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COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE
COMMITTEE OF THE REGIONS**

**The European Defence Fund: supporting the development of the defence capabilities of
tomorrow**

Interim evaluation of the European Defence Fund

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INTRODUCTION

A strong, competitive, and innovative EU Defence Technological and Industrial Base (EDTIB) is a key pre-requisite for achieving defence readiness. At the time of inception of the European Defence Fund (EDF), the EU's defence R&D funding programme for 2021-2027¹, decades of cuts in defence spending, increasing cost of defence R&D and equipment, market fragmentation and lack of cooperation has left critical capability gaps in the Member States' armed forces, many of which require new technologies and innovative solutions.

Increasing security threats since the launch of the fund, the return of high-intensity warfare in Europe and growing geopolitical tensions, coupled with fast technological changes, have only aggravated and vividly expressed the problems that the Fund aims to tackle. Collaborative defence research and development (R&D) has therefore become a key driver for unleashing the full potential of the EDTIB. Furthermore, it is widely accepted that very few EU Member States can afford to develop the most complex defence systems by themselves, and no country can do so across all domains, calling for coordinated action at European level.

The EDF is the EU's answer to this call and a step change in the way the EU supports the EDTIB. With a budget of EUR 7.3 billion, it aims to foster the competitiveness, efficiency and innovation capacity of the European defence industry by supporting collaborative and cross-border R&D cooperation throughout the EU.

With EUR 5.4 billion already committed to defence R&D and 162 projects on-going, the EDF has become one of the largest defence R&D programmes in Europe. The fund has attracted the best defence R&D players, as well as many non-traditional companies and is expected to have a large-scale impact. The EDF is 'user-centric', driven by the needs of the armed forces of the Member States and Norway. Next-generation technologies and capabilities in all military domains - air, ground, naval, space, cyber - are expected to be developed with EDF support, many of which would have not gone ahead without it. The EDF is also delivering clear value for money for the EU economy including with spillover on civilian applications.

The increasing relevance of the EDF is confirmed by its growing attractiveness for industry. There has been a constant increase in proposals submitted under the EDF calls for proposals. Starting in 2021 with 140 proposals, and with a stable annual budget, the latest (2024) calls for proposals attracted nearly 300 proposals - an increase of 25% in addition to the substantial increase of 78% in 2023. The fund's importance is also underlined by the variety of stakeholders' contributions submitted to the Commission during the EDF interim evaluation. Input was provided by 330 entities in the form of around 100 questionnaire replies, more than 30 position papers and during dedicated meetings and workshops. The stakeholders consulted included a representative part of the EDTIB as well as other key stakeholders.

During its first years, the EDF implementation has been a balancing act aimed at reconciling two twin but sometimes diverging objectives. On one side, closing critical capability gaps by supporting the development of next generation defence technologies and capabilities, with Member States in the driving seat for setting priorities. On the other, accelerating the transformation of defence through innovation, inclusiveness, and by attracting new and non-traditional defence players. Both underpinned by the general objective of de-fragmenting the EDTIB, encouraging collaboration and ensuring a socio-economic return.

¹ The EDF builds on two precursor programmes, limited in time and budget, the Preparatory Action on Defence Research (PADR) and the European Defence Industrial Development Programme (EDIDP).

1. ADDRESSING FRAGMENTATION AND BOOSTING COLLABORATION

The EDF already plays an important role in **boosting collaborative defence R&D spending in the EU**. As of March 2025, five EDF annual work programmes have been adopted by the Commission, committing a total of EUR 5.4 billion for defence R&D. This makes the EDF one of the top 3 defence R&D investors in the EU². This investment includes around half of the total collaborative defence research in the EU. At national level, although legal entities from Member States with large, well-established defence industries, are the largest beneficiaries of EDF funding, a comparison with the most recent European Defence Agency (EDA) data on national R&D³ funding shows a **highly positive effect for all countries**, including for medium-sized and small-sized Member States with a limited traditional defence industry. In its first year of operation⁴, the EDF already provided funding similar or higher, in some cases significantly higher, to the total national defence R&D expenditure for 15 Member States⁵.

