market is missiles and missile defence systems, closely followed by military land vehicles and military rotorcraft. Among the leading

⁹ Pleşanu, T., & Nicușor, M. (2015). Military Production in Romania During the Communist Era and its Effect on the Organizational Culture. *Bulletin of the ‘Carol I’ National Defence University*.

¹⁰ Ivan, L. (2020). Evaluation of the Romanian Defence Industry.

¹¹ The Romanian Ministry of Foreign Affairs’ Department for Export Controls (2023). [Link](#).

¹² NATO. (2023). Defence Expenditure of NATO Countries (2014-2023). Press Release, July 7, 2023. [Link](#).

¹³ Global Data Report (2023). Romania Defence Market Size, Trends, Budget Allocation, Regulations, Acquisitions, Competitive Landscape and Forecast to 2028. Retrieved November 1, 2023. [Link](#).

defence companies operating in Romania are both foreign and Romanian companies, namely 'Lockheed Martin, Raytheon Technologies, Bell Textron, General Dynamics European Land Systems, Aerostar SA, Turbomecanica SA, Romaero SA, Retro Craiova SA, A-E Electronics SA, and Aero Consulting'¹⁴. For instance, Derco, a Lockheed Martin Company, has entered into a partnership agreement with Aerostar S.A. in 2023 to undertake the repair of landing gear, wheels, and brakes, enhancing support for the Romanian Air Force's F-16 fleet. This collaboration aims to streamline lead times and optimise logistics, contributing to increased mission readiness for the Air Force¹⁵.

RELATIONSHIP TO THE EDTIB AND EU DEFENCE INNOVATION

In response to the war in Ukraine, Romania announced its most substantial defence budget increase since the Cold War's conclusion. The nation's strategic location in between the Balkans and along the Black Sea on the EU's Eastern flank renders it highly sensitive to regional instability. When it comes to the EU, Romania has consistently demonstrated strong support for EU defence initiatives, including the European Defence Fund (EDF), the Permanent Structured Cooperation (PESCO), and the Coordinated Annual Review on Defence (CARD) since their inception. A paramount focus has been placed on avoiding duplication and ensuring complementarity with NATO. Romania's active participation in the EDF's precursors is noteworthy, with academic consortia actively engaged in the Preparatory Action on Defence Research (PADR). Particularly noteworthy is Romania's standing as one of the top applicants for the European Defence Industrial Development Programme (EDIDP), reaffirming the country's commitment to enhancing its defence capabilities¹⁶.

A PESCO member from its establishment, Romania is participating in 20 projects, from interoperable specialised modular asset development for full spectrum defensive underwater intervention operations, the development of underwater autonomous vehicles, to the creation of an innovative web of knowledge for cyber defence and cyber security education and training, among others. It is also leading 2 projects, such as the 'CBRN - Chemical, Biological, Radiological and Nuclear Defence Training Range (CBRNDTR)' and the 'European Union Network of Diving Centres (EUNDC)'.

When it comes to the EDF, Romania has a modest footprint regarding the total number of participating entities and the number of projects they are engaged in. Regarding the results

¹⁴ Global Data Report (2023).

¹⁵ Lockheed Martin. (2023). Derco and Aerostar S.A. Sign Agreement in Support of Romanian Air Force F-16 Fleet. Providing Specialized Tooling, Equipment and Training for F-16 Fleet. Retrieved Nov. 1, 2023. [Link](#).

¹⁶ Lațici, T. (2020). Armament and Transatlantic Relationships.

of the European Defence Fund 2021 Calls for Proposals, 60 collaborative defence research and development projects benefited from a total EU support of almost €1.2 billion, out of which Romania numbered 14 entities selected in the proposals¹⁷. Following the 2022 calls for proposals under the EDF, 41 collaborative defence research and development projects were selected for funding with a total EU support of almost €832 million. The selected projects aim to further develop the EU's cutting-edge defence capabilities in critical areas such as naval, land, and air combat, early warning in space, and cybersecurity. Romania, through public and private entities, participates in 7 of these collaborative projects, with the most notable areas being: space (REACTS project), naval (E-NACSOS project), cybersecurity (FACT project), simulation and training (FEDERATES project), and unmanned vehicles (PASITHEA).¹⁸

DIVIDED FUTURE COMMITMENTS BETWEEN THE U.S. AND THE EDTIB

Of paramount importance is the fact that the United States (U.S.) has been a key strategic partner for Romania¹⁹. Back in 2005, the U.S. and Romania inked a key defence cooperation agreement, providing a comprehensive framework for U.S. military operations. In 2011, the U.S. and Romania cemented their commitment through a Joint Declaration on Strategic Partnership for the 21st century, marking a pivotal milestone in their bilateral relations. The agreement identified critical domains for enhanced collaboration, with a particular focus on the political-military relationship and law enforcement cooperation, among other facets.

