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EVALUATION

Interim Evaluation of the European Defence Fund

Accompanying the document

REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE 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

{COM(2025) 299 final} - {SEC(2025) 169 final}

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Glossary

Term or acronym	*Meaning or definition*
ASAP	Act in Support of Ammunition Production
CARD	Coordinated Annual Review on Defence
CDP	Capability Development Plan
CSDP	Common Security and Defence Policy
CFSP	Common Foreign and Security Policy
DEF	Defence Equity Facility
DG DEFIS	Directorate-General for Defence Industry and Space
EEAS	European External Action Service
EDA	European Defence Agency
EDF	European Defence Fund
EDIDP	European Defence Industrial Development Programme
EDIP	European Defence Industry Programme
EDIRPA	European Defence Industry Reinforcement through common Procurement Act
EDIS	European Defence Industrial Strategy
EDTIB	European Defence Technological and Industrial Base
EIF	European Investment Fund
ENDR	European Network of Defence-Related Regions
EUMS	EU Military Staff
EUDIS	EU Defence Innovation Scheme
EUDIS BAMM	EUDIS Business Accelerator and Matchmaking
GAP	Grant Agreement Preparation
MAP	Multiannual Perspective
MFF	Multiannual Financial Framework
Mid-caps	Medium Capitalisation Enterprises
MoD	Ministry of Defence
NATO	North Atlantic Treaty Organization
OSRA	Overarching Strategic Research Agenda
PADR	Preparatory Action on Defence Research
PESCO	Permanent Structured Cooperation
R&D	Research and Development
R&T	Research and Technology
RTO	Research and Technology Organisation
SDG	Sustainable Development Goal
SME	Small and medium-sized enterprise
STANAG	Standardisation Agreement
STEP	Strategic Technologies for Europe Platform
TRL	Technology Readiness Level
US	United States

1. INTRODUCTION

Purpose and scope of the evaluation

The European Defence Fund (EDF) is the EU's defence research and development (R&D funding programme for 2021-2027, with a budget of EUR 7.3 billion[1]. It 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).

This staff working document presents the results of the interim evaluation of the EDF in line with the requirements of Article 29 of the Regulation establishing the EDF[2] and the Commission's Better Regulation Guidelines[3]. The evaluation assesses the effectiveness towards achieving EDF's objectives, its efficiency, relevance, internal coherence and coherence with other initiatives, and added value. The document also addresses the lessons from its precursor programmes, conducting a more detailed analysis of the EDIDP in line with Article 17 of Regulation (EU) 2018/1092.

This interim evaluation covers the period 30 June 2021[4] to 31 July 2024 and provides information on the indicators[5] and parameters[6] established in the EDF Regulation. It also includes earlier data related to its precursor programmes as well as more recent EDF data covering the second half of 2024 and early 2025 where available (e.g. related to the 2025 EDF work programme, published in January 2025).

The evaluation is based on the triangulation of evidence from **quantitative and qualitative methods**. This includes: (i) data from programme and project implementation, including the parameters[7] in Article 29 of the EDF Regulation and the indicators[8] in its Annex; (ii) internal knowledge from project, legal and financial officers as well as from other Commission services; (iii) relevant Commission policy documents; (iv) DEFIS Annual Activity Reports[9] and Programme Performance Statements[10]; (v) a

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1 Originally set at EUR 8 billion for the period 2021-2027, the total EDF budget currently stands at EUR 7.3 billion, as it contributed to support the Secure Connectivity Programme (IRIS[2], with EUR 400 million), the Act in Support of Ammunition Production (ASAP, with EUR 260 million), the European Defence Industry Reinforcement through the Common Procurement Act (EDIRPA, with EUR 10 million) and the proposal for a European Defence Industry Programme (EDIP, with EUR 1.5 billion), whereas the Strategic Technologies for Europe Platform (STEP) provided an additional EUR 1.5 billion to the EDF budget for 2024-2027.

2 Regulation (EU) 2021/697

3 More information available at http://ec.europa.eu/smart-regulation/guidelines/toc_guide_en.htm

4 The publication date of the first EDF work programme.

5 Indicators based on the Annex to the EDF Regulation.

6 Required information under Article 29 of the EDF Regulation.

7 Data on the parameters from annual EDF work programmes, submitted proposal information (Part B, including detailed budget tables), data from eGrants Data & Results (eGDR), call closure reports, ethics screening procedures, Participant Data Management and SyGMa/Compass.

8 Core indicators include main metrics in benchmarking the EDF's operational trajectory (Annex I, EDF Regulation). These 'core indicators' are used to report on the progress of the EDF towards the achievement of the specific objectives laid down in Article 3(2) of the EDF Regulation.

9 https://commission.europa.eu/strategy-and-policy/strategy-documents/annual-activity-reports_en?f%5B0%5D=oe_publication_authors%3Askos_concept%7Chttp%3A//publications.europa.eu/resource/authority/corporate-body/DEFIS

10 https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/programme-performance-statements/european-defence-fund-performance_en

macroeconomic cost-benefit analysis conducted by the Joint Research Centre estimating the economic and societal impact of the EDF. The **qualitative** evaluation methods mobilised feedback from an extensive and targeted stakeholder consultation carried out between January and December 2024. This allowed the Commission to gather input from around 330 entities via around 100 questionnaire replies and 35 position papers, as well as 20 meetings and workshops. These consultations included:

1. Six workshops, three with representatives from Member States and Norway[11], two with EDF and precursor programme beneficiaries (one with large industry and one with SMEs and mid-caps and research and technology organisations/RTOs), and a workshop with academia and think tanks.
2. Targeted bilateral meetings with stakeholders and production of consolidated position paper representing large industry, SMEs, mid-caps and RTOs to channel lessons learned and recommendations for the EDF thanks to the involvement of the Commission Expert Group on Policies & Programmes relevant to the EU Space, Defence and Aeronautics Industry (Commission Expert Group)[12].
3. Four surveys and questionnaires: for EDF National Focal Points, for members of the European Network of Defence-Related Regions (ENDR), for regional organisations, and for non-EDF beneficiaries.
4. Bilateral discussions with the European External Action Service (EEAS)/EU Military Staff (EUMS), European Defence Agency (EDA), the Organisation for Joint Armament Cooperation (OCCAR), and with NATO.
5. A public call for evidence.

An external contractor prepared six targeted research pieces, two mapping exercises and a cost-benefit analysis[13]. While the EDF is still in a relatively early stage of implementation (e.g. no EDF projects has been completed at the time of this evaluation), the stakeholders consulted include a representative part of the European Defence Technological and Industrial Base (EDTIB), as well as key stakeholders. The feedback of stakeholders as a primary source of information provides a comprehensive picture of EDF's strengths and areas for improvement.

In terms of **data limitations**, it is important to note that the first EDF projects started only in early 2023 because of the time needed to set up the programme and prepare the work programmes together with Member States, launch the calls and evaluate the proposals received, and sign the grants[14]. The reporting on EDF performance indicators is thus delayed by two years. This means that only indicators related to the implementation of EDF 2021 and 2022 projects have been publicly reported so far and there is little quantitative assessment possible on EDF project outcomes. Also because of the confidentiality of data on the operations and performance of the defence sector, it is challenging to collect and report on the effects of the EDF support for the beneficiaries, and to put it in perspective with non-beneficiaries or even in the wider European or international context. Furthermore, because of the very nature of investments in defence

11 Norway is currently the only EDF associated country.

12 Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024. On 30 April 2021, DG DEFIS set up a Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry. This expert group, in its defence configuration, comprises around 60 members including defence companies, research organisations and NGOs. In their advisory role, the group provided input to the EDF interim evaluation.

13 *External study supporting the EDF Interim Evaluation*

14 Following the publication of calls for proposals in year n, projects are selected for funding during year n+1 and grants are signed by end of year n+1 or, in some indirect management cases, during year n+2.

research and capacities, the EDF supports projects that will deliver concrete measurable results mostly in the long term. After only a couple of years of operations and given the fragmented situation of European defence R&D spending before the EDF started, the most telling signals of progress towards the objectives set therefore come from the collaborations set up between key defence partners, their pooling of resources towards shared objectives, and their commitment for procurement of the solutions to be developed. Section 4.1.1 'Effectiveness' relies therefore on first signals of progress towards delivery based on the collaborations set up and the funding mobilised and key exemplary projects, on feedback from participants and stakeholders, as well as on more concrete project outcomes and lessons from the precursor programmes, which are further developed in Annexes VI and VII of the report. The difficulties in capturing some long-term indicators, such as number of patents and intellectual property rights (IPRs), are further detailed in Annex VIII[15]. The final evaluation of the EDF will allow to shed more light on the concrete innovative solutions developed with the support of the programme, taking also the specificities of the defence sector into account, and based on continuous improvement of the monitoring system, also benefitting from the integration of the EDF in the e-Grants system.

The lack of benchmarks or baseline to compare performance is a wider problem. While there have been a limited number of bi- and multinational collaboration R&D projects in the past, including in the context of the EDA, there has been no programme similar to the EDF in terms of scope and size[16]. The EDF indicators and parameters established in the Regulation therefore do not include baseline values (i.e. values before the programme) nor target values (i.e. expected values at the end of the programme). The points of comparison therefore rely on improvements as compared to precursor programmes, additional qualitative indicators and other indicators, and on an analysis of what would have happened had the EDF not existed.

2. WHAT WAS THE EXPECTED OUTCOME OF THE INTERVENTION?

2.1 Description of the intervention and its objectives

The EU defence industrial sector is complex and highly specialised, characterised by a monopsonistic demand, where single buyers, typically national governments, drive the market. While the EDTIB is composed of 27 Member States' markets, the main European defence primes remain concentrated in only a few countries. With few exceptions of integrated EU companies, the national defence markets represent a collection of national companies of all sizes: from large, multinational companies with considerable large home markets to small national SMEs; from defence specialists to companies with primarily civil markets which have defence interests. Notwithstanding the fact that the EDTIB has several globally competitive companies capable of producing the most advanced and complex systems, its ability to unleash its full potential is undermined by years of underinvestment, despite the progress made over the last years. This has led to reduced competition and innovation, as well as a high degree of fragmentation both at the demand and supply side. Furthermore, the EU defence market

[15] Patents are usually registered (if registered at all) in the last few years or even after the conclusion of R&D projects, hence the latency in obtaining data for this interim evaluation. To mitigate such an issue, questionnaires to beneficiaries included questions on IPRs or patents generated through their participation in EDF actions, but no responses were provided on the subject matter.

[16] The performance of the EDF has to consider its role in the wider defence R&D support system in particular as regards its positioning against (and impact on) the national and regional policy initiatives.

is often hindered by barriers to entry, including high R&D costs, strict regulatory requirements, and limited access to funding.

The **general objective** of the EDF is to address these challenges by fostering the competitiveness, efficiency and innovation capacity of the European defence industry, which contributes to EU strategic autonomy and its freedom of action, by supporting collaborative actions and cross-border cooperation between legal entities throughout the EU, in particular SMEs and mid-caps, as well as by strengthening and improving the agility of both defence supply and value chains, widening cross-border cooperation between legal entities and fostering the better exploitation of the industrial potential of innovation, research and technological development. To address the identified problems and achieving the above general objective, two **specific objectives** have been established in the Regulation:

> (a) Support **collaborative research projects** that could significantly boost the performance of future capabilities; aiming at maximising innovation and introducing new defence products and technologies, including disruptive ones
> (b) Support **collaborative capability development projects** of defence products and technologies, thus contributing to greater efficiency in defence spending within the Union, achieving greater economies of scale, reducing the fragmentation of defence products and technologies throughout the Union and leading to greater interoperability between Member States' capabilities

More generally, the EDF plays a crucial role in supporting the EU's strategic autonomy and freedom of action by developing defence technologies and products that reduce dependence on third countries.

The EDF operates with a **budget of EUR 7.3 billion**[17] for its seven-year duration under the EU multiannual financial framework (MFF). This allocation enables it to dedicate an average of around EUR 1 billion annually to fund R&D projects. For capability development actions, the EDF is designed to integrate co-financing thereby leveraging national contributions. The Fund creates a collaborative framework that amplifies the impact of defence-related investments.

In terms of **implementation structures**, the Directorate-General for Defence Industry and Space (DG DEFIS) is responsible for implementing the programme. The programme is under direct and centralised management by the Commission. This includes the possibility to delegate project implementation (indirect management) to relevant bodies on an ad hoc basis. This is the case with the EDA, which lends its expertise in specialised defence Research & Technology (R&T) projects, and OCCAR for certain defence capability projects that are already framed by Member States through the organisation.

In terms of **programming and governance**, as national governments and armed forces are the only buyers and users of defence technologies and products, the **EDF is primarily user-centric**, driven by the needs of the armed forces of the Member States and Norway. The EDF work programmes are therefore prepared, and voted, within a dedicated **EDF Programme Committee** consisting of representatives of the Member States, Norway, as well as EEAS/EUMS and EDA. The work programme development builds on the defence priorities commonly agreed by the Member States under the Common Security and Defence Policy (CSDP) and Capability Development Plan (CDP), taking also into account NATO priorities. The preparation of the call topics' description,

[17] The initial Commission proposal provided for a budget of EUR 13 billion for the EDF.

including functional requirements, is defined in close cooperation with national experts from the Member States, Norway and EDA.

The **annual work programme** serves as the operational backbone of EDF's implementation. Structured around **17 categories of actions** (15 thematic categories of actions and two horizontal categories for disruptive technologies and dedicated calls for SMEs), focusing on defence excellence[18], emerging challenges[19] and defence boosters and enablers[20], the **work programmes** guide the allocation of funds. They cover the full range of defence technologies and capabilities in all military domains (i.e. air, land, sea, space and cyber). A key tool for maintaining a long-term perspective is the **Multiannual Planning** (MAP), which aids in prioritising programming over extended periods, thereby promoting strategic consistency.

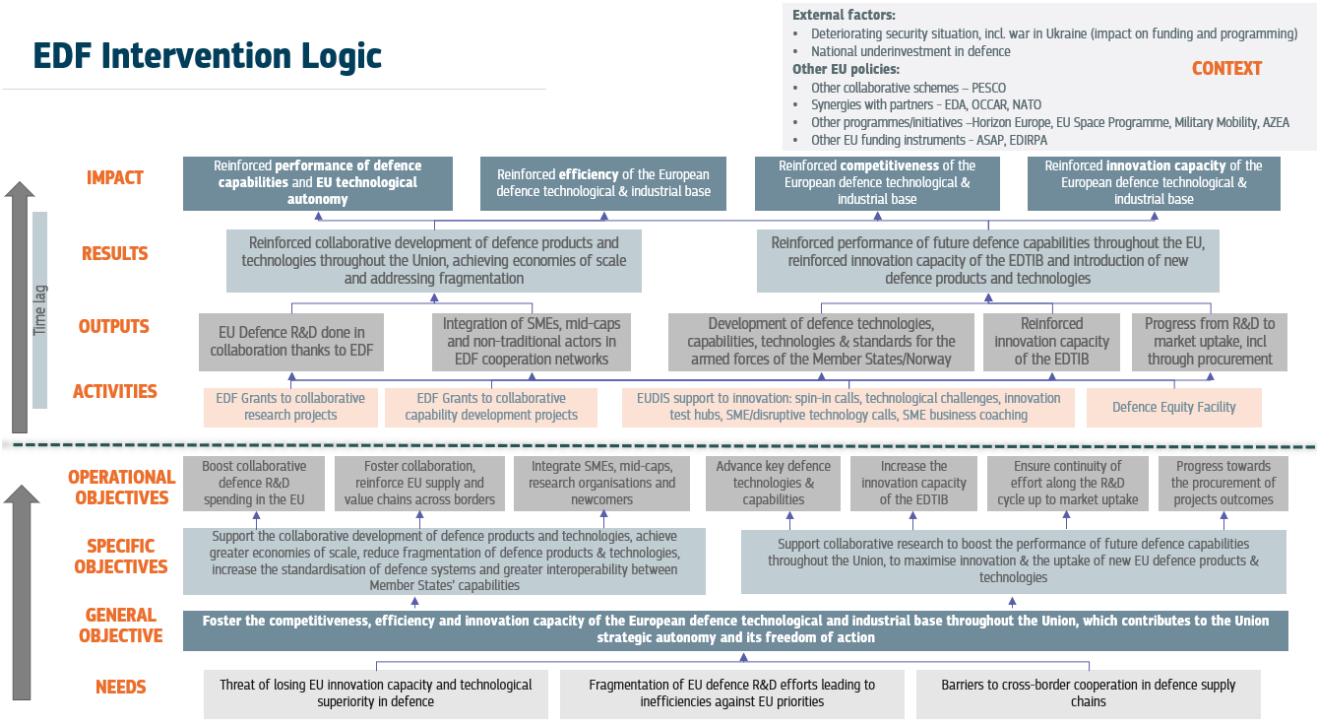


Figure 1 – EDF INTERVENTION LOGIC. Source: DG DEFIS

For the purposes of the interim evaluation, the intervention logic in Figure 1 describes the links between the problems to be tackled by the EDF, the objectives to be achieved and the expected outputs, results and impacts. It also highlights external factors **that have arisen during the programme's intervention** and influence the evolution of the intervention. This relates to the rising security threats amid growing geopolitical tensions, in particular following the Russian aggression against Ukraine.

[18] Defence excellence, to improve the ability to deliver and sustain ambitious defence systems such as air combat, air and missile defence, land combat, force protection and mobility, naval combat, underwater warfare and simulation and training.

[19] Emerging challenges to shape a multidimensional and holistic approach to the modern battlespace, such as defence medical support, chemical, biological, and radiological nuclear (CBRN), biotechnology and human factors, information superiority, advanced passive and active sensors, cyber.

[20] Defence boosters and enablers that provide a key technological impetus in the EDF and are relevant in all capability areas, such as digital transformation, energy resilience and environmental transition, materials and components, disruptive technologies and dedicated calls for SMEs for innovative and forward-looking defence solutions.

The intervention logic as shown in the figure is inspired by the EDF impact assessment, namely as concerns the problem drivers. This relates, for instance, to the threat of losing innovation capacity or the excessive fragmentation of the EDTIB. It also describes the EDF's objectives that the intervention wants to pursue to address the problem drivers. Additionally, it sets out the policy inputs or 'means' put in place to achieve the objectives. As a spending programme, this means the budgetary input of EUR 7.3 billion, as well as the institutional structures and the human resources to implement the programme. This also relates to the programming of the fund itself acts as the key input to define how EU budgetary support will be allocated. Finally, the intervention logic sets out: (i) Outputs; meaning what is expected to be generated directly by the supported projects in the short term; and (ii) Results/Impacts; meaning what the intervention expects to achieve in the medium to long term.