Through its incentives, the EDF has **fostered unprecedented cross-border defence R&D cooperation** across the EU. It promotes mutual understanding and a shared culture among the entities involved, which helps to defragment the EDTIB. The 162 EDF projects involve 1.366 unique participants⁶ from 26 Member States⁷ and Norway. This includes a wide geographical distribution of entities involved, also from regions where the defence industry is not traditionally prominent. While the EDF requires cooperation by at least three different legal entities from at least three Member States/Norway, the average EDF project consists of 19 participants from eight countries. Overall, the EDF has proven valuable as a framework to find new partners, including small and medium-sized enterprises (SMEs) and mid-caps, as well as extending on-going collaborations.

Beyond the traditional defence industry, the EDF has proven to be an attractive instrument also for European SMEs, mid-caps and research organisations. SMEs in particular play a growing role as agile providers of disruptive technologies and innovation in the defence sector. Thanks to the targeted efforts to integrate SMEs and innovators in the EDF (including through support beyond grants to accompany their business growth and technological maturity of innovative ideas), **SMEs are heavily involved in EDF projects, representing 43% of the unique participants** in EDF and **receiving** around 20% of EU funding⁸. In 6 EU Member States, they represent more than 50% of participations⁹. Mid-caps represent 4% of unique participants, receiving around 6% of funding. While SMEs benefit from dedicated support measures, the overwhelming share of SME participations falls under the thematic topics, ensuring strong involvement across the full programme. The **number of SME applicants is steadily increasing each year**. The most recent - 2024 - calls for proposals witnessed a 28% increase in proposals submitted from SMEs and research organisations compared to the previous year.

² Together with the national defence R&D investments in France and Germany

³ [European Defence Agency's Defence Data 2020-2021 Key Findings and Analysis](#).

⁴ Latest publicly available data for national R&D expenditure is for 2021

⁵ BE, BG, CY, EE, EL, ES, HR, HU, IE, IT, LT, LU, LV, PT, SI

⁶ Beneficiaries, affiliated entities and subcontractors as of February 2025. DG DEFIS, European Commission.

⁷ All EU Member States except Malta

⁸ Self-declared SMEs. DG DEFIS, European Commission. Data from EDF projects 2021-2023 extracted in February 2025

⁹ The highest level is observed in CY, EE, IE, LT, LU, and EL

By enabling closer cooperation between primes, SMEs and research and technology organisations, between defence companies and civilian companies that develop technologies with defence and dual-use potential and by widening cooperation within defence supply chains, the EDF plays an important role in making the European defence industry less fragmented.

2. CLOSING CRITICAL CAPABILITY GAPS: DEVELOPING NEXT GENERATION DEFENCE TECHNOLOGIES AND CAPABILITIES

While the EDF is still a relatively young programme (none of the EDF projects have been completed yet), **its relevance for the Member States' armed forces is already evidenced by its role in developing new defence technologies and products** that address critical gaps in all capability domains. The take up of EDF precursors projects' results by the armed forces of the Member States gives a strong indication for its potential.

Developing key next generation defence capabilities

EDF planning and programming is 'user-centric', based directly on the needs and input from Member States and Norway. It therefore ensures a **high degree of coherence between the defence capability development priorities** as identified in the framework of the Capability Development Plan (CDP), the areas for potential cooperation under the Coordinated Annual Review on Defence (CARD), other types of cooperation (PESCO, EDA Category B projects, and where relevant in a NATO context) **and the areas of EDF support.**