Notably, the Roadmap for Defence Cooperation, signed in October 2020, delineates strategic priorities for the bilateral relationship spanning 2020-2030. This forward-looking document underscores the joint commitment to key areas, including cybersecurity, military modernisation, and multi-domain operations within the Black Sea region. In the spring of 2023, Romania announced the fourth of its *Patriot* missile batteries is operating, giving a major boost to national security while enhancing the defence of NATO's south-eastern flank. Romania signed an agreement for seven Raytheon-made *Patriot* batteries in a contract worth \$3.9 billion in 2017 with the contract awarded to American manufacturers Raytheon and Lockheed-Martin a year later. The U.S. government lists that the U.S. has approximately \$6.2 billion in active defence sales to Romania including coastal defence systems, F-16-related

¹⁷ European Commission (2022). European Defence Fund 2022 Calls for Proposals – Results. Retrieved November 1, 2023. [Link](#).

¹⁸ Ion, T. (2023). *European Defence Fund: The EU will invest 832 million euros in 41 joint research projects in the defence sector, involving 550 entities from Norway, Romania, and 25 other member countries*. [Link](#).

¹⁹ U.S. Department of State (2023). U.S. Security Cooperation with Romania. Retrieved November 1, 2023. [Link](#).

equipment, the Patriots and HIMARS²⁰. Romania also hosts *MQ-9 Reaper* drones on its 71st Air Base for intelligence-gathering on the Eastern flank and the Black Sea.

In the spring of 2023, Romania marked a significant stride in bolstering national security and fortifying NATO's south-eastern defences with the operationalization of its fourth *Patriot* missile battery. This development stands as a testament to Romania's unwavering commitment to enhancing regional security. Thus, the U.S. has a notable stake in Romania's defence capabilities, with active defence sales amounting to approximately \$6.2 billion.

In July 2023, during a conference on industrial defence cooperation between Romania and the Republic of Korea (ROK)²¹, the Romanian Directorate General for Armaments announced Romania's future and ambitious military modernisation plans. Alongside the approved purchase of 54 modernised *M1A2* Abrams tanks from the U.S., Romania now aims to acquire around 300 new combat tanks, highlighting its commitment to strengthening its military capabilities. To achieve this goal, Romania is turning to the South Korean company Hyundai Rotem. The acquisition would include the advanced *K-2* 'Black Panther' main battle tank and the *K-9* Thunder self-propelled howitzer, both NATO-compliant. However, the acquisition of Abrams tanks appears to complicate this potential purchase. The ROK could find an opportunity to provide tube artillery, addressing a deficiency in Romania's legacy fleet. The Hanwha K9 155/52 mm self-propelled gun is under consideration²², along with interest in ammunition and ammunition technology transfer.

Furthermore, in September 2023, Romania's Ministry of Defence announced²³ that it is on course to sign a letter of acceptance in 2024, initiating the procurement of 32 *F-35* Lightning II fighters, with an additional 16 aircraft in the pipeline. The acquisition plan entails securing the first two squadrons through a government-to-government agreement with the U.S. under the FMS program, for an estimated value of \$6.5 billion. The transition from *F-16* fighter jets to *F-35* jets for the Romanian Air Force represents a significant modernisation and capability enhancement process. Notably, Romania is also fostering stronger defence ties with Turkey²⁴, exemplified by Romarm signing a memorandum of understanding (MoU) with Aselsan on smart munitions technology transfer and the possibility of ordering Bayraktar TB2 UAVs.

²⁰ Hill, T. (2023). Safer skies: Romania's fourth Patriot missile air defence battery goes into service. *Euronews*. Retrieved November 1, 2023. [Link](#).

²¹ Army Recognition (2023). Romania acquires Korean K-2 Black Panther MBTs and K-9 Thunder self-propelled howitzers. Retrieved November 1, 2023. [Link](#).

²² Shaw, David. (2023). Romania's Ongoing Military Transition. *European Security & Defence*. Retrieved November 1, 2023. [Link](#).

²³ Adamowski, J. (2023). Romania, Czech Republic advance F-35 acquisition plan. *Defence News*. Retrieved November 1, 2023. [Link](#).

²⁴ Shaw, David. (2023). Romania's Ongoing Military Transition.

When it comes to EU defence innovation initiatives like the EDF, Romania's ability to advocate its defence interests through the Fund has hinged significantly on the country's capacity to project its strategic aspirations at both Eastern European regional and EU levels. Unlike previous scenarios where Romania adhered to pre-existing EU strategic visions, the current geopolitical landscape allows for a unique positioning. In this respect, Romania can emerge as a pivotal player in enhancing the EDF architecture, provided there is a concerted and creative effort from key national stakeholders in the defence realm - be it governmental, industrial, research, academic, professional associations, or consultancy and lobby groups.

To achieve this objective, a set of public policy recommendations²⁵ have been proposed to efficiently capitalise on Romania's opportunities within the EDF. Under governmental coordination, Romania should establish a national framework for initiatives within the EDF. This framework would serve as an integrated platform for information exchange, debates, and the promotion of Romanian entities' positions and proposals across various EDF components. Romania should also initiate a public diplomacy action program involving key actors from national governmental areas (defence, foreign affairs, European affairs, economic and business sectors) and EU institutions. The aim would be to promote the EDF's attractiveness and efficacy in Romania.