In more operational terms, as depicted in the intervention logic, progress towards delivering on the EDF specific objectives is assessed for this evaluation according to early outputs and results towards:

- (a) Boosting the collaborative development of defence products and technologies throughout the Union, achieving economies of scale and addressing fragmentation, identifying signals of progress on:
    1. Boosting collaborative defence R&D spending in the EU
    2. Fostering collaboration, reinforcing EU supply and value chains across borders
    3. Integrating SMEs, mid-caps, research organisations and newcomers
- (b) Boosting the performance of future defence capabilities throughout the EU, reinforcing the innovation capacity of the EDTIB and introducing new defence products and technologies, identifying signals of progress on:
    - Advancing key defence technologies and capabilities
    - Increasing the innovation capacity of the EDTIB
    - Ensuring continuity of effort along the R&D cycle up to market uptake
    - Progressing towards the procurement of projects outcomes

The EDF is organised through **two windows of actions:**

- The first window is focused on **research actions** contributing to the advancement of knowledge, products, and technologies relevant to defence. This segment of the Fund is expected to engage various entities such as SMEs, RTOs and academia.
- The second window is directed **towards capability development actions**. This encompasses initiatives aimed at developing capabilities of the defence sector. The participants in this category are expected to include primes (leading defence contractors), SMEs and mid-caps (medium capitalisation entities).

The EDF Regulation envisages various forms of EU funding to support its objectives:

- **Grants to support R&D projects**: The primary mode of EDF financial support are grants provided to eligible consortia, materialised through grant agreements. The EDF funding is allocated to the following spectrum of actions: Generating Knowledge, Integrating Knowledge, Studies, Design, System Prototyping, Testing, Qualification, Certification, Efficiency Enhancement.
- **EU Defence Innovation Scheme (EUDIS) actions to support innovation**: to attract new players to the defence sector and lower entry barriers to access EDF funding, the EDF funds a set of innovative actions in complementarity to specific calls for SMEs.

- **Pre-commercial procurement to support future acquisition**: The EDF Regulation allows for grants to be extended to Member States seeking to engage in pre-commercial procurement. This mechanism intended to facilitate the exploration of innovative solutions and technologies has not been used so far.
- **Blending operations to support private sector involvement**: Through the Defence Equity Facility, the EDF supports private equity and venture capital funds investments in innovative technologies to leverage resources from the private sector.

2.2 Point(s) of comparison

As the EDF is a completely new programme and a first full MFF EU intervention in defence R&D, there are **no quantifiable points of comparison**. As highlighted in the EDF impact assessment '*a target value to achieve is not set yet as no previous experience is available*'[21] and the long-term effects of the EDF will not be measurable within the time span of one MFF. Also, data on the overall performance of the defence sector is limited, making it difficult to compare with the wider economy. Consequently:

- Whenever possible, a quantification is done by utilising the **first year of the EDF as a point of comparison**.
- The interim evaluation relies heavily on **qualitative inputs** and utilises as **further points of comparison PADR and EDIDP**: consulted stakeholders were asked about their experiences in precursor programmes or in the first year of the EDF implementation to understand improvements made.

The related **medium-term success indicators and output indicators** are:

- **Quantified to the extent possible:** as an example, while the 'number and value of projects' is quantifiable, the 'number of projects which have led to subsequent procurement' is impossible to quantify at this point in time. There will be more data available for the final evaluation of the programme.
- **Addressed in consultations:** beneficiaries and Member States were all asked, for example, whether project outcomes led to subsequent procurement and use.

The related **long-term success indicators and impact indicators are:**

- **Estimated or projected**: as an example, a Joint Research Centre macroeconomic study was conducted to estimate the impact of the EDF in terms of employment in the EU.
- **Addressed in consultations**: in most cases, consulted actors stated that it was too early to assess, for example, whether the EDF was contributing to an increased value of the undertaking's 'defence R&D turnover' and could not reply on the 'number of new patents'. However, it was possible to obtain general qualitative assessments on whether the EDF is strengthening the EDTIB's competitiveness.

[21] Section 5.1 and Section 5.3: 'Implementation based indicators and additional indicators collected from applicants are however not sufficient to establish a baseline for the EDTIB to compare with. To date there is no reliable comparable data for the EDTIB'.

3. HOW HAS THE SITUATION EVOLVED OVER THE EVALUATION PERIOD?

3.1 Current state of play

€5.4 billion of EU budget committed to defence R&D (including 2025 work programme)	**50% of collaborative defence research** in the EU **funded by EDF**	**162 EDF projects** involving **1 366 unique participants** from 26 Member States/Norway	**19 participants**[22] from **8 Member States/Norway** on average in an EDF project	**43% of participants are SMEs**	**32%** average proposal **success rate**

Table 1 - KEY EDF NUMBERS

As explained above, the EDF annual work programmes set out the R&D topics supported by the Fund in the relevant year. As of March 2025, **five 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 EU[23]. This includes around **half of the total collaborative defence research** in the EU (see Figure 2).

As of March 2025, **162 EDF R&D projects are ongoing**. The majority are implemented directly and centrally by the Commission (DG DEFIS), whereas 18% are managed indirectly by EDA and OCCAR. With regard to the precursor programmes, 24 out of 44 EDIDP projects are ongoing, and all (18) PADR projects have ended.

EDF projects involve **1 366 unique participants**[24] **from all Member States (except Malta) and Norway**. This includes the strong participation of SMEs (43% of the unique entities), as well as mid-caps (4%)[25]. Entities controlled by non-associated third countries or by non-associated third-country entities are involved in 24% of the EDF projects awarded. While EDF requires cooperation by at least 3 different legal entities from at least 3 different Member States/Norway, the **average EDF consortium consists of 19 participants from 8 countries.**

The **average proposal success rate is 32%**, while the non-thematic calls for SMEs and disruptive technologies are the most competitive. In terms of effort dedicated to research and to development, the EDF follows closely the indicative distribution set out by the EDF Regulation, namely **1/3 for research and 2/3 for development**.

On synergies with projects developed in the context of **Permanent Structured Cooperation** (PESCO), 41 of the EDF projects (i.e. 60% of EDF development projects) are linked with one or more PESCO projects, supporting 33 PESCO projects.

In line with the requirements of the EDF Regulation, **4.3% of EDF awarded budget supports disruptive technologies** for defence applications that will strengthen Europe's long-term technological leadership and contribute to cutting-edge high-end defence products, in line with military needs.

[22] Figure includes affiliated entities and subcontractors.
[23] Together with the national defence R&D investments in France and Germany.
[24] Beneficiaries, affiliated entities and subcontractors. DG DEFIS, European Commission. Extracted in February 2025 (data from 2021-December 2024).
[25] Based on SME and mid-cap self-declarations.

Between 2024 and 2027, **at least EUR 1.5 billion will have supported critical technologies in the areas of deep and digital tech, biotech and clean tech** under the Strategic Technologies for Europe Platform (STEP).

3.2 Key additional monitoring information

Programme performance data (pursuant to the Annex of the EDF Regulation) collected through the relevant data monitoring arrangements has helped to inform the analysis for the EDF interim evaluation, in particular as regards the implementation of the programme. For instance, these indicators have helped to monitor aspects like the outreach and inclusiveness of the EDF, the level of cross-border cooperation, and the coherence of EDF programming with the capability development priorities of EU Member States. However, as indicated earlier, because of the confidentiality of data on the operations and performance of the defence sector, it is difficult to collect and report on the effects of the EDF support for the beneficiaries, and to put it in perspective with non-beneficiaries or even the wider European or international context. Furthermore, because of the very nature of investments in defence research and capacities, the EDF supports projects that will deliver concrete measurable products or services mostly in the long term. The difficulties in capturing long-term indicators at this stage of EDF implementation are further detailed in Annex VIII[26]. The final evaluation of the EDF will allow to shed more light on the concrete innovative solutions developed thanks to the programme, taking also the specificities of the defence sector and defence data into account, and based on continuous improvements of the monitoring system, also benefitting from the integration of the EDF into the e-Grants system.

The following table provides additional monitoring data to be covered by the EDF interim evaluation pursuant to Article 29 of the EDF Regulation.

Relevant monitoring data	Values[27]	Comments	Article Ref.
Number of independent experts used for the evaluation of EDF proposals 2021 to 2023	EDF 2021 – 113 EDF 2022 – 117 EDF 2023 – 150	Some experts may be contracted in more than one year	Art.29 (2)(a)(i) - Governance of the Fund: provisions related to independent experts
Total amount paid to experts involved in the evaluation of EDF proposals 2021 to 2023	EUR 2.32 million for 380 contracts		
Number of proposals that underwent ethics screening	142[28]	Screening is performed when ethics issues are flagged during pre-screening of proposals	Art.29 (2)(a)(ii) - Governance of the Fund: implementation of ethics

[26] Patents are usually registered (if registered at all) in the last few years or even after the conclusion of R&D projects, hence the latency in obtaining data for this interim evaluation. To mitigate such an issue, questionnaires to beneficiaries included questions on IPRs or patents generated through their participation in EDF actions, but no responses were provided on the subject matter.

[27] Collection date: 31 July 2024.

[28] Only proposals that are on the funding or reserve list (and have been found to have ethics issues either in the self-assessment or in the pre-screening performed by the POs) are screened.

Relevant monitoring data	Values[27]	Comments	Article Ref.
Number of proposals that underwent ethics assessment	6	Assessment is performed on proposals that pose serious or complex ethics issues	procedures
Lessons learned from the EDIDP and the PADR	n/a	Integrated in report, and see Annex VI and VII	Art.29 (2)(b) - Lessons learned from the EDIDP and the PADR
Commitments	27.5%	Including all EDF work programmes adopted before 31 July 2024	Art.29 (2)(c) - Implementation rates
Payments	14%	Payments made by 31 July 2024	
Number of awarded projects	162	Includes all projects awarded following EDF 2021, 2022 and 2023 calls	Art.29 (2)(d) - Project award results, including the level of involvement of SMEs and mid-caps and the degree of their cross-border participation
Total number of unique participants involved in EDF awarded projects	1366	As beneficiaries, affiliated entities, subcontractors or associated partners	
Number of unique SMEs and mid-caps participants involved in EDF awarded projects	SME: 598 Mid-cap: 61	Based on self-declared status and sampling verification	
Grant amount going to SMEs and mid-caps involved in EDF awarded projects	SME: EUR 577 million Mid-cap: EUR 182 million	Based on self-declared status and sampling verification	
Degree of their cross-border participation	See Section 4.1.1.2(ii)		
Rates of reimbursement of indirect costs[29]	- 25% for 80% of the participations - actual indirect costs for 20% of the participations	Participations of beneficiaries and affiliated entities (see Section 4.1.2.4 for more details)	Art.29 (2)(e) - Rates of reimbursement of indirect costs
Total EDF budget allocated to disruptive projects and calls	EUR 186 million (incl. 2024 work programme)	Includes all projects awarded following EDF 2021, 2022 and 2023 calls and all relevant budget from work programmes adopted by 31 July 2024	Art.29 (2)(f) - Amounts allocated to disruptive technologies in defence
Funding granted without competitive call pursuant to Article 195 of the Financial Regulation ('direct award')	EUR 80 million	Amount awarded to the project *HYDIS²: Hypersonic Defence Interceptor Study.* Under the precursor programme EDIDP, EUR 137 million out of EUR 500 million were granted as direct awards.	Art.29 (2)(g) - Funding granted in accordance with Article 195 of the Financial Regulation

[29] Ratio between indirect costs and direct costs (excluding direct eligible costs of subcontracting and support to third parties and any unit costs or lump sums which include indirect costs).

Relevant monitoring data	Values[27]	Comments	Article Ref.
Countries of origin of recipients	26 EU Member States (except Malta) and Norway	Place of establishment of legal entities	Art.29 (2)(last paragraph) - Countries of origin of the recipients, the number of countries involved in individual projects and, where possible, the distribution of the generated IPRs.
Number of countries involved in individual projects	8 (average)	Place of establishment of legal entities	
Distribution of the generated IPRs	No data available yet		

4. EVALUATION FINDINGS (ANALYTICAL PART)

4.1. To what extent was the intervention successful and why?

4.1.1 Effectiveness

This section provides an overview of the early progress made towards achieving the **objectives** as set out in the EDF Regulation **to foster the competitiveness, efficiency and innovation capacity of the European defence industry.** As depicted in the intervention logic in Figure 1, progress is assessed according to early outputs and results achieved towards achieving the specific objectives:

- Boosting collaborative development of defence products and technologies, achieving greater economies of scale, reducing the fragmentation of defence products and technologies throughout the Union, increasing the standardisation of defence systems and interoperability between Member States' capabilities;
- Boosting the performance of future defence capabilities throughout the EU, reinforcing the innovation capacity of the EDTIB and introducing new defence products and technologies.

More generally, the EDF plays a crucial role in supporting the EU's strategic autonomy and freedom of action by developing defence technologies and products that reduce dependence on third countries.

4.1.1.1 Boosting the collaborative development of defence products and technologies throughout the Union*, achieving economies of scale and addressing fragmentation*

This section assesses the degree to which the EDF has progressed towards reinforcing the efficiency of the European defence industry through the collaborative development of defence capabilities, the pooling of public and private resources along the R&D cycle, and the diversification of players in the EU supply and value chains.

a) Boosting collaborative defence R&D and R&T spending in the EU

Overall, the average annual funding of EUR 1.14 billion represents about 11% of total R&D expenditure in the EU[30]. Analyses of the EDF and its precursor programmes have

[30] Excluding co-financing under development actions. Taking as reference 2023 Total Defence R&D Expenditure of EUR 10.66 billion. See EDA Defence Data 2023.

concluded that as a result of these defence R&D programmes, the European defence market is showing concrete '*signs of consolidation*' [31].

Due to unavailability of detailed data on collaborative R&D in Europe, Figure 2 below focuses on collaborative Research & Technology (R&T spending (for EDF, data includes estimates for the funding of 'research' projects). Thanks to the EDF intervention, total EU **collaborative R&T spending is estimated to have more than doubled, increasing from around EUR 250 million in 2022 to around EUR 580 million in 2025**. As a reference, in 2022, Member States spent 7.2% of their total defence R&T expenditure on European collaborative projects, falling below the collective benchmark of 20% of the defence R&T[32]. With EDF's contribution in the next few years, the **percentage doubles**[33].

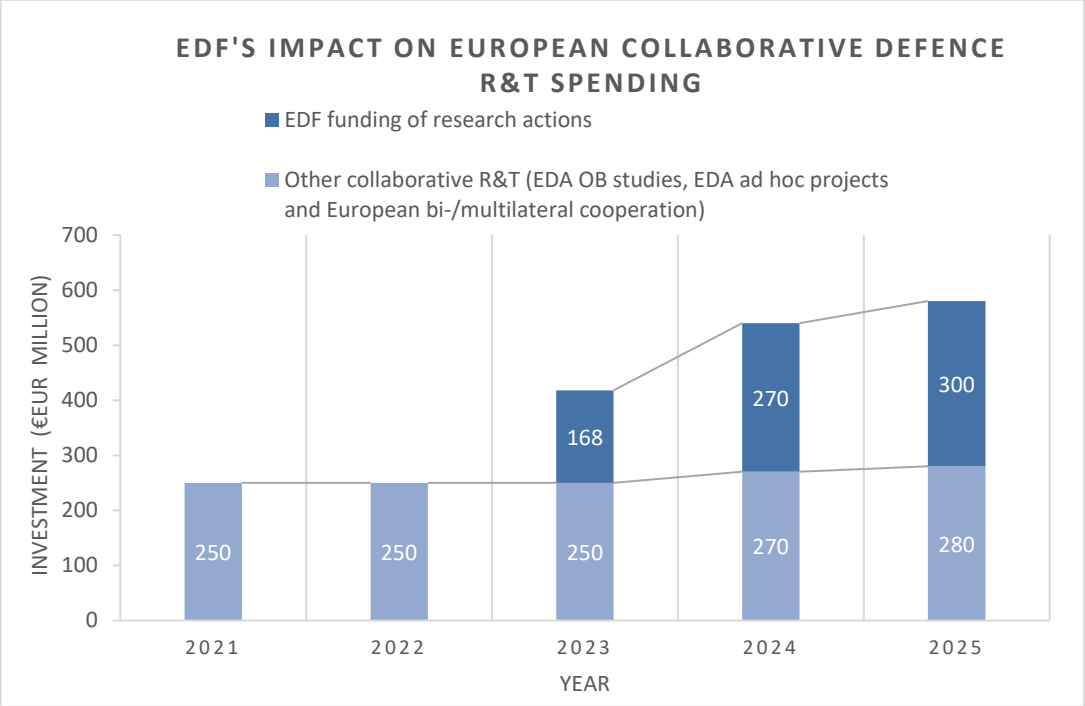


Figure 2 - EDF'S IMPACT ON EUROPEAN COLLABORATIVE DEFENCE R&T SPENDING[34]. Source: DG DEFIS, EDA

At national level, although legal entities from Member States with a large, well-established defence industries (such as FR, DE, IT and ES), are the strongest beneficiaries of EDF funding, in comparison with the most recent EDA data on national R&D[35] funding shows a **remarkable positive effect for all countries**, including for medium-sized and small-sized Member States and countries with a limited defence

31 Giumelli, F. and Marx, M. 2023. The European Defence Fund precursor programmes and the state of the European market for defence. Defence Studies, 23 (4). 589-607. https://www.tandfonline.com/doi/full/10.1080/14702436.2023.2277440.

32 Council recommendation of 15 October 2018 concerning the sequencing of the fulfilment of the more binding commitments undertaken in the framework of permanent structured cooperation (PESCO) and specifying more precise objectives – *see Commitment 3* (2018/C 374/01).

33 Supporting studies conducted in the context of the interim evaluation – further information in Annex II.

34 Data based on the EDA CARD Report 2024 (p. 13) with indicative amounts and EDF indicative payment profile for research actions.

35 European Defence Agency's Defence Data 2020-2021 Key Findings and Analysis.

industry. A comparison between the national R&D expenditure and EDF funding for entities from these countries (reference year 2021) shows that for 15 Member States (BE, BG, CY, EE, EL, ES, HR, HU, IE, IT, LT, LU, LV, PT, SI), in only its first year of operation, the EDF already provided funding similar or higher, in some cases significantly higher, to the total national defence R&D expenditure.

b) Fostering collaboration, reinforcing EU supply and value chains across borders

Through its incentives, the EDF **fosters unprecedented cross-border defence R&D cooperation across the EU, promoting mutual understanding and a shared culture among involved entities, thus helping defragment the EDTIB**. The EDF's impact on cross-border cooperation and strengthening of the supply chain has been recognised as 'extremely significant' by the defence industry and as 'very good' by applicants and beneficiaries. Furthermore, industrial ties established to pursue EDF calls are sometimes outlasting these efforts, with examples of certain consortia being granted national funding even without receiving EDF money, further highlighting the added value of the EDF in creating cross-border partnerships across the defence industry.

The EDF programme sees the participation of a very significant number (**1 366)** of **unique legal entities** and Figure 3 below illustrates the wide geographical distribution of entities involved in EDF projects. The EDF attracts participation across the EU, even from regions where the defence industry is not traditionally prominent.