The EDF incentivises EU Member States and Norway to collaborate in developing next generation defence technologies, products and capabilities that might be difficult or even impossible to achieve by a single country. Given the scale of the EDF support in major defence R&D projects (e.g. the European Patrol Corvette, Eurodrone), which is larger than the total annual R&D expenditure of most EU countries, **it is nearly impossible for a single country to develop several EDF projects of such magnitude at the same time.** Similarly, the *EU HYDEF* and *HYDIS*² endo-atmospheric interceptor projects involve high costs and complex technical challenges that are difficult for any Member State to manage independently. The EDF also provides unique opportunities for smaller Member States and for countries with a limited defence industry to involve their national industry in developing major EU defence capabilities. Overall, **the fund provides a positive structural impact that goes beyond the EDF budget itself.**

EDF actions are expected to develop **more than 50 prototypes**, which constitute the technology and capability blocks for next generation defence capabilities. For example, the EDF supports the development of prototypes for the following capabilities and technologies:

- **Air domain:** helicopters, drones (medium-altitude long-endurance, tactical, combat), electronic warfare, propulsion systems.
- **Air and missile defence domain:** endo-atmospheric interceptors, counter-drones, space-based missile early warning.
- **Ground domain:** combat platforms, long-range indirect fire, unmanned ground systems, soldier systems, energy for military camps, command and control systems.
- **Naval domain:** platforms (European Patrol Corvette, mid-size semi-autonomous vessels), mine countermeasures, underwater communications, seabed and critical infrastructure protection.
- **Space domain:** Public Regulated Service (PRS) receivers, space situational awareness, space-based ISR, or high-altitude pseudo satellites.

- **Cyber domain:** cyber situational awareness, cyber ranges, interoperable systems for cyber defence and information warfare operations.

Furthermore, the **EDF contributes to the EU's strategic autonomy** by supporting numerous projects for the development of defence technologies and products for which Europe is currently fully dependent on third countries and for which there are no EU alternatives.

Project box: EDF projects addressing key capability gaps and contributing to EU strategic autonomy

- Hypersonic missile defence:** EU HYDEF and HYDIS² are EDF projects funded to develop capabilities related to the interception of hypersonic missiles. Before this, there was no programme developing such a critical capability needed for Europe's defence.
- EUROMALE:** The development of a fully sovereign European Medium Altitude Long Endurance (MALE) drone addresses a critical capability shortfall in European armed forces.
- Space-based missile early warning:** Through the ODIN's EYE II project, the EDF supports the development of fully sovereign and independent capabilities dedicated to early warning from space for the detection and tracking of ballistic missiles and novel hypersonic threats. Having such a critical capability will remove current dependencies on third countries and increase the EU's autonomy in space.
- Future Mid-size Tactical Cargo (FMTC):** The EDF contributes to the financing of a next-generation European FMTC aircraft. Having this military transport capacity is a key enabler for the autonomous conduct of EU missions and operations. Moreover, current tactical aircraft are outdated, with some aircraft originally designed almost sixty years ago.

On the interoperability and interchangeability of defence systems, the EDF has the potential to improve both, with EDF projects addressing components or sub-systems that can benefit several future capabilities. In addition, while end-systems using the technology can potentially be developed at national level with Member States competing against each other, many basic technologies benefit from joint developments by increasing cost efficiency and competitiveness on the market.

Addressing emerging and changing priorities

Recent military conflicts have given prominence to "new ways of warfighting" and focus on specific capability development vectors while, at the same time, accelerating pre-existing trends. This is the case for example with the development and use of unmanned platforms, air and missile defence, in the space and cyber domains. The EDF work programmes have **successfully addressed these emerging and changing priorities**, for example by extending the areas addressed under the 'Air and missile defence' category of action in response to the growing importance of this area, and under 'Force protection and mobility', addressing the *strategic air transportation of outsized cargo* in order to address a key capability gap further exaggerated by the unavailability of the *Antonov* transport fleet.

Furthermore, **certain topics that initially had lower funding have received increasing importance over time.** For example, the "Underwater warfare" category – with growing dependence on underwater infrastructure like gas pipelines or internet cables – has received closer attention. This re-prioritisation aligns with the EDF's broader goal of balancing long-term innovation with the demands of the current security context.