Equally, the country should more proactively participate in EDF governance entities as a Member State, while striving to secure relevant positions in program committees and expert groups for national experts, defence industry representatives, and the military research community. Furthermore, Romania should proactively identify, negotiate, and include relevant Romanian initiatives and objectives in the EDF Work Programmes, particularly in research and prototype development where Romania has expertise. In the absence of proactive measures to mobilise Romania's existing potential within the EDF, there is a growing risk of missing significant opportunities generated by the Fund. Such oversight could result in medium and long-term negative consequences for Romania's positioning in the future architecture of the EDTIB.

It is also important to note that Romania is hosting a growing number of small and medium-sized enterprises (SMEs), particularly in the Information and Communications Technologies (ICTs) sector, which tend to develop dual-use products²⁶. Romania emerges as a European front-runner, ranking sixth globally, for its abundant pool of certified IT specialists, boasting density rates surpassing those of the U.S. and Russia, with a flourishing cadre of tech talent.

²⁵ Iancu, F., & Tibil, G. (2018). Is Romania ready to be relevant within the European Defence Fund. *Defence & Security Monitor*. Retrieved November 1, 2023. [Link](#).

²⁶ U.S. International Trade Administration (2022). Information & Communications Technology (ICT). Retrieved November 1, 2023. [Link](#).

Romania is not only home to the new European Cybersecurity Competence Centre (ECCC)²⁷ but also hosts a thriving ecosystem of international technology giants, among them Amazon, HP, IBM, Microsoft, Oracle, and more. Over the past years, 50 of the largest technology enterprises²⁸ in Romania have quadrupled their operations and workforce, exemplifying the country's dynamic growth in the tech sector.

Given the new strategic emphasis put on dual-use (digital) emerging and disruptive technologies (EDTs) as critical for the competitiveness of the EDTIB, it is this very sector that should receive the most attention from the Romanian government when it comes to access, development, talent, and innovation potential. Overall, in the current security landscape, Romanian national defence planning primarily revolves around addressing past deficiencies by addressing urgent, previously deferred needs, rather than proactively investing in innovative and potentially shared capabilities to secure the future.

Like other EU Member States, the country tends to procure off-the-shelf if there is no national solution or in case of time pressure related to urgent operational requirements or budget implementation. Romania predominantly leans towards non-EU suppliers, further bolstered by the Russian war against Ukraine, which entails the risk of increasing fragmentation and non-EU dependencies. Bilateral military cooperation agreements and programmes, including military assistance and technology transfer, play a role. Romania is a staunch and outspoken Atlanticist country, and a close relationship with the United States is perceived as a crucial national security concern, in view of providing support and assistance to Romania's armed forces, fostering collaboration in the defence sector, and acting as a security umbrella and deterrent towards Russia. Yet, in the long term, Romania should also place greater emphasis on established EU prioritisation tools, namely the Capability Development Plan (CDP), encompassing High-Impact Capability Goals (HICGs), the Overarching Strategic Research Agenda (OSRA), and Key Strategic Activities (KSA), which are widely regarded as valuable and relevant.

²⁷ The European Cybersecurity Competence Centre (ECCC) aims to increase Europe's cybersecurity capacities and competitiveness, working together with a Network of National Coordination Centres (NCCs) to build a strong cybersecurity Community. Retrieved November 1, 2023. [Link](#).

²⁸ U.S. International Trade Administration (2022). Information & Communications Technology (ICT).

CONCLUSION

Amid the ongoing conflict, a stark reality has emerged among some EU Member States: the paramount focus on replenishing stockpiles and bridging capability gaps takes precedence, irrespective of whether the source of equipment is intra-European or extra-European. The repercussions of these strategic choices, cumulated with the defence industrial strategies adopted by Member States, and their approach to EU Defence Initiatives such as PESCO and the EDF could hold far-reaching implications for the EDTIB in the medium and long term.

To achieve tangible outcomes, a joined-up European and forward-looking perspective is imperative, envisioning how the EU's defence landscape will evolve across operational domains in the long run. Moreover, when it comes to Romania, the country should keep up the momentum and the recent strides made in revitalising its DTIB, by bolstering investments in defence research and development and encouraging foreign and European participation in the sector. Nevertheless, Romania's DTIB remains relatively fragile, with the country heavily reliant on imported military equipment.

Conversely, Romania harbours the potential to nurture a robust DTIB. The country possesses a skilled workforce in science, technology, engineering, and mathematics (STEM), a tradition of innovation, and leading research institutes. This will require a degree of specialisation, while also capitalising on legacy know-how in the aerospace, shipbuilding, and land systems sectors. The government should also intensify its investments in the ICT sector, especially in dual-use ICTs and new (digital) technologies, while also streamlining the lack of investments, a fragmented market, and a rigid bureaucratic system. Additionally, improvements in arms procurement practices are essential to ensure fairness and transparency. By addressing these weaknesses, Romania could become a more influential player in the European defence market.

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