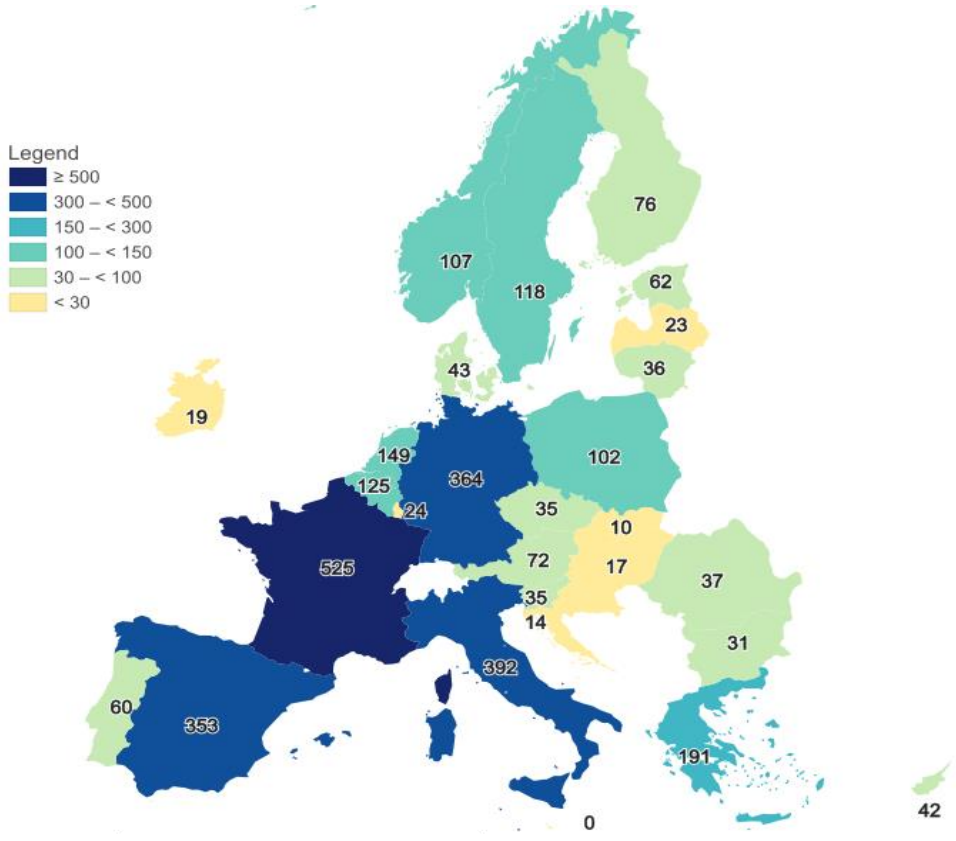


Figure 3 – GEOGRAPHICAL DISTRIBUTION OF ENTITIES PARTICIPATING IN THE EDF PROGRAMME (with duplications). Source: DG DEFIS

24% of EDF21-23 projects include at least one entity controlled by a non-associated third country or a non-associated third-country entity[36]. Such participation is allowed as long as the security interests of the Union and its Member States are preserved, and security guarantees are substantiated and approved by national authorities.

Consulted stakeholders were unanimous that the EDF has incentivised industry to explore new partnerships with entities from Member States they would not have cooperated with before. Member States consulted strongly agreed that the EDF provides opportunities for the participation of entities of all sizes from all EU countries, including entities from smaller Member States. A majority of consulted regional stakeholders also noted that the EDF has facilitated greater cross-border regional cooperation on defence R&D and even strengthened existing cooperation at the regional level within local defence clusters.

Throughout the consultations, 'new types of cooperation' were described as having been created thanks to the EDF. EDF beneficiaries have stated that these 'new types of cooperation' would not have been created were it not for the EDF. SMEs and research organisations also have reported that cross-border cooperation was the main reason and benefit for applying to the EDF[37]. Consultations with the defence industry revealed that EDF enabled greater **peer-to-peer cooperation between traditional competitors** across the EU. As the Commission Expert Group noted: '*The EDF contributed to increase cross-border cooperation among competitors. Working together to analyse common strategies for the joint development of new products and for the identification of military capabilities to be built together is an achievement that was made possible by the framework provided by the EDF*.'[38]

Project box: ECYSAP

Projects in the cybersecurity sector were described as particularly representative of successful consolidated collaboration between large companies. The ECYSAP project, which develops a Cyber Situational Awareness platform started under EDIDP, and related activities continued under EDF 2021 and 2023 with projects ECYSAP EYE, EUGUARD and NEWSROOM.

In addition, **EDF has enabled deeper cooperation between primes, SMEs and research organisations**. The Commission Expert Group considered that: '*EDF successfully contributed to initiate and to establish new cross-border collaborations between research institutions and defence companies, including SMEs and mid-caps, that might not have collaborated otherwise.'* Consultations with Member States also revealed the uniqueness of the EDF in solidifying the integration of the European defence ecosystem, and facilitating knowledge sharing, technology transfer and skill development among the EDTIB. **SMEs and RTOs** further highlighted that the EDF contributes to de-risk high R&D investments, allowing entities to pursue breakthrough technologies and projects with lower Technology Readiness Levels (TRLs) without bearing the full financial risk.

[36] This includes UK, Israel, USA, Canada, Switzerland, UAE, Japan, Iceland, Türkiye, Liechtenstein, and Singapore.

[37] Consultations with EDF beneficiaries (workshop and survey with SMEs, mid-caps and RTOs). Further details in the synopsis report.

[38] Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024.

R&D cooperation between traditional defence companies and civilian companies developing technologies with dual-use potential (e.g. related to cyber, space, electronic components, quantum or energy supply domains) has also been fostered through the EDF. As the Commission Expert Group noted: '*As very first step, EDF has also helped SMEs and mid-caps previously only active in the civilian sector to step into the defence field, promoting a beneficial spin-in effect on technologies.*' However, the inclusion of SMEs not familiar with the defence sector has been mentioned by traditional defence industry beneficiaries as challenging for the management of consortia, in particular when it comes to handling sensitive or classified information and rules on EU transfers.

Several large defence industry companies confirmed that these cooperation opportunities enabled by EDF **led to additional product lines and more diversified market opportunities**[39]. This includes for example a company with a portfolio of land products which identified opportunities in other military domains thanks to discussions with new partners in connection with EDF projects. Large actors have reported that such examples are not isolated and are a natural consequence of their participation in the EDF.

The EDF has also enabled increased **cooperation between primes and sub-systems manufacturers**. As the Commission Expert Group noted: '*EDF has allowed SMEs to establish new contacts with system integrators and to show their capabilities and products, thereby increasing the possibility of building a larger customer base.*'[40]

Project box: FAMOUS I and FAMOUS II

European Future Highly Mobile Augmented Armoured Systems (FAMOUS with EDIDP contribution of €9 million, followed by EDF 2021 FAMOUS2 with €95 million) develops new armoured personnel carriers that have greater levels of protection and speed in comparison to similar legacy platforms which it can replace (M113, MT-LB, Bv-206). The Commission Expert Group noted this project as an example showcasing cross-border collaboration among platform manufacturers and system integrators with the support of mid-caps and SMEs.

In light of such increased cooperation effects, the majority of Member States and the defence industry consulted underlined how EDF is inherently contributing to **widening cooperation within defence supply chains**. The European Defence Agency also noted that: '*Traditional supply chains have been broadened and opened up for cross-border cooperation.'*[41]

c) Integration of SMEs, mid-caps, research organisations and newcomers

As described in the EDF impact assessment, there was a need to put in place measures to increase the level of SME involvement in the defence sector, which traditionally suffer from market access problems[42]. Beyond the dedicated calls for proposals for SMEs, the

[39] Consultations with EDF beneficiaries (workshop and survey with large defence industry). Further details in the synopsis report.

[40] One mid-cap noted that the EDF has enabled their company to become involved in the development of a next-generation armoured vehicle system.

[41] Following a discussion note and questionnaire distributed to EDA on the EDF in the context of the bilateral discussions on the EDF interim evaluation held with relevant organisations.

[42] SWD/2018/345 final

EDF encourages SME inclusion through an 'SME and mid-cap bonus system'[43] and through the existence of a specific award criterion[44].

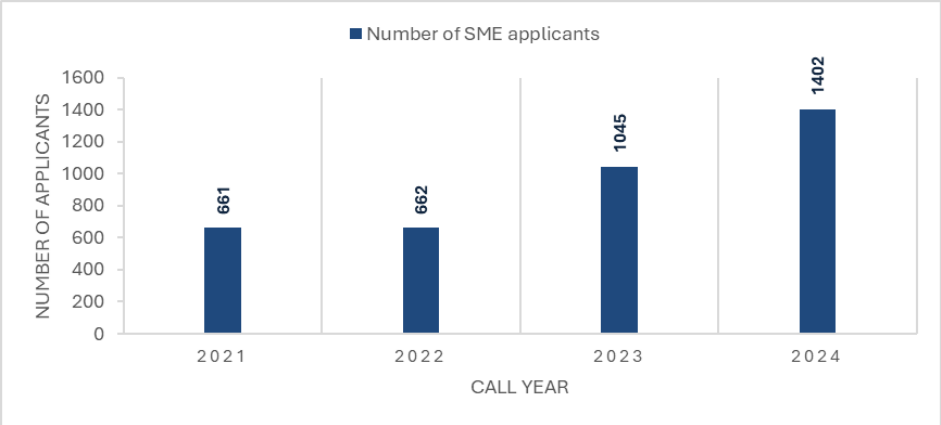


Figure 4 –SME APPLICANTS TO EDF CALLS FOR PROPOSALS (2021-24). Source: DG DEFIS

Beyond traditional defence industry, the EDF has proven to be an attractive instrument also for European SMEs, mid-caps and research organisations. **SMEs represent 43% of the unique participants** in EDF and **receive** around 20% of EU funding[45]. Mid-caps represent 4% of the unique participants and receive around 6% of the funding. Despite calls dedicated to SMEs and research organisations having the highest over-subscription, the number of SME applicants to the Fund is steadily increasing each year, as shown in Figure 4. The most recent – 2024 – calls for proposals witnessed a **28% increase in submitted proposals from SMEs and Research Organisations** compared to the previous year.

While the dedicated SME calls represent a strong opportunity for participation in EDF projects, data shows that most SME participations are actually in the thematic projects. **SME participations amount to 73% in thematic projects and 27% in non-thematic actions and** EDF funding for SMEs roughly follows the same distribution (75% / 25%).

43 See Article 13(b) and (c) of the EDF Regulation.
44 See Article 12(e) of the EDF Regulation.
45 Self-declared SMEs. DG DEFIS, European Commission. Data from EDF projects 2021-2023 extracted in February 2025.

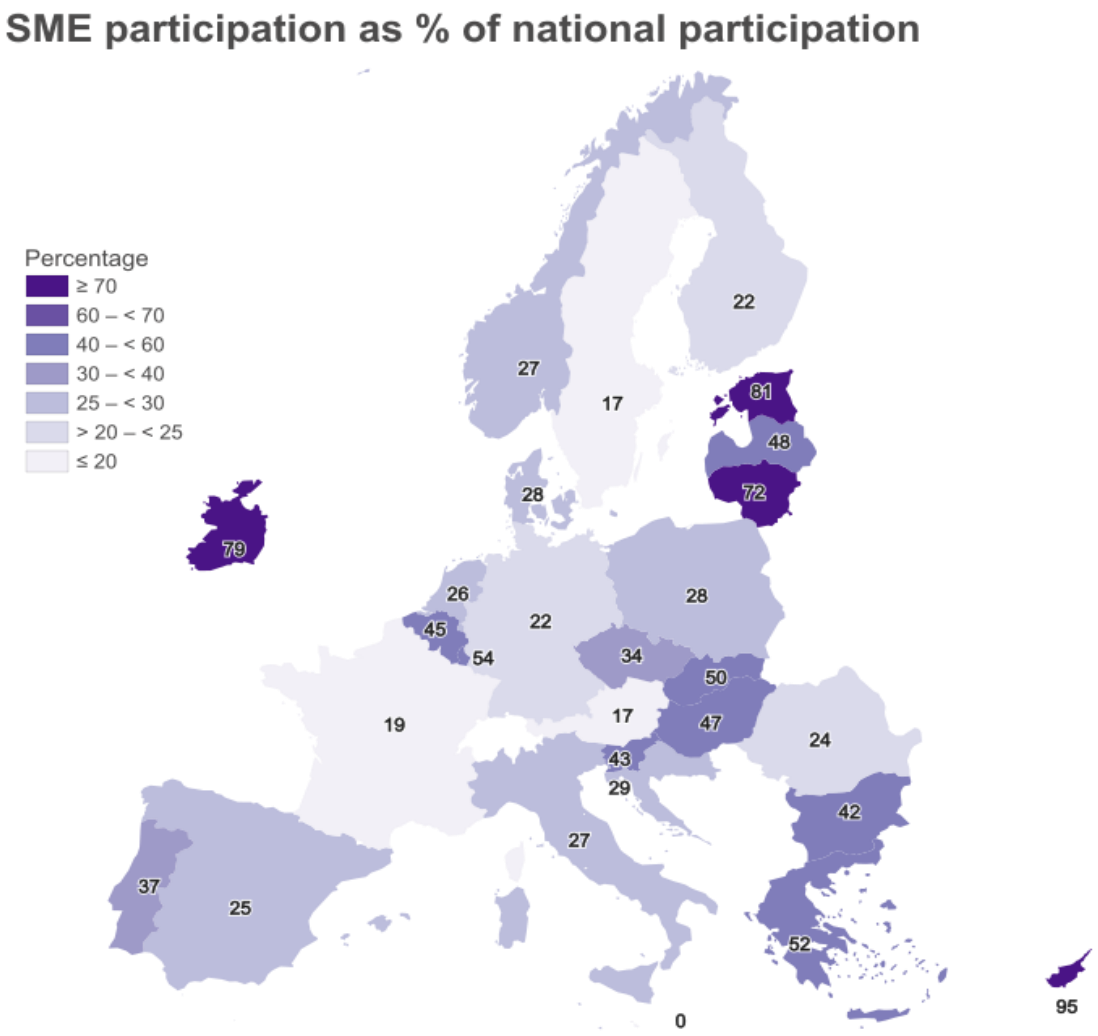


Figure 5 – SME PARTICIPATIONS AS % OF TOTAL NATIONAL DTIB PARTICIPATION TO THE EDF PROGRAMME. Source: DG DEFIS

Figure 5 above displays the percentage of national SMEs participations among the total national participations to the EDF. The highest level is observed in CY, EE, IE, LT, LU, and EL, where they represent more than 50% of the participations. This data confirms that the EDF presents strong opportunities for both big and small R&D players. In this context, industrial stakeholders underlined the important role played by SMEs and mid-caps in EDF R&D projects, as further exemplified in the box below.

Project box: SMEs and mid-caps taking a strong role in consortia (examples noted in the report by the Commission Expert Group)

The PADIC project is a good example of SMEs having equal workshares in a cross-border cooperation. The established cooperation with an Estonian SME was extended to other EDF calls, not only among the consortium partners but also with the participating Member States, which are also open to possible future business cooperations.

Another example highlighted by the defence industry as being successfully led by a Mid-Cap was CONVOY, which demonstrated the capacity of mid-caps to lead large-scale projects in key capabilities such as counter-IED field. Research projects such as CROWN, ARTURO, TYRESIAS and EPICURE have brought together industrial partners and RTOs to develop cutting-edge technologies that would otherwise lack sufficient innovation potential and national funding.

Certain EDF research projects were described by RTOs and the defence industry as **making it possible to work together in the development of new complex technologies**:

- Advanced Radar Technology in eUROpe (ARTURO) includes both universities and large primes as members of the consortia. The project aims to provide solutions based on emerging technologies for advanced radar technologies.
- European Packaging for highly Integrated Circuits for Reliable Electronics (EPICURE) includes both research institutes and large primes in the consortia. The project aims to support technology providers in Europe in the field of advanced packaging serving defence needs.

The EDF has clearly **fostered the participation of 'newcomers' in the defence domain**, meaning first-time participants in EU industrial defence R&D programme. Table 2 illustrates that each year the EDF attracts both new applicants and new participants.

EDF call year	2021	2022	2023
Number of applicants that never applied to EDF before	**1094**[46]	**576**	**693**
Number of participants in EDF-funded projects that never participated in PADR, EDIDP and EDF before	**504**	**275**	**286**

Table 2 – NUMBER OF NEW APPLICANTS TO THE EDF. Source: DG DEFIS

Consultation with stakeholders highlighted the fact that newcomers play an important role in consortia, filling in critical gaps in the consortium's collective knowledge particularly in introducing innovative technologies and solutions. At the same time, **rules for handling classified information, the calculation of funding rates and the bonus system for development actions are found to be challenging for newcomers**.

On the 'SME bonus system' that envisages higher funding rates for development projects involving SMEs[47], consulted small industry as well as Member States' representatives

[46] All applicants considered new to EDF in 2021.

[47] An activity may benefit from an increased funding rate, as referred to in this point, where at least 10% of the total eligible costs of the activity are allocated to SMEs established in Member States or in associated countries and which participate in the activity as recipients, subcontractors or other legal entities in the supply chain.

stressed that it was an **effective measure to encourage SME participation**. The **assessment related to the mid-cap bonus was more mitigated**, with the Commission expert group noting that '*mid-caps have not benefited in the same way from the EDF in developing cross-border cooperation. Based on the experience of the Group, the bonus threshold for mid-caps was assessed as too high and difficult to achieve*'[48].
In terms of limitations for participation in EDF projects, some non-beneficiaries noted the lack of information about the EDF funding opportunities and application modalities. Other consulted entities noted that the fund is less relevant for companies that are involved in mass production of established products (e.g. ammunition) or companies specialised in niche collaboration with primes.

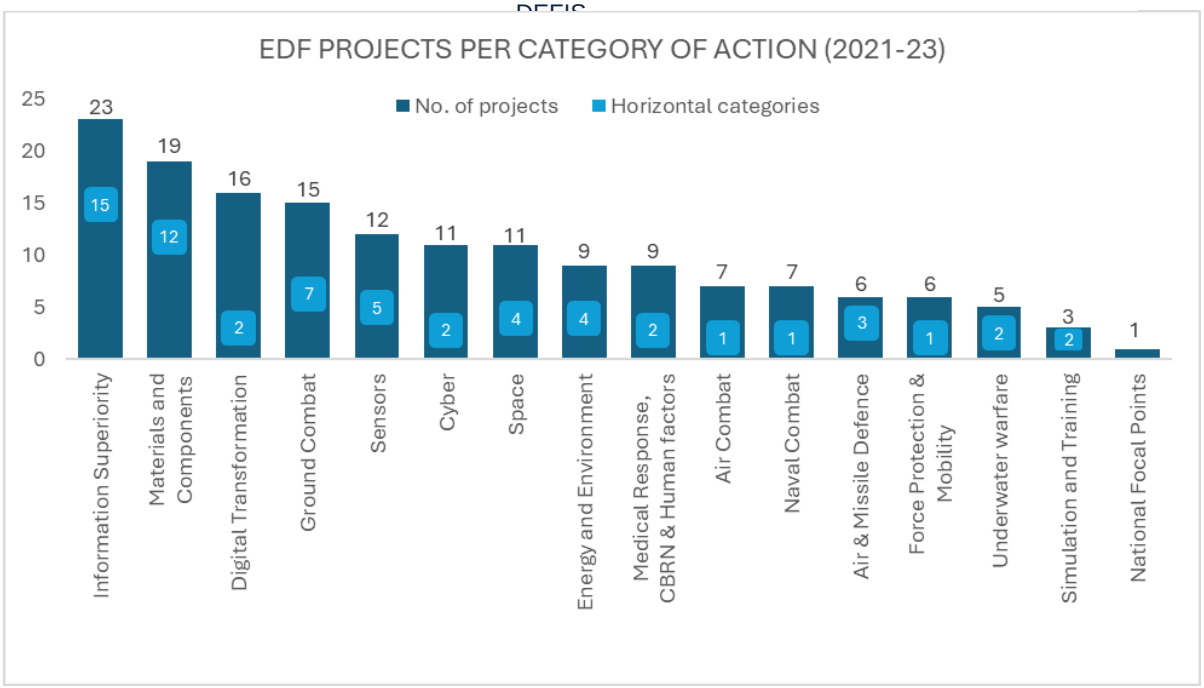
4.1.1.2 Boosting the performance of future defence capabilities throughout the EU, reinforcing the innovation capacity of the EDTIB and introducing new defence products and technologies

This section analyses the impact of the EDF from the capability angle, focusing on the degree to which the EDF helps increase the innovation capacity of the EDTIB, including by advancing key defence capabilities, products and technologies, with the potential to strengthen EU competitiveness and strategic autonomy.

a) Advancement of key defence technologies and capabilities

The **EDF currently funds 162 collaborative defence R&D projects in all thematic categories of action**, ensuring the balance needed to cover all capability domains and needs. Figure 6 shows the number of projects corresponding to each thematic category of action and the projects selected as part of the horizontal categories (disruptive technologies and SME R&D calls) that can be attributed to these domains.