The EDF has also started supporting the **progressive integration of the Ukrainian defence industry** into the EDTIB. While under the EDF Regulation Ukrainian entities can only participate in research projects as associated partners (and cannot receive EDF funding), or as providers of goods, works or services needed to carry out EDF projects, EDF support

measures already enable Ukrainian entities to participate in specific EDF defence innovation activities¹⁰.

Ensuring continuity of effort

Ensuring continuity of effort along the R&D cycle up to market uptake has been highlighted by the defence industry as one of the main benefits of the EDF. This has helped to rescue several defence projects from the ‘valley of death’ as they would otherwise not have received further funding at national level to move to the critical funding step between product development and customer uptake and deliver concrete results for the armed forces of Member States. More than half of the EDIDP projects were followed up under the EDF, thereby ensuring project continuity, while an increasing number of EDF projects also have funding for their next steps, as progress is made in technology or capability development. The fact that research projects were continued as development projects should not be taken as the sole or main indicator of success. Many projects, especially those related to large and complex capabilities, build on long technology or capability roadmaps and sometimes need to have several follow-on topics before entering the final R&D phase. This is the case, for instance, with the development of future mid-size tactical cargo aircraft, or advanced radar technologies, both of which were addressed twice in the EDF research window.

A particular challenge in this respect has been finding the **right balance** between competitive **calls and ensuring continuity of effort via direct awards** once consortia, selected through a competitive process, have proven their capacity to deliver timely results during on-going projects. An additional key element is to **ensure a strong commitment by Member States** to R&D continuity. Beyond the EDF contribution, EDF development projects require complementary financing (‘co-financing’) from supporting Member States or from other sources (e.g. consortium own resources), to fully cover the projects’ costs. The demonstration of such co-financing is an eligibility condition for development projects and was set-up to incentivise the leveraging of additional national contributions thus ensuring a commitment of Member States to uptake the R&D results. With the progress of programme implementation, and with follow-up projects reaching higher stages of development, there has been an increase in the required co-financing, both in terms of the amount and share, with particularly high values in recent years. Development projects face serious **challenges to establishing the full co-financial framework**. For some projects co-financing is still not in place several years after the projects have started, leading to serious delays. Regarding the issues that may explain the lengthy process of setting up co-financing frameworks, Member States have reported difficulty in agreeing on the necessary Memoranda of Understanding and user rights, which in many cases are a prerequisite to signing national cofinancing contracts. **Co-financing remains therefore an important point of attention** for EDF implementation.

Towards procurement of projects outcomes

The EDF will prove successful if the Member States procure the capabilities that the Fund helps develop. Despite the early stage of EDF implementation, there are positive signs about the procurement potential for projects’ results, with some procurements already materialising. Half of the Member States consulted during the evaluation noted that EDF, EDIDP or PADR project results were already being procured at national level or are likely to be procured soon while the rest of the respondents stated that it was too early to provide a definitive answer.

¹⁰ Through e.g. financial support to third parties under specific call topics, or through hackathons.

Project box: European Patrol Corvette

The EDF project European Patrol Corvette (EPC) supports the development of a corvette-class vessel capable of performing a wide range of missions in future maritime operational contexts. Four EU Member States (as of November 2024: FR, IT, ES, EL) have formally expressed interest in procurement, and some of them have already allocated **procurement funds in their national capability plans**. The total EDF contribution is significant and has ensured strong project continuity. **Procurement contracts are expected for a double-digit number of vessels** and there is growing interest from other Member States.

Furthermore, first project outcomes have **started entering the armed forces of EU Member States and are making a difference on the battlefield**. This includes critical areas such as sea mines warfare solutions, unmanned systems or cyber defence. Some of the technologies developed with EU support are already in use in Ukraine.