Figure 6 - NUMBER OF EDF PROJECTS PER CATEGORY OF ACTION (EDF 2021-2023). Source: DG DEFIS



[48] Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024. It is further mentioned that: '*The industrial consortia preferred to concentrate their efforts on SMEs and especially on cross-border SMEs, because it was more beneficial for the success of the proposal and for increasing the bonus.*'

From a financial perspective, the following table shows the EDF funding allocated to each category of action under the five EDF work programmes 2021 to 2025:

Table 3 - EDF MULTIANNUAL INDICATIVE BUDGET SUMMARY PER CATEGORY OF ACTIONS[49]. Source: DG DEFIS

Categories of actions	Total 2021-25	
	in € M	in %
1. Defence medical support, CBRN, biotech and human factors	182.7	3.41%
2. Information superiority	457.8	8.54%
3. Advanced passive and active sensors	267.5	4.99%
4. Cyber	269.8	5.03%
5. Space	488.1	9.10%
6. Digital transformation	203.7	3.80%
7. Energy resilience and environmental transition	260.1	4.85%
8. Materials and components	179.5	3.35%
9. Air combat	545.8	10.18%
10. Air and missile defence	301.0	5.61%
11. Ground combat	572.4	10.68%
12. Force protection and mobility	189.1	3.53%
13. Naval combat	487.0	9.08%
14.Underwater warfare	214.0	3.99%
15. Simulation and training	97.6	1.82%
16. Disruptive technologies	226.1	4.22%
SME calls and Coordination and support actions	285.3	5.32%
Other actions	134.1	2.50%
TOTAL	5361.5	100.00%

The graph shows that the EDF is ensuring the balance needed to cover all capability domains, while at the same time prioritising major capabilities' areas, such as ground combat, air combat, space, naval combat and information superiority, in line with the Member States' needs agreed in the published EDF multiannual perspective.

EDF actions are expected to **develop more than 50 prototypes for key next-generation EU capabilities**. Consulted stakeholders highlighted that initial concerns that the EDF would only address the less sensitive peripheral technologies at low TRLs are proving to be unfounded. 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. Project examples include*: EU Next Generation Rotorcraft Technologies Project – **ENGRT** – (funded by EDF 2021 with 0 m 40M) which focuses on next-generation military rotorcraft*

[49] EDF work programme 2025. DG DEFIS, European Commission, data from 2021 until January 2025.

*technologies and capabilities, with a possible follow-on under EDF 2024 (up to EUR 100M); project Enhanced Pilot Interfaces & Interactions for fighter Cockpit – **EPIIC** – (funded by EDF 2021 with EUR 75M) with a possible follow-on under EDF 2024 calls developing innovative and disruptive cockpit technologies for future air warfare.*

- **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 camps. Project examples include*: Main ARmoured Tank of Europe – **MARTE** – (funded by EDF 2023 with EUR20M) to initiate the development a new Main Battle Tank platform that meets current and future threats and needs, integrating innovative and disruptive technologies.*
- **Naval domain:** platforms (European Patrol Corvette, mid-size semi-autonomous vessels), mine countermeasures, underwater communications, seabed and critical infrastructure protection.
- **Space domain:** PRS receivers, space situational awareness, space-based ISR.
- **Cyber domain:** cyber situational awareness.

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[50].

Project box: EDF projects contributing to the EU's strategic autonomy

a) **EUROMALE**: The need for a fully sovereign European Medium Altitude Long Endurance (MALE) RPAS drone addresses a critical capability shortfall of European armed forces. The €100 M contribution from the EDIDP and the further funding allocated under the EDF €100 M play an important role for the programme.
b) **Hypersonic missile defence**: EU HYDEF and HYDIS^2 are EDF projects funded to develop capabilities related to the interception of hypersonic missiles. Before this, there was no programme dedicated to developing such a critical capability needed for Europe's defence.
c) **Space-based Early Warning and Detection:** Through the ODIN's EYE II project, EDF supports the further 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 EU autonomy in space.
d) **Future Mid-size Tactical Cargo (FMTC)**: The EDF contributes to the financing of a next-generation European FMTC aircraft (notably with the FASETT project). 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 60 years ago.

Regarding the interoperability/interchangeability of defence systems, Member States also stated that '*the EDF carries a potential for improving interoperability and interchangeability*' with EDF projects addressing components or sub-systems that can benefit several future capabilities. Areas where this is particularly relevant identified by

[50] Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024.

Member States include military mobility, the naval domain and standardisation of future military rotorcraft. EDF projects are designed to promote interoperability among EU Member States' defence systems from the outset. This is achieved by defining technical requirements that are agreed upon by Member States, ensuring that the developed capabilities are aligned with their needs. The technical requirements for EDF projects are defined by Member States through the 'harmonisation process' during the work programme preparation stage that involves national experts and the EDA. As concerns the role of EDF in supporting standardisation for improving interoperability and interchangeability, see section 4.1.3.2.(i) 'Coherence with NATO activities'.

Considering technological autonomy as a long-term success indicator, it is positive to witness that most Member States believe the EDF, and its precursor programmes will contribute to EU **technological autonomy and to a lower level of dependence on third countries** (see Figure 7). For example, the EDF supports the development of European technologies for unmanned aircraft anti-collision system and for resilient Global Navigation Satellite System receivers (based on the Galileo system).

In addition, while end systems using the technology can potentially be developed at national level in competition between Member States, many basic technologies benefit from joint developments by increasing **cost efficiency and competitiveness** on the market. One such critical technology is the Gallium Nitride (GaN) semiconductor substrate, used in defence systems (e.g. high-performance radars), supported by the project AGAMI EURIGAMI.

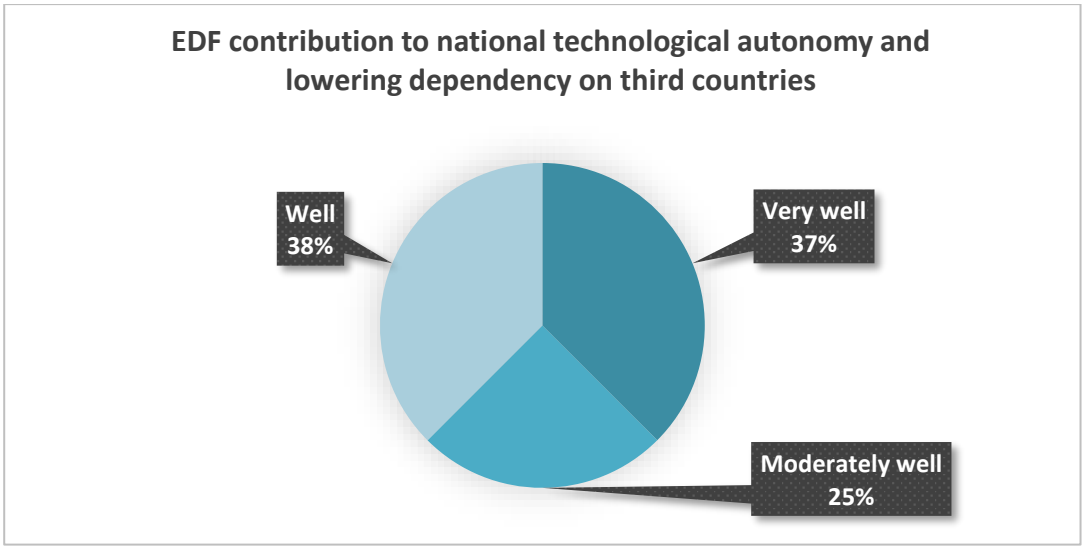


Figure 7 – PERCEPTIONS OF MEMBER STATES ON EDF CONTRIBUTION TO NATIONAL AUTONOMY. Source: DG DEFIS.

Project box: Strengthening EU's technological autonomy

For Unmanned Aircraft (UAS) anti-collision systems, the MIDCAS project developed between Sweden, France, Germany, Italy, and Spain started in 2009, **carried on under EDIDP** and **continues today under EDF** with the EUDAAS phase 2 call awarded in 2023. The defence industry participants to this initiative highlighted how **without such chain of projects, the EU would have had to rely solely on non-EU solutions**.

b) Increasing the innovation capacity of the EDTIB

Consultations of the defence industry and researchers[51] highlighted how the EDF has contributed to the reduction of time-to-market risks, the sharing of financial and technical risks collaboratively between beneficiaries and partners, and **to the overall reduction of market uncertainty**. By providing 100% of funding for defence research, including for lower TRLs, as well as co-funding for development actions, the EDF provides a predictable funding environment that encourages companies to invest in high-risk R&D, and to collaborate with other companies and research organisations. This allows a larger level of ambition than what would be possible at a national scale with projects with a stronger research potential or which entail the development of large capabilities that the defence industry would not have otherwise been capable of taking.

The EDF investment in defence R&D leads to the creation of new products and processes, which **already contributes to the demand for new jobs.** Evidence of increasing job demand was revealed by consulted stakeholders, who stated that they often need to hire specialised staff for EDF projects. The Commission Expert Group noted that '*Engineers, scientists, and other experts find challenging and interesting work opportunities through EDF-backed initiatives.'* Think tanks and researchers also indicate that the EDF **contributes directly to Europe's competitiveness which will lead to an increase in specialised skills and labour.** Defence industry representatives stated to have gained complementary technical and scientific skills thanks to their participation in the EDF, and conversely, that the EDF created new attractive professional opportunities in the job market. Besides, **a vast majority of the defence industry consulted noted increased organisational growth thanks to EDF**[52].

Investment in **defence innovation, including in disruptive technologies**, has 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, complemented with EUR 400-500 million leveraged from other public and private sources). The main results from EUDIS measures include:

- **Major support to start-ups and SMEs in EDF R&D projects**. The EDF non-thematic R&D calls supported 48 projects under the first three evaluation cycles and brought in a number of new players. The three EDF funding rounds demonstrated consistently high interest from SMEs. For instance, in 2023, applications more than doubled compared to 2022. This strong interest in calls exclusively open to SME consortia and those focusing on disruptive technologies confirms that the EDF remains highly attractive to smaller companies and newcomers to the defence sector.
- Since 2023, certain R&D calls with **Financial Support to Third Parties** (FSTP, or cascade funding) require awarded consortia to provide between 10-30 start-ups and SMEs with acceleration support in specific technology domain thus fostering innovation and bringing closer new market entrants with the leading European players. Four call topics with FSTP have been launched so far[53] and Ukrainian entities are now eligible to receive such financial support. The Commission Expert

[51] Schilde, K. 2023. Weaponising Europe? Rule-makers and rule-takers in the EU regulatory security state. Journal of European Public Policy, 30 (7). 1255-1280. https://www.tandfonline.com/doi/full/10.1080/13501763.2023.2174582

[52] Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024.

[53] Material and Components (EDF 23), Simulation and Training (EDF 24), Protection and Mobility Categories and Ground Combat (EDF 25).

Group strongly supported the use of cascade funding, due to its potential to attract new suppliers and to incentivise civilian actors to engage in defence R&D.

- **Strengthened synergies between EU-funded civil and defence research** by including spin-in aspect in selected EDF calls since 2023. These projects facilitate the transfer of innovation from the civil sector to defence by leveraging the dual-use potential of results from civil EU-funded R&D. Stakeholders have welcomed the introduction of spin-in measures and called for further exploration of their potential.
- **High-risk/high-return disruptive technology research** has been supported with a total of 13 projects in technology domains such as quantum, sensing, drones, environment, lasers, hypersonic velocity, new materials and additive manufacturing receiving over EUR 226 million so far. The calls also provide funding continuity to research projects stemming from PADR, for example the project THEMA, a continuation of PILUM with the goal to develop an electromagnetic railgun. Consulted think tanks noted the need to further invest in disruptive defence technologies (such as autonomous systems or artificial intelligence) which are increasingly relevant for the modern battlefield.
- The use of a **'Technological Challenge' approach** has enhanced the ability to measure the performance of systems involving artificial intelligence and machine learning. This innovative methodology, inspired by the DARPA[54] model for autonomous systems, has become a key component of the EDF work programmes since 2022. A 'technological challenge' is an organisational framework that encourages researchers and developers to address complex objectives related to capabilities or functionalities of specific technologies. It enables the support of multiple European research teams working collaboratively to solve a particular technological problem. Since 2022, two major technological challenges have been launched, with several research teams focusing on the detection of Improvised Explosive Devices (EDF 2022), landmine detection, and Human Language Technologies (EDF 2023). While it is still too early to draw definitive conclusions, these initiatives mark significant progress in the field.

Additionally, EUDIS provided a set of short-term measures for SMEs and start-ups to:

- **Attract highly skilled individuals and potential start-ups to the defence sector and matching end users and industry players**. The funding of **defence hackathons** has fostered innovation in defence and contributed to the development of new start-ups within the defence sector. Since the first edition of European defence hackathons in 2024, EUDIS has supported European public and private entities in organising these events[55]. The first edition engaged close to 300 participants and 79 defence mentors, developing 70 innovative defence tech solutions. All top winning teams of the first edition created defence start-up companies. The added value of such events was noted also by participants of hackathons[56].
- **Coach 131 SMEs** beneficiaries of the EDF programme (as of March 2025). The business coaching with consultation advice on specific business challenges helped

[54] Defense Advanced Research Projects Agency Home | DARPA

[55] In 2024, the hackathon was held in six EU Member States (Belgium, Hungary, Greece, Italy, Lithuania and Poland) and had a total of 275 participants from 16 Member States and Norway.

[56] See testimonials: https://eudis.europa.eu/eudis-tracks/hackathons_en

defence SMEs to further develop their business. 94% of SME respondents rated the service as very good or excellent[57].

- **Improve access to funding by a Defence Equity Facility, implemented by the European Investment Fund under InvestEU**. In January 2024, the Commission published a study which examined the access to equity financing for European defence SMEs. The study found that two thirds of defence SMEs felt discouraged from seeking equity financing and 50% refrained from seeking debt financing, compared to only 6.6% average among SMEs in the EU during the same period. It also found that the investor ecosystem with funds dedicated to defence is underdeveloped, when compared to the US. As an initial step to address these challenges, the Commission launched the Defence Equity Facility (DEF) through the European Investment Fund under InvestEU. The Facility aims to invest EUR 175 million between 2024-2027 into private equity and venture capital funds focusing on innovative defence and technologies with dual-use potential, with the potential to leverage up to EUR 500 million of additional private funding. The DEF has already demonstrated traction, with two investment deals signed to date and two more expected to be concluded by the end of the year. The DEF produced a strong pipeline of potential investments, with 16 active files currently undergoing screening and due diligence. This is expected to drive the Facility's investment pace, with up to 60% of the DEF's total allocation expected to be invested by the end of 2025 and the remainder to be committed by the end of 2026.

As of March 2025, based on the identification of additional needs, EUDIS provides two new services:

- **Acceleration support to 20 companies in the first pilot year** (2025) to support start-up and scale-up companies go-to-market capabilities through an 8-month acceleration programme. It offers training, coaching, testing activities, and matchmaking opportunities, including six bootcamps across the EU, culminating in a Demo Day. Participants will receive a EUR 65 000 seed financing voucher.
- **A matchmaking service** connects start-ups, SMEs, and small mid-caps with investors, government entities, and corporate partners to improve access to financing and enhance their networks. Online and in-person events will be held, with plans to support up to 80 SMEs and small mid-caps in 2025. This initiative aims to build a network of European investors backing defence innovation[58].

However, the lessons from the Russian war of aggression against Ukraine and the rapid technological progress have raised expectations that the **EDF also needs to provide faster, leaner processes in support of smaller projects to integrate innovative defence solutions**. Most consulted beneficiaries stated that accessible opportunities should be created to support smaller, faster projects replicating the success of the quick innovation life cycle developed in Ukraine, which includes constant feedback from the final user at the battlefield (real life testing). Considering the long-term nature of the defence R&D projects under the EDF, SMEs and RTOs specify that the EU defence

[57] Questionnaire to EUDIS Business Coaching participants.

[58] EUDIS BAMM will provide comprehensive support to 20 companies over an 8-month acceleration period including strengthening knowledge about defence end users' needs, enhancing business development and go-to-market capabilities through dedicated testing activities, training, coaching and matchmaking. See https://defence-industry-space.ec.europa.eu/european-commission-launches-eudis-business-accelerator-and-matchmaking-programme-defence-technology-2025-02-12_en.

innovation ecosystem is 'missing an opportunity' to benefit from the knowledge of Ukrainian industry and armed forces.

At the same time, stakeholders highlighted the critical importance for the success of the programme to keep the right balance and ensure that the EDF addresses the future, long-term defence R&D needs. The emergency focus of other EU instruments, such as the Act in Support of Ammunition Production (ASAP), EDIRPA, and elements of the proposal for EDIP, complements EDF's focus by addressing immediate priorities. Indeed, 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**.'[59]

c) Ensuring continuity of effort along the R&D cycle up to market uptake

The continuity of projects from previous programmes and under the EDF has been highlighted by the defence industry as one of the main benefits of the EDF, which 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 on the critical funding step between product development and customer uptake and deliver concrete results for the armed forces of the Members States[60].

It is essential for the EDF to **deliver concrete results** along the research and innovation cycle to move towards market uptake. There are **different approaches within the EDF to ensure continuity of effort and optimal progress of funded projects**: (a) projects evolving from precursor programmes (PADR, EDIDP), (b) projects progressing from the EDF research window to the development window and (c) projects progressing in the same window. Beneficiaries[61] have highlighted that **ensuring continuity of effort reduces resource waste and retains expertise**, which are critical to maintaining momentum from research to procurement. The merging of the Research window with the Development window, previously addressed separately under the precursor programmes, into the single R&D framework of the EDF has been a significant step towards ensuring a seamless continuation of effort through the entire R&D life cycle.

More than **half of the EDIDP projects** (i.e. at least 20) were followed up under the EDF, thus ensuring **project continuity, while an increasing number of EDF projects have their next steps also funded,** as progress is made in technology or capability development**.** In addition, in order to improve the exploitation of research projects' results towards development or procurement, a 'special report' is issued as a specific deliverable of all research actions to facilitate the uptake of results to the next steps. **Several success stories of projects moving from research to development were cited**, demonstrating the full defence R&D cycle that the EDF successfully covers[62]. Major defence companies have indeed indicated that the rate of continuation of industrial activities after the completion of a given project should be perceived as a successful measure of the EDF's performance.

However, beneficiaries have also identified some projects which, despite promising results, have not benefited from project continuity, due to lack of budget or lack of

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59 Consultations (workshop and survey) with think tanks. Further details in the synopsis report.

60 The defence industry highlighted a list of 'success stories', i.e. projects that had received funding under PADR and EDIDP before being carried out under EDF. See: Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024.

61 Consultations with EDF beneficiaries (workshop and survey with SMEs, mid-caps and RTOs). See synopsis report for further details.

62 Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024.

support from Member States. However, in workshops with Member States, the EDA highlighted that in many cases where PADR projects were not continued under the EDF, Member States planned to ensure this continuity themselves or with EDA support.

Project box: Research projects continued as development projects

The **Next Generation Rotorcraft** (NGRT) started as a research project/feasibility analysis in 2021 and is now seen as a development project in 2024. The project will include the analysis of future needs, key future rotorcraft features and capabilities, alternative rotorcraft platforms, flight demonstrators and simulators. The project will also produce a military rotorcraft technology roadmap, strategies for modularity and manufacturing, life-cycle analysis and maintenance concepts.

The results of project GOSSRA, a research project funded under the PADR, will be further built upon in the EDF development project **ACHILE** to demonstrate enhanced interchangeable capabilities improving all areas of dismounted combat: survivability, mobility, navigation, situational awareness and communication.

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, for the development of future mid-size tactical cargo aircraft, or advanced radar technologies, both of which were addressed twice in the EDF research window.

In addition, optimal progress of projects depends not only on follow-on topics as such, but also on the **continuity of consortia**. In this respect, beneficiaries have stressed that project continuity (from one project to another) cannot be smooth if the same consortium is not involved. Such a continuity of consortia could be ensured by a **direct award** to the consortium carrying out the previous R&D activities to be continued, as allowed by the EDF Regulation. However, Member States have so far been reluctant to introduce direct awards in this context and support by default competitive calls for proposals.

To provide longer-term visibility on upcoming defence R&D opportunities, and in addition to the annual EDF work programmes, an indicative multiannual perspective (MAP) has been introduced; however, it does not give sufficient level of commitment and detail. **The overall challenge for the EDF is to maintain a balance between developing new projects and capabilities and supporting the continuation of projects already in the EDF pipeline**. In this respect, the EDF is currently considered to provide a satisfactory balance. An assessment of how to manage such balance in the future will be necessary, in light of the budgetary constraints.

To better anticipate continuity of projects, the Commission Expert Group on Defence suggest that Member States and industry could **agree, as part of feasibility studies, on common roadmaps for the technological or capability developments** that they plan to consider under the EDF[63]. As a result, EDF programming would align better with Member States' needs and industrial feasibility while providing greater predictability through the EDF multiannual perspective.

A key element in this context is to **ensure a strong commitment by Member States** to ensure R&D continuity. Beyond the EDF contribution, EDF development projects

[63] Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024.

require complementary financing (‘**co-financing’**)[64] from supporting Member States or from other sources (e.g. consortium own resources), to cover fully the projects’ costs. The demonstration of such co-financing is an eligibility condition for development projects[65] 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. Currently, the co-financing needs for all awarded EDF projects amounts to around EUR 760 million, which represents 19.6% of the total eligible costs of the projects[66]. As shown in the figures below (Figure 8 and Figure 9), an increase in the required co-financing needs has been observed during programme implementation, both in terms of amount and ratio, with especially high values in 2023. This can be explained by development projects reaching prototyping activities, for which the EDF only covers from 20% to 55% (including maximum bonus) of eligible costs.

From the industry side, stakeholders reported that no EU-funded defence project had full co-financing frameworks in place at the time of signature of grants. More than that, for some projects co-financing is still not in place several years after the projects started, leading to financial issues (especially for SMEs and RTOs) and to serious delays. While pointing to the lack of harmonisation in the practices of Member States to set up co-financing, stakeholders advocated the need to ensure that, before grant agreement signature, 100% of estimated costs of the projects are covered, combining EU and Member States’ co-financing with partners’ own resources. Besides, the Commission has introduced an exemption to the State aid rules for Member State co-financing linked to EDF projects[67] to ease the establishment of such co-financing.

[64] Contrary to Research actions, the eligible costs of Development actions within the EDF are not systematically reimbursed at 100%. Instead, specific funding rates apply, depending on the eligible activities performed in the Development action, with a possibility of an increase in the funding rates (‘bonus system’) if certain conditions are met.

[65] See Article 21 of the EDF Regulation. Applicants to development actions have therefore to provide a signed co-financing declaration.

[66] The total eligible costs of EDF 2021, 2022 and 2023 projects amount to EUR 3.88 billion.

[67] Dedicated State aid rules applicable to the Member States’ co-financing to projects funded by the EDF have been introduced in Article 25e of the General Block Exemption Regulation allowing for a total public funding up to 100% for those projects. This is justified by the fact that those projects are not expected to receive significant private co-funding because of the specificity of the defence sector.

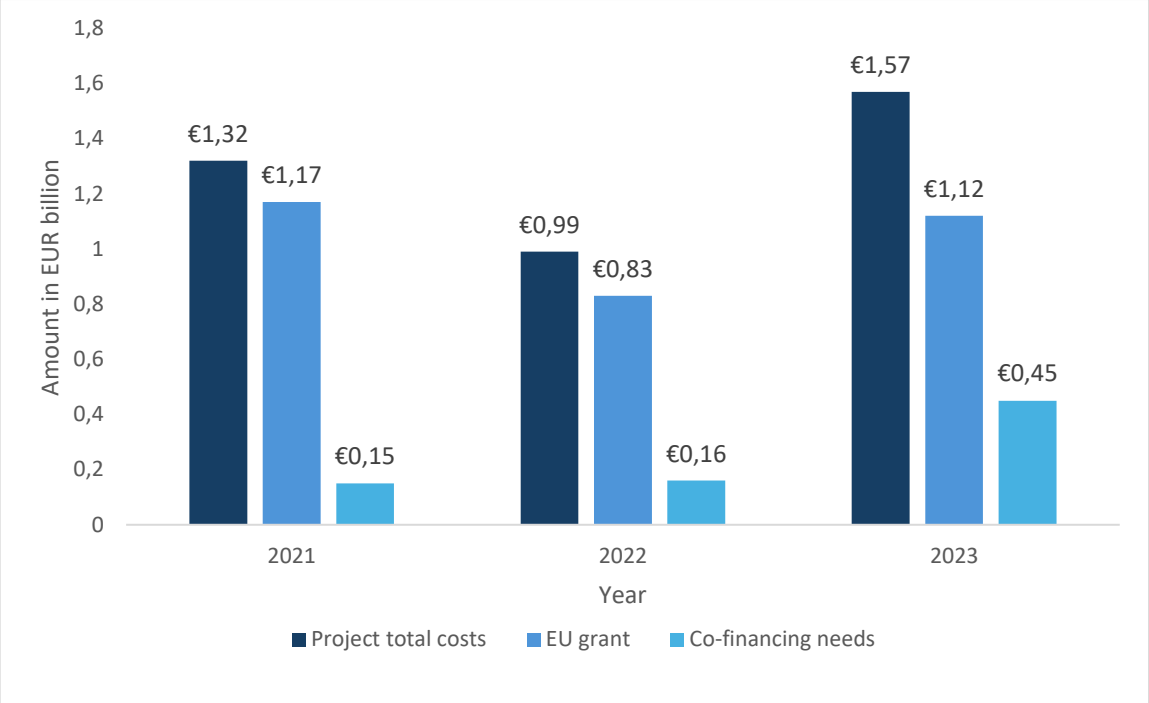

Figure 8 – TOTAL COSTS, EU GRANT AND CO-FINANCING GAP. Source: DG DEFIS

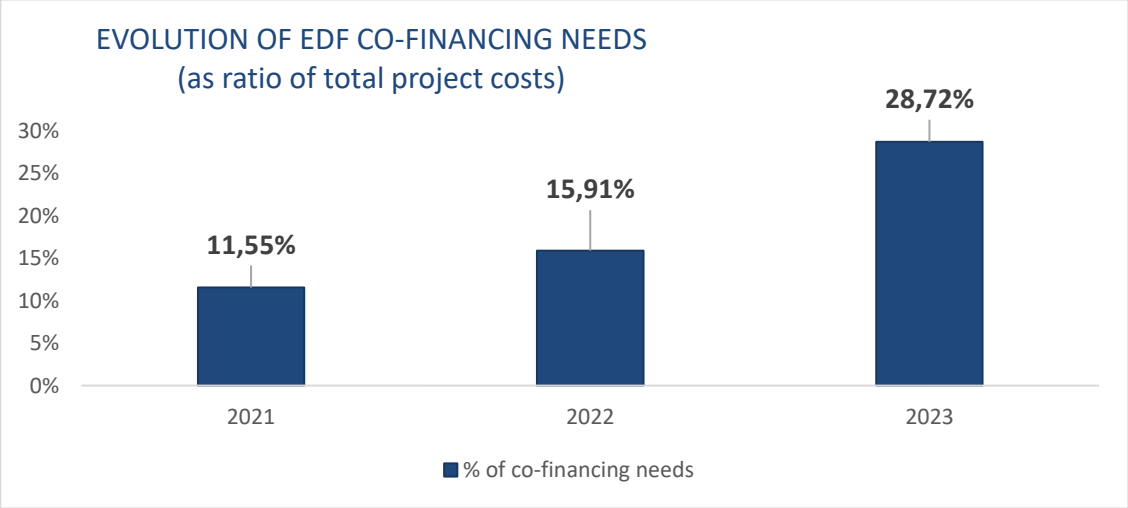

Figure 9 – EVOLUTION OF EDF CO-FINANCING NEEDS. Source: DG DEFIS

On the issues that may explain the lengthy process of setting up co-financing frameworks, Member States have reported the difficulty in agreeing on the necessary Memoranda of Understanding (MoU) between them, which in many cases are a prerequisite for signing national co-financing contracts. Feedback from Member States showed that it takes more than two years to have a MoU signed, often due to complex discussions on intellectual property rights (IPR) needed to determine appropriate co-financing amounts[68]. In addition, the co-existence of multiple co-financing schemes[69] complicates the process.

[68] Whereas the EDF only finances project costs without any IPR claim, co-financing Member States may have to finance additional costs linked to their IPR claims.

[69] Own resources of consortium partners, national contracts and/or grants placed in parallel, contribution to a lead nation contract, contribution to an EDA or OCCAR contract, or any combination of those.

Therefore, **co-financing remains a point of attention** of EDF implementation, all the more as projects funded reach higher stages of development requiring significantly increased co-financing. Absence of timely establishment of MoU and, in turn, co-financing schemes, may in the long run hamper the financial viability of the awarded projects and the uptake of their results by potential end users.

This led the Commission to strengthen its ability to monitor the establishment of required co-financing and to support ongoing discussions[70] on improving MoU elaboration in the context of the EDF in cooperation with the EDA. In addition, the Commission is actively looking to potentially establish a new funding mechanism within the EDF in the form of Procurement of Defence R&D services, where a consortium of Member States and contracting authorities would be the beneficiaries of the EDF grants to place the required R&D contract(s).

d) Towards procurement of projects outcomes

In line with the EDF's objective to reduce the fragmentation of defence markets, the unnecessary duplication of products, and ensure greater interoperability between Member States' capabilities, the evaluation also investigated the **procurement potential of expected project outcomes**.

Despite the early stage of EDF's implementation, there are already solid signals about procurement potential for project results, with some procurements already materialising. Half of Member States' respondents to a questionnaire noted that some EDF, EDIDP or PADR project results were already being procured at national level or are likely to be procured in the near future. The rest of the respondents stated that it was too early to provide a definitive answer[71]. In addition, one third of defence industry respondents indicated that a product or technology developed under the EDF, or precursor programmes has drawn interest of defence end users or shown signs of possible market uptake.

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: the project has been allocated €EUR 60 million under EDF21 and €EUR 155 million under EDF22. **Procurement contracts for a double-digit number of vessels are expected** and there is a growing interest from other Member States.

Furthermore, first project outcomes have **started entering the armed forces of the EU Member States 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.

[70] Under the lead of the European Defence Agency.

[71] Consultations with Member States and Norway. Further information present in the synopsis report-noting that to preserve confidentiality quotes have been anonymised.

Project box: Project results entering 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 are 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 EDIDP/EDF projects AI4DEF are in use by Ukrainian armed forces.

In spite of a supportive initial assessment by consulted stakeholders, **certain aspects are however reported as impeding faster and streamlined procurement of project outcomes**. Three main issues were highlighted: (a) **national export rules on the transfer of defence products** and (b) **lack of binding commitments of procurement of results** (c) **latency of national procurement cycles**[72].

- **National rules on control of intra-EU transfers of defence-related products** are apparently hampering the transfer of project results and defence items across Member States' borders once EDF projects are completed. These issues need to be closely monitored and explored in parallel with the negotiations of EDIP and the ongoing evaluation of the Transfers Directive, with some beneficiaries recommending the promotion of an exemption[73] for EDF projects.
- Some industry representatives expressed doubts about their products being procured by the armed forces despite meeting their requirements. Whereas letters of intent are formulated by Ministries of Defence to comply with eligibility conditions, they do not represent a legal commitment for procurement.
- Consulted think tanks also noted that the procurement of project outcomes tends to suffer from the **latency of national procurement cycles**. Many Member States in the EU are still operating under an outdated model of lengthy, complex, and costly procurement processes for a limited number of top-quality platforms. At the same time defence ministries recognise the need to improve and review the current models and are considering reforming their procurement process to expedite procedures and incentivise risk-taking.

4.1.2 Efficiency

This section aims at assessing the efficiency of implementation of the EDF Programme. The assessment is structured along the major stages of the EDF implementation,

[72] Consultations with EDF beneficiaries (workshop and survey with SMEs, mid-caps and RTOs). Further detailed in the synopsis report.

[73] Article 4.2 of the Transfers Directive states: 'Notwithstanding paragraph 1, Member States may exempt transfers of defence-related products from the obligation of prior authorisation set out in that paragraph where: (c) the transfer is necessary for the implementation of a cooperative armament programme between Member States.'

highlighting the improvements introduced to increase efficiency, while reporting also some identified residual inefficiencies. Where possible, these improvements are quantified, and cost estimates[74] are provided based on available data. The conclusion tries to assess the overall cost efficiency of the EDF implementation and provides a complementary macroeconomic analysis of its longer-term economic impact.

4.1.2.1 Preparation of the work programmes and calls for proposals

Improvement and simplifications leading to higher efficiency

Since the launch of the programme, the preparation of the annual EDF work programmes and calls for proposals has benefited from **many improvements stemming from the organisation of regular lessons learned exercises**. This includes clearer rules to organise and steer the priority setting (i.e. selection of the call topics to be funded in each category of action), more standardised ways to define detailed call topics description (including the functional requirements) and more flexible ways to allocate budget to the different calls and topics, the definition of a budget at topic level[75] or the introduction of flexibility clauses[76]. It also includes the use of a collaborative and secured tool[77], allowing it to carry out all the needed work and interactions with the EDF Programme Committee and national experts involved in the process.

As shown in Table 4 below, all those improvements enabled, year after year, to publish the EDF work programme and the associated calls earlier, while at the same time, reducing the number of meetings needed and handling successfully the ramp-up of EUDIS measures. The introduction and consolidation of the EDF indicative multiannual perspective (MAP) greatly contributed to reduce the time needed, as it provides a higher visibility and predictability on the next annual work programmes.

Year of implementation	2021	2022	2023	2024	2025
Number of meetings organised with the EDF expert group/programme committee to prepare the annual work programme[78]	20	10	9	8	6
Date of adoption of the annual work programme	30 Jun	25 May	29 Mar	15 Mar	29 Jan
Date of publication of the calls for proposals[79]	05 Jul	09 Jun	13 Apr	12 Apr	18 Feb

Table 4 - EFFICIENCY GAINED IN THE EDF WORK PROGRAMME AND CALLS PREPARATION. Source: DG DEFIS

It is worth mentioning that the most challenging part of the work programme preparation is the **annual prioritisation and selection of topics**[80], considering the very high number of topics of interest tabled by the different Member States and Norway, the limited available EDF annual budget (with an important ramp-up profile from 2021 to 2027) as well as the necessity to address a reasonable number of topics every year (i.e. around 30) in order to keep the programme impactful and manageable. This led the Commission to explore all possible ways to increase the available budget in the first years of the EDF

[74] With a cut-off date of 31 July 2024 unless otherwise specified.
[75] Instead of a budget at call level only (like in EDIDP), leading to a potential winner-takes-it-all situation preventing to fund proposals against all topics inside the call.
[76] Ability to fund more than one proposal per topic.
[77] S-CIRCABC.
[78] Some additional meetings were organised for other purposes such as to address horizontal issues or to give opinion on the results of EDF evaluations
[79] Date of availability of the call documents (including call conditions) to the applicants.
[80] Despite the existence of prioritisation tools such as the CDP or OSRA.

and to frontload some of the budget of the subsequent years[81]. Such a mechanism not only allowed it to kick start some major development actions as of 2021, but also revealed to be flexible in case of unsuccessful calls resulting in unused budget.

Remaining inefficiencies

On residual inefficiencies, several Member States pointed out the **lack of budget** leading either to postpone some important follow-up topics, thus preventing a timely continuity of effort towards agreed objectives[82], or to split a topic in smaller parts, thus leading to unnecessary duplication of administrative burden on the applicants' side and additional costs without any added value from a project implementation perspective. Moreover, the decision to resort systematically to **competitive calls for follow-up topics** is also identified as a potential source of inefficiency in the defence area as it may put into question the work already performed and the budget already committed by industry and Member States. Industry also advocated[83] to resort to 'direct awards' for '*long-running topics, particularly those implemented by a well-established consortium focused on one capability (e.g. Flagship)'*, in order to improve the overall cost efficiency of the successive R&D actions.

4.1.2.2 Preparation of proposals and application process

The efficiency in the preparation of proposals and application process can be assessed from different angles.

Time to apply

As the calls for proposals are published earlier in the year (see Table 4), it has been possible to follow the long-lasting recommendation of the industry and **progressively leave more time to applicants to prepare and submit their proposal**. As depicted in Table 5, the time to apply has been increased from 5 months and 1 week in 2021 to 8 months and 2 weeks in 2025, which represent a 60% improvement. This extra time, a repeated request by applicants back from EDIDP, has been precious as the rules governing the eligibility to the EDF require to form consortia of at least 3 entities from 3 different Member States or Norway and may require the applicants to obtain several declarations signed by national authorities which usually take time. However, smaller entities looking for smaller projects and faster implementation are calling for a differentiated approach (see Section 4.1.2.3).

Year of implementation	2021	2022	2023	2024	2025
Time to prepare and submit proposals[84]	5m 1w	6m	7m 3.5w	7m 3w	8m 2w

Table 5 – EVOLUTION OF THE TIME TO PREPARE AND APPLY TO EDF CALLS FOR PROPOSALS (m = months; w = weeks). Source: DG DEFIS.