Project box: Integration of project result into the navies of Member States

Innovative sea mine warfare solutions for delivering better, faster, safer and more resilient mine countermeasure operations: The design, prototype and demonstration of a system of systems composed of unmanned autonomous toolboxes, intelligent platforms, sensors and their decision support, was developed with the support of the projects MIRICLE and E=MCM and integrated onboard a **new class of mine countermeasure vessels jointly procured by the Dutch and Belgian navies** (12 ships ordered, with potential for other operators). The first ship of the class is planned to enter service with the Belgian navy in 2025.

Project box: Project outcomes used in Ukraine

The EDIDP project iMUGS supports the development of autonomous capabilities of existing platform to address a large range of missions. The platform is in operational use in Ukraine for minefields clearing, casualty evacuation, and logistics. Autonomous surveillance and threat recognition solutions developed under the project AI4DEF are being used by Ukrainian armed forces.

3. TRANSFORMING DEFENCE THROUGH INNOVATION: MAINTAINING A COMPETITIVE EDGE

To remain competitive, the EU must develop a defence innovation ecosystem. Accelerating the transformation of defence through **innovation, including in disruptive technologies**, has therefore been actively supported by the EDF under the ‘**EU Defence Innovation Scheme**’ (EUDIS). With an overall budget of EUR 1.5 billion until 2027, i.e. around 20 % of the EDF budget, it is expected to be complemented with EUR 400-500 million from other public and private sources.

EUDIS measures include dedicated non-thematic R&D calls as well as the **introduction of novel mechanisms** such as ‘Financial support to third parties’ with acceleration support in specific technology domains, strengthened synergies between EU-funded civil and defence research, ‘Technological challenges’ and support to high-risk/high-return disruptive technology research. Additionally, a **set of innovative support services for SMEs and start-ups** has been gradually developed. It includes defence hackathons, business coaching, acceleration support, matchmaking services, and the set-up of a Defence Equity Facility through the European Investment Fund to unleash capital to finance R&D intensive companies.

EUDIS measures also includes **spin-in calls** for proposals. They leverage technologies with dual-use potential from civil EU-funded R&D (e.g. Horizon Europe), enabling their

adaptation to defence applications. So far, the EDF spin-in calls have addressed the areas of cyber, energy and power systems, high-performance materials, electronic components, space and autonomous systems. At the same time, the EDF ensures synergies with the **EU Space Programme** by funding the development of technologies, products and capabilities that will make use of, complement or interface with services provided by the EU Space Programme's components. Similarly, more than 20 **Horizon Europe** projects have been found to have strong synergies with defence. Since 2024, the European Innovation Council (EIC), via its Transition Funding Scheme – which helps turn research outputs into proof-of-concept and beyond – has welcomed spin-in proposals that build directly on EDF/PADR generated results.

The lessons from the Russian war of aggression against Ukraine and rapid technological progress, in addition to the adjustments that they contributed to in the EDF capability development areas, have raised expectations that the **EDF also needs to provide faster, leaner processes to integrate innovative defence solutions**. Accessible opportunities should be created to support projects that bring fast solutions that replicate the success of the quick innovation life cycle developed in Ukraine, which includes constant feedback from the final user on the battlefield (real-life testing). Considering the long-term nature of the defence R&D projects under the EDF, the EU defence innovation ecosystem is missing an opportunity to benefit from the knowledge of Ukrainian industry and its armed forces.

At the same time, it is vitally important for the success of the programme to keep the right balance and ensure that the EDF addresses future, long-term defence R&D needs. Other EU defence instruments, such as ASAP, EDIRPA, and the Commission proposal for EDIP, complement the EDF's focus by addressing immediate priorities and emergency needs. As highlighted by a think tank: **“the EDF is a long-term programme and it's a good thing for it to stay just as relevant.”**