Standardised submission process and templates

Major improvements have also been introduced in the application process throughout the years since EDIDP. These include the resort to the Commission electronic submission system (compared to postal delivery of proposals under EDIDP)

[81] This is the reason why the work programmes from 2021 to 2024 were split into two parts.
[82] Such as the main expected outcomes identified in the MAP.
[83] Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024.
[84] Time from date of publication of the EDF work programme (and call topic description) to deadline for submission of the proposals. Availability of the call conditions and submission templates is usually delayed by a few weeks, but those do not change substantially from one year to the other.

and the provision of formatted corporate submission templates (instead of free forms leading to many errors under EDIDP) to handle all specific aspects of the EDF Regulation in a more standardised approach. Such templates cover notably the detailed budget tables implementing the EDF funding rates and bonus system, the control and ownership declaration, the actual indirect costs methodology declaration, the co-financing declaration, the declaration on harmonised defence capability requirements or the declaration on procurement intent and common technical specifications. These templates led to a higher efficiency for both the applicants (fewer clerical errors or missing information) as well as for the Commission (fewer and quicker requests for clarifications) in the subsequent stages.

However, consulted stakeholders reported **some remaining complexity linked to the number of supporting documents to be provided,** leading to extra administrative burden compared to other EU programmes. In particular, documents required to support the Commission assessment of ownership control of each applicant and – in case of non-EU control – guarantees, were described as time-consuming and affecting the application phase[85]. Consultations with the defence industry have also led to further ideas on simplification that could be implemented in the coming years, such as the possibility to reuse previously submitted ownership control declarations and guarantees in case of the lack of change in ownership. The Commission is exploring the feasibility of these recommendations from the technical and administrative perspective.

The defence industry also suggested the creation of a **two-stage submission** (and evaluation) process, in particular for the call topics receiving many proposals (non-thematic topics), stating that it could lower the threshold for small applications and improve the overall efficiency of the application process. However, if such process could lead to a better cost-benefit ratio for applicants, since only successful applicants at the first stage would be invited to deliver a full proposal for the second stage, this would likely attract more proposals at first stage, potentially putting at risk the evaluation workflow already under high pressure.

Finally, the impossibility of the **Commission corporate electronic system** (e-Grants) to handle several EDF-specific features (e.g. subcontractors, funding rates and bonus system, actual indirect costs) despite a substantial financial contribution of the programme to the system, was pointed out as a major residual inefficiency[86].

Guidance, support and outreach measures

A particular effort has been made to improve the support and guidance provided to the applicants compared to the precursor programmes. To raise awareness and attract new and non-traditional players to the programme, DG DEFIS has worked intensively to disseminate information related to the EDF and facilitate matchmaking opportunities. This included engaging in **outreach activities**, such as:

- Organising **annual EDF Info Days**, with a record number of 3 000 registered participants in 2024, an increase of 67% compared to 2022[87], including unique matchmaking opportunities to form consortia, pitching sessions, and dedicated sessions and tutorial progressively introduced to provide technical guidance on

[85] The situation evolved as of 2022 with the supporting documents being requested only for the proposals selected for funding during Grant agreement preparation.

[86] Also impacting the Grant agreement preparation and project implementation

[87] 1 800 (including 500 on-site) registered participants in 2022; 3 000 (including 900 on-site) in 2024.

EDF-specific features like the ownership control assessment, the actual indirect costs or the SME and mid-cap assessment[88].

- Supporting annually around 15 **information days** in Member States/Norway.
- Presence at **major aerospace and defence exhibitions**, as well as at conferences and technology events.

The Commission also established a network of **EDF National Focal Points** (NFPs)[89] which consists of contact points appointed by national authorities from all Member States and Norway to assist applicants and beneficiaries. The NFPs[90] have wide-ranging and active interactions with stakeholders, reporting that they assist between 80 to 250 applicants per year and organise an average of 10-20 EDF-related matchmaking events, seminars and workshops per year, with good participation rates. The EDF increased the capacity of the network by funding a project 'Expanding Opportunities for All' with EUR 1.5 million. The defence industry has reported that the work of NFPs '*significantly facilitates*' their participation in the EDF[91].

Another important outreach opportunity is the **European Network of Defence-Related Regions** (ENDR)[92]. When consulted with questionnaires, its members highlighted how their role greatly facilitated the flow of information about funding opportunities including in EU regions which might not otherwise receive such information.

In addition, support to applicants through the EDF functional mailbox has been greatly appreciated. As shown in Table 6 below, the average time to reply to questions has considerably improved while the decrease in the number of questions received can be considered as a good indicator of the uptake of NFP network and of the clarity of the communication material (info days material, call documents and templates, FAQs on the *Funding & Tender portal*[93]).

Year of implementation	2021	2022	2023	2024
Number of questions received in functional mailbox	452	203	297	190
Average time to provide an answer (days)	9	7	5	4

Table 6 – INDICATORS LINKED TO THE EDF FUNCTIONAL MAILBOX FOR APPLICANTS. Source DG DEFIS

88 See European Defence Fund (EDF) - Official Webpage of the European Commission. - European Commission

89 The establishment of the EDF-NFP network followed a recommendation from the Action Plan on Synergies between Civil, Defence and Space Industries, 22/02/2021.

90 The EOA (Enhanced Opportunities for All) project, awarded with EUR 1.5 million, will enhance the coordination and functioning of the EDF-NFP network by fostering matchmaking activities to facilitate the forming of consortia participating in the EDF calls. EOA - Factsheet_EDF22.pdf

91 Survey undertaken with NFPs in the context of the EDF interim evaluation (further information in the synopsis report). Beyond difficulties in finding partners or entering consortia, applicants also frequently approach NFPs for questions centred around governmental supporting documents. For beneficiaries, questions often focused on national agreements, legal requirements and finances (including (in)direct costs and co-financing).

92 It currently consists of 63 regional organisations, administrations and defence clusters from 23 Member States and Norway.

93 FAQ posted on the *Funding & Tender portal* stem from the questions received via the functional mailbox or during the info days. Topic-specific FAQs are now visible directly on the topic page.

Stakeholder box: Views on improved efficiencies and simplifications in the EDF's application process compared to precursor programmes*

80% of the stakeholders stated that the clarity of information and documents requested has improved compared to precursor programmes. 50% of the stakeholders stated that the timelines between the calls for proposals and application process has improved and 30% that it has partially improved.

***** *Consultations with EDF beneficiaries (workshop and survey with large defence industry). Further detailed in the synopsis report*

Overall, the defence industry and beneficiaries consulted, and in particular SMEs, mid-caps and RTOs, positively acknowledged the Commission's efforts to provide **good quality communication materials and outreach activities** in support of the application process. The opportunities provided for networking and matchmaking are appreciated by applicants and beneficiaries and have contributed to the increase in participation in the EDF calls for proposals over the years.

4.1.2.3 Evaluation of received proposals and Grant Agreement Preparation (GAP)

Improvements and simplifications leading to higher efficiency

The EDF evaluations are conducted directly by the Commission in a centralised manner, with the support of external independent experts[94] to assist the Commission in the assessment of technical, ethics and financial aspects. Given the sensitivity of a defence programme such as the EDF, all received proposals are submitted as encrypted files and handled as sensitive non-classified during the evaluation[95]. Moreover, the evaluation summary reports, evaluation committee panel reports, call evaluation reports and draft award decisions produced during the evaluation process are classified RESTREINT UE/EU RESTRICTED until information to the applicants following the positive opinion of the EDF Programme Committee. In addition, all independent experts involved in the evaluation process must be in the possession of a valid personnel security clearance at the level of CONFIDENTIEL UE/EU CONFIDENTIAL (or equivalent) issued by the relevant national authorities[96].

Information box: Ethics assessment in EDF projects

In line with Art. 7 of the EDF Regulation, consortia applying to the EDF must perform an Ethics self-assessment of their proposal. Based on the results of this self-assessment (answers to a questionnaire), Ethics screening and assessment is carried out by the Commission with the support of independent experts. In total, **142 proposals submitted under the 2021-23 calls have gone into ethics screening**. The outcome of the ethics screening can be ethics clearance, conditional ethics clearance or no ethics clearance. No ethics clearance means the proposal is further pushed to the ethics assessment phase. **In total, 6 ethics assessments were made for EDF proposals**.

94 The Commission placed 380 contracts with overall 223 different independent experts to carry out the evaluations from 2021 to 2023.

95 Unless otherwise specified in the EDF work programmes.

96 For more information, see Defence industry – call for experts to assist the European Commission with the evaluation of proposals submitted for funding under the European Defence Fund (2021-2027) – European Commission.

Despite these security constraints, the complexity stemming from the EDF-specific eligibility conditions and award criteria, and a significant increase in the number of proposals submitted, **the time needed to run the evaluations has been reduced over the years**, as shown in the Table 7 below, in line with the recommendation of the *Court of Auditors*[97] and the provision of the EU Financial Regulation[98].

Year of implementation	2019*	2020*	2021	2022	2023
Time needed from call closure to information to applicants about the evaluation results (in days)	272	211	223	211	176

Table 7 – EFFICIENCY GAINED IN THE EVALUATION PROCESS. Source: DG DEFIS. * Precursor programme EDIDP

This was mainly possible thanks to incremental improvements implemented in the first years of the EDF:

- **Use of tailor-made tools to support the EDF evaluation in a secured and optimised way**. Such tools include automatic extraction of data from submitted proposals[99], development of DEFEND-S[100] to support the entire evaluation workflow including all EDF-specific requirements.
- **Optimisation of independent experts' involvement**. Earlier selection procedure with checks on the experts used in different panels, including in terms of conflicts of interest[101]. Shift from physical (EDIDP) to remote evaluations allowing considerable time and cost savings compared to EDIDP situation. In parallel, the accessible pool of experts with relevant expertise and security clearance has improved significantly thanks to communications and outreach activities (in particular through the NFP network).
- **Optimisation of the eligibility checks**. Some specific eligibility checks (ownership control assessment, SME or mid-cap status, eligibility of some costs for lump sum grants) have been postponed to grant agreement preparation (GAP) to reach a higher efficiency by limiting the verifications to the sole projects selected for funding. In addition, some of these tasks benefit from the support and experience of the European Commission's Research Executive Agency (REA).

EDF calls' independent observer reports from 2021 to 2023 have consistently described the **evaluation process as of 'high quality',** producing *'a correct result of selecting proposals to be funded'* and *'the evaluation process being very efficient, in particular, taking into account the considerable magnitude and complexity of the exercise…'*.

On information to applicants, **unsuccessful applicants have highlighted a significant improvement in communications with the Commission**. While in the first years limited feedback was given to unsuccessful applicants, the results letters now provide applicants with reasons for inadmissibility and ineligibility. This ensures that the EDF application process becomes a learning experience and renders the application process

97 European Court of Auditors, Special Report, 26/04/2023, 'The Commission should, in comparison to PADR, reduce the time taken from the moment calls for EDF are closed until grant agreement signature.'

98 Article 197(2) of Regulation (EU, Euratom) 2024/2509 of the European Parliament and of the Council of 23 September 2024 on the financial rules applicable to the general budget of the Union (recast).

99 Data from the electronic submission system (e.g. Part A) crosschecked with data extracted from detailed budget tables.

100 DEFEND-S was initially developed for the evaluations in 2021 and was continuously improved over the years to implement the lessons learned from previous exercises.

101 To prevent conflicts of interest, independent experts of the same nationality as the coordinator of the consortium or from the same entity as one of the applicants cannot be involved in the evaluation of the proposal.

more likely to succeed the next time (at least on inadmissibility and ineligibility conditions). As shown in Table 8 below, the number of inadmissible and ineligible proposals decreased from 15% in 2021 to 10% in 2023, demonstrating that communication efforts have contributed to a better understanding of EDF since its start, thereby allowing applicants to save time and resources. The increased clarity of the EDF and its application process is also reflected by the decreasing number of redress cases as a ratio of the number of proposals submitted (0 redress cases in 2023 concerning admissibility and eligibility issues), which further improves cost efficiencies and saves resources within the Commission[102].

Year of implementation	2021	2022	2023
Percentage of inadmissible or ineligible proposals out of total number of proposals received	15%	12%	10%
Number of redress cases on admissibility or eligibility review	6	5	0
Number of redress cases on evaluation review	3	4	10
Percentage of redress cases out of total number of proposals received	6%	7%	4%

Table 8 – PERCENTAGE OF INADMISSIBLE OR INELIGIBLE PROPOSALS AND NUMBER OF REDRESS CASES. Source: DG DEFIS.

Remaining inefficiencies

Despite the improvements listed above, several inefficiencies have been pointed out by the consulted stakeholders.

First, the **requirement to have independent experts in possession of a valid personnel security clearance** (PSC) issued by their national security authority hampers the possibility to rely on a more extensive pool of experts. Throughout consultations, project officers (including for PADR within EDA) have highlighted that the requirement to have a valid PSC at the time of application prevents valuable experts such as former defence personnel now acting as freelancers to be selected. In addition, some of the experts having to renew their clearance may encounter delays in the process, leading to last moment rejection of preselected experts impacting the planning of the evaluations. In addition to the PSC issue, the Commission has also raised awareness of the **lack of experts from smaller Member States**.

Second, the **EDF award criteria have been described as complex** and their assessment as time-consuming, with recommendations to merge certain evaluation criteria in the future[103], as also highlighted by certain Member States.

Last, the grant agreement preparation phase has to accommodate key critical activities: the **establishment of the security framework**[104] for each selected project as well as the **signature of the co-financing** needed to carry out the development projects, which are specific to the EDF programme. These activities entail substantial information exchange between consortia members, Member States and the Commission and require validation by competent national authorities. Although the situation has slightly improved on certain aspects over the years, consulted stakeholders pointed out the lack of appropriate

[102] The ratio of overall redress cases decreased by 33.3% from 2021 to 2023.

[103] The criteria have not been specified to comply with the classification of the EDF 2021-2023 observer reports (classified as SENSITIVE).

[104] According to Article 27(4) of the EDF Regulation, the applicable security framework is to be decided by the Member States on whose territory the recipients are established. If no such specific security framework is set up by those Member States, the Commission will set up the security framework for the action in accordance with the Decision (EU, Euratom) 2015/444.

means and procedures to ease those critical activities that are a prerequisite for the signature of the grants. Consequently, the **time from information to applicants to the signature of the grants has not improved**[105].

4.1.2.4 Grant management and project implementation

The management of EDF grants and the project implementation are long and cumulative activities (i.e. accumulation of awarded projects that last on average around three years) that entail payments from the EU budget (i.e. most of the EDF budget) with expected tangible results. The main drivers to the efficiency of the grant management and project implementation are the types of grants, the management mode (direct or indirect management), the reporting obligations (technical and financial) as well as the timely establishment of co-financing (where needed).

Types of grants

Most of the EDF budget is implemented through grants either in the form of actual costs[106] or in the form of lump sums (i.e. simplified funding scheme)[107]. The lump sum cost methodology was tested successfully throughout the precursor programmes as a way of potentially reducing administrative burden during project implementation[108]. Beneficiaries consulted also reported that the **use of lump sums has been greatly appreciated.** Based on lessons learned, lump sums have been progressively extended to more calls (i.e. almost 17% of the EDF budget in 2025) where the budget per proposal is capped to low amounts, thus limiting financial risks for the Commission.

Direct vs indirect management

The Commission directly and centrally manages 133 EDF projects, while 29 EDF project are implemented under indirect management by EDA and OCCAR which act as entrusted entities under the provisions of Contribution Agreements signed with the Commission. The projects indirectly managed represent a total EDF budget of EUR 625 million (out of a total of EUR 3.12 billion). The remuneration of the entrusted entities to be paid by the EDF budget amounts to EUR 12.4 million, i.e. less than 2% of the total budget managed indirectly. As a comparison point, 15 out of 18 PADR projects were implemented under indirect management by EDA and 2 out of 42 EDIDP projects were implemented under indirect management by OCCAR.

[105] 170 days in 2019, 156 in 2020, 147 in 2021, 175 in 2022 and 213 in 2023 (year of the calls).

[106] Actual costs means that the Commission will reimburse only costs actually incurred by the beneficiaries during the project, after verification of evidence of these costs. Lump sums are determined once and for all during grant agreement preparation after verifications of the detailed budget estimations provided by the applicants, and from then payments will take place upon completion of work packages without financial *ex post* controls.

[107] Although Article 16 of EDF Regulation provides for the possibility to use another simplified funding scheme, i.e. a 'contribution not linked to costs' in certain cases, this provision has not yet been used.

[108] During PADR, three small projects were launched to test different aspects of the lump sum methodology. The European Court of Auditors acknowledged the usefulness of testing this process in PADR. During the implementation of the EDIDP, the two projects funded as direct awards (ESSOR and MALE-RPAS) and implemented in indirect management by OCCAR are funded using a lump sum methodology for EUR 133 million.

Information box: Indirect management under EDF

Indirect management within the EDF is limited to the management of some specific action grants. The only entities that have been cleared as entrusted entities for the management of EDF grants are OCCAR and EDA. Both have already been appointed to manage specific EDF action grants with the following associated costs:

- For EDA, the average management fee per project is €0.44 million, which is 3.0% of the average total EU budget per project.
- For OCCAR, the fee is on average €1.3 million or 1.4% of the average total EU budget.

Direct management of EDF projects has proven very valuable in gaining experience in implementing a new and complex defence R&D programme for which the Commission initially had little technical background. If it required a substantial investment over the years to recruit the necessary external expertise, it also enabled short loop interactions between services in charge of the implementation and services in charge of policy development, which was precious for the elaboration of the ASAP and EDIRPA instruments.

When comparing the total EDF budget with the relevant staff involved in direct management (see Table 9 below), **the productivity of direct management is comparable to the high end of the scale of productivity of wider EU spending programmes**. In particular, when compared to cost of indirect management and resource requirements of executive agencies for comparable volumes, direct management is a cost-effective way to implement the EDF. However, due to fixed costs, managing a high volume of small projects (as resulting from the annual non-thematic SME, SMERO and DIS call topics) is less cost-effective than managing a reduced number of large projects.

Year of implementation	2021	2022	2023
Average number of projects per Project officer	5.5	6.3	7
Average budget managed per Project officer (in EUR million)	19.4	48.7	51.1

Table 9 – INDICATORS OF STAFF WORKLOAD/PRODUCTIVITY. Source: DG DEFIS

On indirect management, OCCAR and EDA remuneration[109] is expected to decrease over time as they gain experience in managing EDF grants. However, both EDA and OCCAR recognised that **greater project complexity generally entails longer integration times, which in turn leads to higher administrative costs**.

On the functioning of indirect management, **both EDA and OCCAR were satisfied of being entrusted with managing EDF projects that they were interested in and could handle efficiently**. They also expressed satisfaction with improvements compared to precursor programmes[110]. While the decision to resort to indirect management for specific projects was previously taken at the time of the award decision, plans are now incorporated upfront into the EDF work programmes, which allows for better preparedness and efficiency. This does not exclude refinements at the time of the award decision. Also, the Contribution Agreements with EDA and OCCAR initially concluded per project are now being supported by **longer-term Financial Framework**

[109] The fees are in relation to the handlings during the implementation and not volumes or size per se.

[110] Throughout Grant Agreement preparation, monitoring of the Grant Agreement implementation, payments and reporting to the Commission.

Partnership Agreements (already in place with OCCAR and soon with EDA[111]), making the conclusion of specific arrangements per project faster and leaner, thereby strengthening internal long-term planning and responsiveness. The collaboration with EDA and OCCAR also aims to better oversee the successful implementation of the awarded projects by **coordinating EU funding with linked procurement contracts** financed by Member States thereby further maximising efficiencies.

Consulted project officers noted that the direct management mode (the default mode under the EDF Regulation) ensured efficiency gains, a comprehensive overview of the implementation cycle of the EDF as well as responsive feedback to policy initiatives based on project results and programme planning. The indirect management has brought strong added value when combined with expertise in specialised defence R&T projects, as well as for large-scale capability projects already managed by the entrusted partner.

Project box: Maximising efficiency with indirect management

The EDIDP contributes to the development of the Eurodrone by building on an intergovernmental cooperation programme already managed by OCCAR. In this context, it was decided that the EDIDP MALE-RPAS grant should also be managed by OCCAR. Consultations have confirmed that relying on the expertise and resources of OCCAR has maximised the efficiency of the support to the Eurodrone project.

On a more process-based perspective the EDF beneficiaries reported a **good, regular and constructive communication with project officers from the Commission, EDA and OCCAR**. In addition, the **use of e-GRANTS** has been extended to EDA staff as of 2023 and has been described as an excellent improvement to optimise staff effort and rated as generating 'significant cost savings' in the questionnaires with project officers from EDA. Overall, a vast majority of consulted defence industry and beneficiaries have stated that **the project implementation stage is considered as more efficient in EDF than in precursor programmes**, with improved procedures and simplification measures. Cooperation with the Commission project managers is good and considered beneficial for the implementation of the projects.

Project box: Practical examples of internal efficiencies since precursor programmes

- Concerning PADR, EDA has described how its financial management has been an opportunity 'to learn and improve internal procedures on the management of EU funds under indirect management', which has now given the EDA 'the opportunity to settle the path for future programmes as it is now the case of EDF'.
- Concerning EDIDP, within the Commission it took an average of four months to have declarations of honour signed and now in EDF it takes around three-and-a-half weeks.

Reporting obligations

The **reporting obligations for individual projects are proportional to the project's complexity** and vary depending on the management mode. EDF projects are monitored through the (standard) combination of continuous and periodic reporting. Project officers

[111] The financial framework partnership agreement will embed a new cost model (fixed costs per project and variable costs) which seems promising to EDA so that they can better plan/calculate internal resources for cost planning. This should allow grants to be signed under indirect management by EDA at the same time as those under direct management (vs three- to six-month delay at present).

in both direct and indirect management have described how '*reporting of the EDF deliverables and milestones provides in principle all the granularity needed to track the results and the progress of the projects to the best possible extent*'.

Following consultations with the EDF beneficiaries **the overall reporting obligations required from the grant beneficiaries were commensurate to the Commission's legal and financial obligations** to certify the work before proceeding with the payment:

- A **reduction in the number of deliverables while having more practical interactions and demonstrations** for project officers at the Commission, EDA and OCCAR. Throughout consultations with beneficiaries this simplification appeared to have been implemented effectively, even though some project officers have found certain projects to still have too many deliverables proposed by the consortium.
- During the implementation of the EDF projects there is **no reporting obligation towards the Member States** though there is the possibility for Member States to appoint a project manager to monitor the progress made and which must be consulted by the Commission before any payment is executed.
- Following lessons learned from precursor programmes and recommendations by the Member States, the EDF adopted the **use of corporate Model Grant Agreements and IT tools to harmonise reporting**, which both beneficiaries, EDA and OCCAR recognised to 'have profoundly improved' the efficiency of reporting[112].

However, **more investment in human and material resources (e.g. analytical software to track projects results) for reporting and monitoring of the EDF projects** has been mentioned as a priority by project officers. Such investments should also ensure a proper accreditation to handle information at the appropriate security levels, as stated by project officers in both direct and indirect management. Corporate IT tools accredited to handle information up to the level of R-UE/EU-R or even higher would also facilitate the exchange of information between the Commission and the project coordinator. Such investment could be extended to the control of reported actual costs and requested payments, even though the Commission is still in a testing phase as the first reporting periods (and associated payment requests) of EDF 2021 projects took place in 2024 only. Such control includes standard *ex ante* controls and stricter controls (risk-based and sample-based) to verify justificative documents of the expenses as well as *ex post* audits.

Focus on indirect costs

Article 15 of the EDF Regulation allows recipients, under certain conditions, to claim their actual **indirect costs.** The EDF is the only EU programme offering such possibility, as an alternative to a default 25% flat rate of the declared eligible direct costs[113] which is higher than the standard practice in other EU programmes (i.e. 7%). Looking at the EDF awarded projects from 2021 to 2023, 20% of recipients[114] are claiming actual indirect costs. The possibility of reporting actual indirect costs has been described by industry as

[112] Following a discussion note and questionnaire separately distributed to EDA and OCCAR on the EDF in the context of the bilateral discussions on the EDF interim evaluation

[113] Excluding direct eligible costs of subcontracting and support to third parties and any unit costs or lump sums which include indirect costs.

[114] Beneficiaries and affiliated entities, including duplicates.

a *'very significant step in favour of the industry and a key success factor for the EDF'*[115] and had been introduced following long-lasting discussions during EDIDP[116]. To benefit from this possibility, applicants have to provide a methodology declaration certified by their national authorities (with audit powers) which confirm the use of the methodology for comparable national projects in the defence sector. Methodologies are certified during audit processes at national level, having as purpose the definition of recognised rules to conclude agreements with the national governments. Only 8 Member States and Norway declared such competent national authorities having actual indirect costs experience in the defence sector. As a result, recipients resorting to this possibility belong to these countries and are mainly research organisations or large companies with strong defence background. The weight of actual indirect costs[117] vary significantly between the beneficiaries concerned and, for each beneficiary, between the projects in which they participate, depending on the beneficiary's cost structure, the methodology applied, and the type of direct costs included in the proposal. Considering all awarded projects from 2021 to 2023, the relates to an average weight of around 83%[118].

Outstanding remaining inefficiencies

Certain outstanding concerns remain which increase the administrative burden of the EDF project implementation for beneficiaries resulting in inefficiencies. These include firstly the **size of the consortia which is described as difficult to manage**, secondly the delays in obtaining **co-financing by Member States**, and thirdly the difficulties in **communicating and accessing important information within the main actors**.

The first main concern is **the size of some consortia, which can exceed 50 partners for some projects**. The situation is especially problematic when the total amount of funding is limited, leading to spend EDF funding in mere coordination tasks without actual added value from an EDF perspective. This issue has been recognised by large defence industry as a consequence of aiming to form wide cross-border cooperations to score high in award criterion on 'new cross-border cooperation' (that counts double) and, for development actions, to get access to increased funding rates. It is to be noted that none of these reasons justify the need to include all participants in the consortium as the first-tier subcontractors would be equally considered for those two aspects. Other reasons were put forward by consulted stakeholders such as the fact that the Commission communication on the projects selected for funding ('project factsheets') was not including the list of subcontractors or the fact that subcontractors might have limited

[115] Reported both by the Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024 and throughout workshops held with the defence industry (workshops further detailed in the synopsis report) in which large actors reported that the application for EDF grants based on the declaration of actual indirect costs was preferred and more attractive than the 25% flat rate applied under the EDIDP. The Commission Expert Group further noted: '*The current model that leaves industry the freedom to choose between two possibilities, either applying for actual indirect costs reimbursement or opting for the flat rate, is highly appreciated and should be maintained.'*

[116] Under the EDIDP, indirect eligible costs were assessed at a 25% flat rate of direct costs. However, indirect costs can sometimes equal direct costs in defence R&D (especially for large capitalisation firms (large caps). This too low coverage of indirect costs proved to be a serious limitation of the EDIDP.

[117] Ratio between the claimed actual indirect costs and the direct costs categories used for the application of the standard 25% (i.e. direct costs excluding direct eligible costs of subcontracting and support to third parties and any unit costs or lump sums which include indirect costs).

[118] These statistics consider only weights above 25%, even though several entities claimed actual indirect costs amounts leading to weights lower than 25%.

responsibilities and funding[119]. Further consultations and analyses would be needed to address in the best possible ways the root causes and propose necessary improvements.

The second main concern hampering the efficiency of project implementation is the **observed delay in obtaining co-financing**, which may generate cash flow issues for the consortium partners. The Commission has conducted an in-depth analysis of the co-financing issues to identify its root causes. All consulted Member States indicated that the co-financing issues are stemming from the **delay required to set up the prerequisite cooperation framework** (Memorandum of understanding) and from the **difficulties to agree on IPR provision**s between Member States and then with the consortium. While all parties recognised the importance to standardise the practices and templates for such cooperation frameworks, the Commission and the European Defence Agency already explored some measures to support Member States and the industry solving these issues.

Background box: Challenges concerning IPRs

IPR management is linked to two key challenges: the **difference of rules between EU grants and national grants**, and the **international nature of EDF consortia.**

- In practice, the **EU defence industry, which invests its own funds to conduct R&D, expects to retain IP ownership associated to the results**. This is fully aligned with the mindset of the grant agreements associated to the EDF calls, under which the IP is owned by the industry. However, there is a first challenge in the fact that the IP for the final solution developed is not owned by a single entity but is shared among consortium members (with sometimes dozens of members), which are themselves spread across different Member States.
- By nature, the EDF ultimately aims at creating joint procurement opportunities hence involving several Member States. When establishing co-financing agreements, preparing memoranda of understanding or procurement arrangements with Member States, the second challenge is that **Member States have their own expectations of associated IP ownership** (as often the case in national projects) or at least some user rights over the solution. Such rights can be defined on a spectrum going from a simple access to the solution without any ownership of IP to the rights to exploit and transfer the IP to other entities. In addition, when defining the rules for IP rights at the procurement phase, the different levels of initial funding from the partners leads to some Member States expecting some recovery mechanism to compensate for the difference in investment.

The third main issue delaying project implementation relates to **difficulties in communicating and accessing information between key actors**, present in three different instances 1) Member States having different procedures to ensure the granting of intra-EU transfer licences to defence industry 2) differing views between defence industry and Member States over IPR management and 3) the Commission not being granted access to project results: project officers have reported how the **lack of access to project deliverables by the Commission** represents a considerable challenge. Part of the issue is linked to the role of the project manager, appointed by Member States, who monitors the execution of EDF actions and coordinates national efforts to ensure that recipients adhere to agreed timeframes and deliverables. The **project manager's exact**

[119] Subcontracting should normally constitute a limited part and must be performed by third parties (not by one of the beneficiaries/affiliated entities). Subcontracting going beyond 30% of the total eligible costs per beneficiary/affiliated entity must be justified in the application and may be accepted by the granting authority if the topic is not subject to a fixed subcontracting limit.

tasks and responsibilities are not clearly defined and are sometimes not well understood by Member States, leading to variations in how the role is implemented across different projects. To improve consistency and effectiveness, both the appointment process and the task definition could be better defined. On transfer licences, EDF beneficiaries have recommended that Member States consider solutions to **ensure that export licence granting takes place before the actions start**, as the lack of them 'has been one of the main difficulties for the launch of EDIDP projects.' In particular SMEs and RTOs have reported difficulties to reach the right authorities in their respective Member States causing delays in the projects' implementation. The defence industry has suggested a use of General Transfer Licences for EDF projects.

Project box: A practical example of transfer license issue

The lack of approved transfer licences required for some project-related information, prevented consortium members to exchange documents required to progress on the implementation of the project as well as to release reports to the Commission. The lengthy procedures to ensure the compliance by all industrial partners with the different national obligations and to authorise the transfer to consortium partners established in other Member States or associated countries led to significant delays in some projects (from 10 to 18 months).

Throughout consultations Member States have underlined how the **inability to access full project proposals hinders their visibility** to understand what results they may obtain through EDF-funded actions to begin with. This creates uncertain expectations and an inability to have a clearer co-financing planning between Member States and consortia. **An intermediate level of user rights for Member States should be considered in order to stimulate their interest and incentives** to procure the final solutions. This requires a two-way negotiation between the consortium and the contributing Member States. As underlined by a large defence industry beneficiary, in the case of a lack of co-financing from national authorities, the concessions on the IP toward the Member States (so ultimately, the potential for procurement contracts) are even more challenging to envisage.

In addition, considering the EDF conditions on collaboration, certain **defence companies perceive that sensitive competitive proprietary company knowledge might be disseminated**. Some non-beneficiaries have highlighted the fear of leak of intellectual property as one reason for not participating in the EDF. These are issues that should be further explored in future programmes and that for the time being will be carefully monitored by the Commission, EDA and OCCAR project officers.

Due to the agreement of the Commission to accept security frameworks in which the **Commission is not granted by default access to project documentation and results**, project coordinators must communicate information twice (first to Member States and then to the Commission). This is another complexity that adds into the difficulties the Commission is facing in monitoring and tracking project results once projects come to an end.

Other remaining inefficiencies

Several **SMEs encountered difficulties in estimating their costs at submission stage**, as they were not aware of security provisions that would incur additional costs (e.g. security clearance, setting up facilities to store confidential data and purchasing the necessary encryption software or licences), all the more as the security framework of the

project is defined only during grant agreement preparation. In addition, SMEs and mid-caps reported unexpected costs concerning proposals and applications that underwent ethics screening and assessment. Both SMEs and research organisations have little experience during the implementation of the projects in matters related to **handling classified data and control of intra-EU transfers of defence-related products**. To address this issue, the support measures described in Section 4.1.2.2 have been taken.

The **significant inflation experienced after the COVID crisis** was also reported as a factor impacting the grant implementation, as the maximum grant amount is fixed at grant signature and cannot be increased. It results that the cost estimate of the applicants should have ideally included inflation scenarios otherwise they will have to absorb the impact unless the 25% of indirect costs give them some flexibility.

4.1.2.5 Overall efficiency of the EDF implementation

The qualitative and quantitative elements provided in the previous sections show the progressive improvements and simplifications introduced throughout the years which led to a higher efficiency of EDF's implementation. Beneficiaries observed that the **EDF is becoming a simpler programme to apply to and to work with** 'as its instruments and opportunities became better known throughout the years'. This is also valid when comparing EDF to precursor programmes as the Commission, Member States and beneficiaries have collectively drawn lessons and established internal practices that work well and have almost become routine.

In this context, assessing the cost efficiency of EDF implementation would require establishing the overall costs of having the EDF run. Summing up all the cost items contributing to each implementation stage can provide a first rough estimate. However, **such estimate remains very approximative as many other cost factors cannot at this stage be identified and quantified** (e.g. costs incurred by Member States and Norway to follow and accompany the EDF implementation). Table 10 below summarises the resulting cost estimate for the period until 31 July 2024.

Cost item	Estimated cost (in EUR)
Commission staff, contractors and seconded national experts	35 000 000
Reimbursement of participations to EDF expert groups and programme committee meetings	105 000
Cost for applying to EDF calls 2021, 2022 and 2023[120]	257 000 000
Commission Info days	420 000
Financial support to the NFP network	1 500 000
Independent experts	2 320 000
IT system development (DEFEND-S and other tools)	300 000
IT systems use	12 000 000
Fees to entrusted entities EDA and OCCAR	12 400 000
Other communication costs	600 000
Security (guards)	250 000
TOTAL ESTIMATED COSTS[121]	**321 895 000**

[120] Based on assumptions collected among interviewed applicants and the average cost of staff involved in EDF projects, the contractor that supported the EDF interim evaluation roughly estimated the average costs incurred by the average EDF proposal consortium (13 entities) to around EUR 500 000, hence the total costs for the 514 proposals received. Such amount has therefore to be taken with care since it is based on assumptions rather valid for large-scale capability projects (>EUR 30 million), whereas most of the proposals received address smaller projects (max EUR 4 million). See Annex IV for more details.

[121] Administrative and management costs of awarded projects are not included in this total. These costs are eligible costs and usually amount to 10% of the overall costs, without information about the exact share

Table 10 – SUMMARY OF THE IMPLEMENTATION COSTS. Source: DG DEFIS.

$$\textbf{EDF cost efficiency (rough estimate)} = \frac{(\text{EUR } 3\,116\,000\,000^{122} - \text{EUR } 321\,895\,000)}{\text{EUR } 3\,116\,000\,000} \simeq \mathbf{90\%}$$

However, such a bottom-up approach, with all the limitations that it implies, **does not factor in all the potential benefits resulting from the EDF investments on the EU economy and security environment**: innovativeness and competitiveness of the EU industry that can open new market opportunities (even beyond defence), impact of a collaborative approach on more efficient R&D spending (less gaps and overlaps, bigger scale, more risk-taking) at EU level, including in terms of interoperability, compared to national and potentially duplicating approaches, widening the European market, impact on GDP and employment, impact on the security of the EU and on the influence of the EU at global scale, including on standards setting. Without going as far as simulating all those potential benefits, a macroeconomic study has been conducted to provide a complementary view from a 'return on investment' angle.

Macroeconomic benefit

> ***'The EDF is not only a strategic catalyst for defence cooperation and industrial competitiveness but also a significant contributor to overall economic growth and job creation in the EU, reinforcing the value of such investments'*** Quote from the macroeconomic impact assessment on EDF benefits[123]

The Joint Research Centre (JRC) conducted a macroeconomic impact assessment on the benefits of the EDF[124] to estimate the **economic returns of EDF investments in terms of GDP and employment**. While the assessment faces important limitations due to the early stage of programme implementation, it provides valuable insight into the expected socio-economic results of the fund.

The EDF is projected to lead to **a maximum of EUR 2 954 million increase of GDP in 2030 and the creation of additional 32 413 jobs across the EU**[125]. As the EDTIB is estimated to employ around 500 000 people, this data illustrates the solid impact of EDF for the economy.

It is worth noting that these projections remain conservative (e.g. spill-over effects on civil sector have not been accounted for) compared to other recent international studies conducted on the economic returns on defence R&D. One such recent study assessed the effective returns for defence R&D to be between USD 8.1 and USD 9.4, higher than non-

of pure administrative costs. It is to be noted that such costs also exist for non-EDF projects. The overhead costs linked specifically to EDF could not be assessed.

[122] Amount of EU funding under work programmes 2021-2023.

[123] The RHOMOLO macroeconomic impact assessment of the European Defence Fund 2021-2027.

[124] The RHOMOLO macroeconomic impact assessment of the European Defence Fund 2021-2027.

[125] *The RHOMOLO macroeconomic impact assessment of the European Defence Fund 2021-2027* (2025). JRC Seville, compared to 2018.

defence R&D due to radically different obstacles that defence R&D must overcome with trial-and-error approaches[126].

Therefore, considering the wide-range macroeconomic benefits projected, it is safe to assume that if the projections were to materialise **the EDF is a highly cost-efficient instrument**. In particular, it is important to note how defence industry and think tanks unanimously highlighted the need for a budget increase in the EDF to further maintain cost-effectiveness and safeguard the incentivising power of the EDF in the context of increased national defence expenditures. This is also in line with previous Commission statements that the Commission must consider strengthening the EDF's budget, within the overall review of priorities in the mid-term review of the MFF[127].