4. THE SOCIO-ECONOMIC RETURNS OF DEFENCE R&D

The EDF is expected to deliver a clear value for money by generating significant positive productivity effects for the economy and society. This is indicated by a macroeconomic study carried out by the Joint Research Centre¹¹. While it faces important limitations due to the early stage of programme implementation, the study provides valuable insight into the expected socio-economic results of the fund. The EDF is projected to achieve a maximum impact of a +0,025% increase in EU GDP in 2030 compared to the baseline scenario without the EDF, thanks to the combination of increased private investment and higher total factor productivity. This corresponds to a maximum increase of EUR 2,954 million of GDP in 2030 and the creation of an additional 32,413 jobs across the EU. As the EDTIB is estimated to directly employ around 500,000 people, this data illustrates the solid impact of EDF for the economy. In addition, there are **further potential benefits** for the EU economy and security environment resulting from the EDF investments. The EDF intervention strengthens the innovativeness and competitiveness of the EU industry, opening new market opportunities, including beyond defence. It leads to more efficient R&D spending (fewer gaps and overlaps, bigger scale, more risk-taking), including in terms of interoperability, compared to national and potentially duplicating approaches. It strengthens the security of the EU and its influence in the world, including on setting standards. Additional positive socio-economic effects of the EDF were highlighted during the interim evaluation consultation. Stakeholders highlighted that the EDF has led to a larger level of ambition than what would have been possible at national level, with projects with greater research potential or which entail the development of large capabilities that the defence industry would not have otherwise been capable of

¹¹ *The RHOMOLO macroeconomic impact assessment of the EDF 2021-2027 (2025), JRC Seville*

undertaking. Most of the defence industry consulted signalled increased organisational growth thanks to the EDF. Defence industry representatives noted that engineers, scientists and other experts find interesting work opportunities through EDF initiatives that address the skills dimension.

5. SIMPLIFICATION

As the EDF evolves, the Commission has continuously integrated lessons learned. This has led to a **continuous simplification** of the programme's implementation. Consulted stakeholders have highlighted the smooth functioning of the EDF: the recurring remark in the consultations with beneficiaries was that the EDF has become a simpler programme to apply to and work with as it has become better known over the years. This is also valid when comparing the EDF to precursor programmes as the Commission, Member States and beneficiaries have collectively drawn lessons and established practices that work well and have become routine.

Notable improvements include the introduction of fully electronic submission and project management supported by formatted, tailored templates to handle all aspects of the EDF Regulation in a more standardised approach. Year after year, the EDF work programmes and EDF calls are published earlier, allowing applicants longer to prepare proposals, secure required support from Member States and apply for funding. The time needed to carry out the evaluations has been reduced, and overall, the vast majority of consulted beneficiaries have stated that the project implementation stage is more efficient with the EDF than in precursor programmes, with improved procedures and simplification measures.

While much has already been done to simplify EDF implementation, there is still room for improvement. The consultations have led to further ideas on simplification in the short- (incl. via the Defence Omnibus) and longer-term.

6. CONCLUSION

The rapidly deteriorating strategic context has demonstrated that the EDF is not a 'should have' but a 'must have' programme, as it is necessary to invest more in defence R&D now to ensure that future state-of-the-art capabilities are delivered on time. The EDF has successfully brought together defence R&D under a single, medium to long-term and well-recognised programme, contributing to a coherent and more integrated EU defence R&D landscape.

While EDF projects have not yet had time to produce their full expected results and impact, it is already clear that the fund has led to effective support throughout the entire capability R&D cycle and has encouraged strong cross-border cooperation, leading to efficiency gains.

Given the considerable financial and technological challenges facing defence R&D, the need for more strategic, multiannual planning that provides industry with predictability has become an important point for the future of the programme. Furthermore, the Commission, in close cooperation with the Member States, will work on developing a stronger link with procurement (where relevant jointly) by the Member States' armed forces of the results and outcomes of EDF projects.

The EDF has continuously integrated lessons learned from previous years. This has led to the continuous simplification of the programme's implementation, and the Commission will continue working towards a simpler, more user-friendly and more impactful EDF.

The insights and key conclusions from the EDF interim evaluation are set to play a critical role in shaping the remaining years of implementation of the fund and inform the policy decisions for future EU defence R&D initiatives.