Stakeholder box: Key actors' opinions on the cost-efficiency of the EDF *(Consultations with EDF beneficiaries)*

The majority of consulted EDF beneficiaries have made the following assessments, also considering the aforementioned costs they are incurring. The majority have predicted **a strong cost-efficiency** of the EDF due to the following factors:

- The EDF's **strong risk reduction** for the defence industry would not have been technically or financially feasible at national level.
- The EDF's immediate support to cross borders cooperation involving companies from various Member States, which will theoretically **increase the potential procurement of the developed solutions.**
- Products are increasingly benefiting cutting-edge technologies and gaining in complexity, implying increasing R&D costs for the industry. A further increase of the EDF budget is welcomed as a way to keep R&D affordable and cost-effective, ultimately preserving the capacity of the industry to **keep up with the global competitiveness.**
- Member States have described that the EDF projects are on a good pathway to filling capability gaps in the EU and improving the quality of the defence products and technologies, standardisation will be fostered as well as interoperability of equipment. This **will ultimately enable significant savings at national level**, in support and maintenance, repair and overhaul activities, and will facilitate joint operations.

4.1.3 Coherence

This section examines coherence of the EDF with other relevant programmes and initiatives. As stated in the EDF Regulation, **the planning and programming of the EDF is directly based on the input from Member States**, which determine their defence capability development priorities under the Capability Development Plan (CDP)[128] and identify areas for potential cooperation during the Coordinated Annual

[126] The economic returns on defense R&D. Global Economics & Markets (RaboResearch). 15 January 2025. The study concludes that the 'effective 'bang for the buck' on defence R&D is between $ 8.1 and $9.4; by comparison, for non-defence R&D it is $1.5 to $1.7.'

[127] Joint Communication on the Defence Investment Gaps Analysis and Way Forward. JOIN(2022) 24 final. 18/05/2022

[128] As further explained in the EDIDP ex-ante Evaluation SWD(2017) 228 final, 'When capability priorities are commonly developed and agreed within the EU (notably through the CDP) a higher degree of convergence regarding the above-mentioned elements should be realised. This should make the definition of common technical specifications easier and should thus improve the efficiency of collaborative projects from an industrial point of view.'

Review on Defence. The EDF also seeks to ensure coherence and complementarity with projects developed under other contexts of cooperation (e.g. PESCO, EDA Category B projects). Where appropriate, regional and international priorities may also be taken into account, including in the NATO context, while considering the need to avoid unnecessary duplication. In addition, the EDF, and in particular its EUDIS measures, increasingly promote synergies with the civilian sector.

4.1.3.1 Coherence with other EU defence initiatives

Coherence with CDP and CARD

Consultations with the Member States, EDA and EEAS/EUMS demonstrate a **strong coherence between the EDF and EU priority-setting tools (CDP) and initiatives to identify collaborative opportunities (CARD).** Importantly, all EDF development call topics and resulting projects are, by design, addressing at least one CDP priority. They are also in line with the main areas of investments highlighted in the Strategic Compass.

Workshops with Member States have shown that the EDF projects contributing to EU defence capabilities priorities have been well identified and prioritised. However, the granularity of EU defence priority-setting instruments does not necessarily match the level of detail required for EDF call topic proposals. Another complexity is that Member States are approving a growing number of activities at EU level to support more coordinated national planning. As a result, it is **sometimes complex to find clarity among the growing number of priorities in EU defence initiatives**. Member States recommended further strengthening the involvement of the EDA and EEAS/EUMS in the EDF Programme Committee to **exploit better the potential of existing and future defence priority-setting tools as inputs** to the EDF work programmes. The EDA and EEAS/EUMS recommended a greater focus on updated priority-setting tools, such as the Overarching Strategic Research Agenda, Technology Building Blocs and Priority Implementation Roadmaps. Furthermore, it appeared that Member States' representatives involved in the identification and discussion of the priority-setting tools (both at national and EU level) are sometimes different from those involved in the preparation of the EDF work programmes and multiannual indicative planning and therefore may not always support the same priorities. The Commission can raise and monitor this issue in the EDF Programme Committee, but it remains a matter of national competence.

Looking ahead to future defence initiatives, researchers and think tanks have described how the **EU's post-EDF defence initiatives are expected to be mutually reinforcing** and have the '*potential to transform defence capability cooperation in the EU'*[129]. These include the proposed EDIP which is expected to complement the defence R&D under EDF by addressing the procurement of the products and production ramp-up, continuing the logic of the emergency, short-term instruments EDIRPA and ASAP.

Synergies with PESCO projects

Permanent Structured Cooperation (PESCO) is a treaty-based framework for the participating Member States to jointly plan, develop and invest in collaborative capability development and enhance the operational readiness and contribution of armed forces. It was launched in 2017, and, beyond agreed binding commitments, it encourages cooperation on defence projects between groups of Member States. The EDF Regulation provides for a funding bonus of 10% increase of the total eligible costs for EDF projects that are also developed in the context of a PESCO project, to ensure continued enhanced

[129] Lawrenson, T. and Sabatino, E., The Impact of the European Defence Fund on Cooperation with Third-country entities. International Institute for Strategic Studies, October 2024.

cooperation between different Member States and contribute directly to EDF's objectives. **The EDF has emerged as the primary implementation tool for PESCO.** The solid level of coherence with PESCO is demonstrated by the fact that 60% of EDF development projects claimed links with PESCO projects[130]. In terms of funding, 50% of the EDF budget goes to projects that claimed and obtained the PESCO bonus, including 71% of the development part of the EDF budget.

Moreover, defence industry described how the **EDF and its precursor programmes enabled certain PESCO projects to gain momentum**, thereby strengthening the coherence within these defence frameworks.

Project box: PESCO projects supported by EDF/EDIDP

- EUMILCOM (Strategic C2 System for CSDP Missions and Operations) which was the basis for the launch of ESC2 in EDIDP 2019 and EC2 in EDF 2022. This PESCO initiative is also implemented in its cyber domain capabilities across ECYSAP (EDIDP 2019).
- CIDCC (Cyber And Informa5on Domain Coordination Center) which would require a tool like ECYSAP/ECYSAP EYE (EDIDP 2019 and EDF 2023) in order to become operational. Contacts have been established between the PESCO team and the ECYSAP consortium to align requirements and propose the tool as a possible solution

To highlight the complementarity between the EDF and PESCO, both Member States and the defence industry highlighted a number of concrete success stories of EDIDP and EDF projects that enhanced cooperation under PESCO. This includes projects that generated expertise and knowledge that was then used in PESCO projects[131] and the involvement of stakeholders from Member States that had initially not signed up to PESCO-linked EDF projects, leading to the Member States eventually joining the PESCO project itself[132].

However, stakeholders also stressed the **need to review the way the PESCO bonus is evaluated**. Until now, the assessment of the bonus required a comparison of the technical description of the project proposal with the description of the relevant PESCO project, while Member States, the EDA and the EEAS/EUMS suggested that the PESCO relevance should be confirmed by the Member States participating in or coordinating the PESCO project as they have more insight. As of 2025, the Commission will therefore request a formal confirmation of the link by the PESCO project coordinator (Member State) during the grant agreement preparation phase. The ongoing strategic review of the PESCO framework provides a further opportunity to ensure stronger links between PESCO and the EDF.

[130] 41 EDF projects (from 2021, 2022 and 2023) are related to PESCO, addressing altogether 33 of the 66 total ongoing PESCO projects, this accounts for 50% of PESCO projects.

[131] The EDIDP 2019 Sea Defence Project matured seven different roadmaps in the naval domain, which are now all part of the PESCO 4E (Essential Elements of European Escort).

[132] For example, the defence industry highlighted the PESCO project in the EUROPEAN MILITARY SPACE SURVEILLANCE AWARENESS NETWORK (EU-SSA-N), linked to INTEGRAL and SAURON EDIDP projects.

Synergies with EDA Category B projects

Background box: What are the EDA's Category B projects?

Ad hoc Category B projects are the most common EDA R&T projects, set up in a partnership between at least two EDA Member States, funded by contributions from the participating Member States and implemented by a consortium of research organisations and companies from these participating Member States.

As observer of the EDF Programme Committee, the EDA provides its views and expertise when discussing the EDF programming. The EDA can therefore inform the Member States about ongoing or planned EDA activities, including Category B projects, that should be considered to ensure synergy and complementarity with EDF R&D topics.

Both EDA and the Member States welcomed the **high degree of compatibility between EDA Category B projects and EDF projects, which ensures strong coherence**[133]**.** EDA also highlighted a double synergy: both as regards the uptake of EDA Category B projects under the EDF and the uptake of EDF topics under Category B projects.

Project box: EDIDP/EDF ensuring strong coherence with the EDA CAT B projects

ECYSAP (European Cyber Situational Awareness Platform), launched under EDIDP 2019, was the continuation of CAT B projects. The EDA CAT B projects focused on the design of the system required by the Member States. The EDIDP project has been described by the defence industry as *'fundamental to **bridge the valley of death** between operational requirements and implementation'* by launching the development of a prototype ready to be procured, which continued with the EDF23 project ECYSAP EYE.

EUDAAS (European Detect and Avoid (DAA) function based on new sensors and processing for RPAS integration into air-traffic management), launched under EDIDP 2019, was the continuation of the MIDCAS (MID air Collision Avoidance System) and MIDCAS SSP (MIDCAS Standardization Support Phase) EDA CAT-B projects, and aimed to develop and demonstrate the *detect and avoid functionality* for unmanned air vehicles. The supporting Member States were the same for all projects. EUDAAS was further able to link the development of the *sense-and-avoid* system to a platform under development in another different OCCAR-led project supported under EDIDP (EUROMALE, EDIDP 2019), which needs this functionality to be able to fly in all airspaces, **further demonstrating the interlinkages between different projects.** EUDAAS has been continued with the EDF 2023 project EUDAAS 2.

However, the defence industry highlighted that there is currently no framework or bonus system in place to encourage the uptake of EDA Category B projects under the EDF development topics, although some of them are laying the ground for projects within EDF. This is a point that could be explored in the future to further strengthen coherence.

Synergies in innovation with EDA initiatives

As a core element of the EU's Strategic Compass for Security and Defence, the Hub for EU Defence Innovation (HEDI) was established within the EDA in 2022 to promote innovative solutions for military capabilities. Following consultations with the EDA, **synergies between HEDI and EUDIS were assessed as excellent**, allowing defence

[133] In its written input, the EDA noted that 'The R&T domain has shown a high level of compatibility between EU-funded programmes and the EDA activities'.

innovators to take full advantage of EU support measures, including guidance on military end user capability requirements and opportunities to connect with European defence communities. The synergies identified between HEDI and EUDIS include:

- The Commission being an active member of the European Defence Innovation Network and present at defence innovation events (e.g. European Defence Innovation Days).
- The EDF projects resulting from the non-thematic calls to be indirectly managed by the EDA, thus supporting HEDI's initiatives in technology scouting, landscaping and assessment.
- HEDI, through its Member States network, providing themes for the hackathons organised under EUDIS.

There is scope to further strengthen the link between the solutions funded under EDF/EUDIS and the experimentation activities in HEDI.

4.1.3.2 Coherence with relevant international, regional and national priorities

This section focuses on the coherence of EDF with (i) major international actors in the defence domain (i.e. NATO), (ii) regional organisations and (iii) on a national level.

(i) Coherence with NATO activities

Coherence with NATO activities consist in ensuring that EDF topics are consistent with NATO capability priorities, where appropriate, given that Member States have a **single set of forces**. It is also about ensuring that EDF projects use the relevant **NATO standards** where applicable to ensure interoperability and cooperating in the field of defence **innovation**.

In terms of standards, NATO defines a standard as a '*document, established by consensus and approved by a recognised body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.*'[134] The Standardisation Agreement (STANAG) is a NATO standardisation document that **specifies the agreement of member nations to implement a standard.** NATO Allies have agreed numerous STANAGs over the years, covering a vast range of technical specifications for equipment and common practices. As highlighted in the EDF multiannual perspective (MAP), the EDF encourages Member States to take up existing common standards and identify areas where new standards need to be developed. To ensure greater interoperability with the Allies, Member State experts involved in the harmonisation process of the EDF calls insist on the strict requirement that **all EDF projects must comply with NATO STANAG wherever applicable**. Overall, the EDF R&D projects aim at standardised architecture and interfaces.

The Commission has estimated that at least **17 common standardised architecture and interfaces that are interoperable with NATO standards have been supported** since the launch of the EDF (e.g. in the field of communications, sensing, collaborative combat, soldier systems). Furthermore, the defence industry highlighted in consultations that not only have EDF projects been compliant with existing NATO standards, but some

[134] See here for more.

have even extended STANAGs and provided the basis for the creation of new NATO STANAGs[135], thus increasing interoperability.

In addition, during bilateral meetings with NATO, suggestions for further synergies between EDF and NATO initiatives have emerged, such as exploring the **possibility to test EDF-funded technologies and products in a NATO facility or exercise**.

Synergies between NATO DIANA[136] and EDF/EUDIS activities in the field of defence innovation have also been identified and would require further analysis to tap the full potential of both innovation frameworks and to avoid unnecessary duplication.

Project box: An EDF project extending NATO STANAGs

The EDF 2021 project LODESTAR is a research action for enhanced situational awareness through augmented reality. To illustrate how the EDF is successfully reducing fragmentation and increasing interoperability, it builds on the soldier system architecture based on the upcoming NATO STANREC 4845, on the EU GOSSRA standards and **on the extension of NATO standards** such as NATO STANAG 4677 from unit level to the soldier level (communication internally within the soldier system). This means that not only interoperability between soldiers from different forces and countries is improved but also that the components from different soldier systems (and different manufacturers) can be mixed and matched.

Project box: An EDF project being tested and used in a NATO experiment*

The EDF funded prototype equipment from the 5G COMPAD project was used in the 2024 NATO Digital Backbone Experimentation (DiBaX) co-organised by NATO's Allied Command Transformation (ACT) and the Latvian Ministry of Defence*. The Latvian Mobile Telephone (LMT) was part of the EDF co-founded 5G COMPAD project consortium and was also the contractor for the DiBaX testbed. They provided the necessary infrastructure, equipment and expertise **to successfully test and validate DiBaX experiments**. This included two 5G prototype systems developed in the framework of the EU COMPAD project.

**The experiment took place from 21 October – 01 November 2024 in Riga and explored potential applications of 5G technology for military operations, including the use of drones, fostering collaboration between NATO nations and industry. For more information: https://defence-industry.eu/natos-digital-backbone-experimentation-2024-advancing-multi-domain-operations-with-*

(ii) Coherence with regional priorities

While most regional defence networks consulted as part of the European Network of Defence-Related Regions stated that the EDF has **greatly enhanced existing cooperation at regional level,** some networks highlighted a greater need for alignment with regional initiatives and funding programmes. At the same time, as recognised by consulted stakeholders '*it would be difficult to align with all EU regions at the same time*'. For example, some associations highlighted that, as the Baltic Sea differs from the

[135] Like for example with the ESSOR project as reported by OCCAR: OCCAR - NATO ratifies and adopts ESSOR High Data Rate Waveform specification as STANAG 5651 NATO HDRWF.

[136] DIANA is the Defence Innovation Accelerator for the North Atlantic, an organisation established by NATO to find and accelerate dual-use innovation capacity across the Alliance.

Atlantic and the Mediterranean, there are obviously different interests and requirements, in particular on research.

(iii) Coherence with national priorities

Most Member States have a 'very positive' opinion on the efficiency of the EDF programming process and a 'positive' opinion on the EDF strategic planning and coherence with national priorities[137]. Member States gave a positive score **on the EDF work programmes being aligned with national defence planning processes**, including as regards national R&D priorities, capability development plans and budgetary planning.

Overall, 80% of the Member States consider the coordination with the Commission during the EDF work programme preparation (including the call harmonisation process) to be very efficient and a significant improvement from EDIDP, with one Member State highlighting the '*efficiency, transparency, sophistication and inclusiveness*' of the process. Written inputs further indicate that some R&D projects funded under the EDF and EDIDP are actively embedded in national plans to address national capability needs, highlighting the good level of coherence perceived by the Member States[138]. In addition, the Member States have highlighted that the MAP ensures better alignment between EDF programming with longer-term defence planning at national level.

However, it was more challenging to establish clear links between the categories of action and the related amount of funding expected. In particular, half of the Member States perceived the **one-year programming as too short-term** to set up the appropriate cooperation framework and prepare the national financial commitments. Multiannual programming could ease the administrative burden and provide more time for Member States to better embed national capability needs in the EDF. Nevertheless, the other half stated that one-year work programmes provided a better overview and scrutiny. To facilitate synchronised funding for cooperative programmes, the defence industries consulted have recommended that '*Member States could work towards aligning national budget cycles*'[139]. The 2023 report from the Court of Auditors on PADR[140] stated that the lack of a multiannual planning document hampered the industry and Member States planning and recommended to **consider the possibility to introduce either a binding multiannual perspective or two-year work programmes**.

To provide more predictability and transparency, since 2022 the **Commission has published an indicative multiannual perspective (MAP).** The document contains information on the expected focus of the EDF in the coming years, with the aim of facilitating and anticipating planning for industry and Member States, in particular for large capability projects that need to be supported through several work programmes. **80% of the defence industries consulted welcome the MAP as a step forward and noted that it represents a significant improvement compared to the precursor programmes**. The Commission Expert Group specifically highlighted how the MAP

[137] Workshops with Member States and Norway in the context of the EDF interim evaluation. Further information present in the synopsis report.
[138] A few of these project examples were the iMUGs or FAMOUS and FAMOUS II projects.
[139] Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024.
[140] European Court of Auditors, Special Report, 26/04/2023.

gives a more concrete overview of what is currently under way. The Member States also appreciated positively the MAP[141].

To provide further clarity on the EDF's outcomes, the **MAP includes 'Main Expected Outcomes'** from EDF projects to be launched in the current MFF. However, the defence industries consulted highlighted a **lack of clarity over Members States' plans after the EDF programming period**, including on procurement. Some instead recommended the adoption of a multiannual perspective that reflects not just the EDF's programming period but also the complete development cycle of the capabilities, with a more detailed long-term agenda identifying the topics to be funded[142]. This would allow for better planning and ensure that the R&D supported by the EDF is effectively used by the Member States' armed forces.

A multiannual work programme remains the majority recommendation by defence industry: this however requires an amendment to the EDF Regulation. In the meantime, the Commission provides as many details as possible in the MAP and aims to increase its communication channels with the defence industry and with Member States.

4.1.3.3 Coherence with civil R&D programmes

From a thematic perspective, the following EDF categories of action present strong opportunities for synergies with civil R&D programmes: cyber and digital transformation[143], space, medical response, CBRN & human factors, energy resilience and environmental transition, information superiority, disruptive technologies. In addition, technologies developed under the EDF offer dual-use potential, in both the thematic and horizontal categories of action.

(a) Synergies with other EU programmes[144]

EU programmes with strong potential for synergies include:

[141] Workshops undertaken with Member States and Norway in the context of the EDF interim evaluation with Member States responding to the question 'how would you assess the overall added value and clarity of the MAP?' (overall average score 7/10). Further information present in the synopsis report-noting that to preserve confidentiality quotes have been anonymised.

[142] The development of a common strategic long-term planning between Member States and the European Commission such as the Aviation Strategy for Europe (2019) was recommended.

[143] For example the EDF project BATTLEPAD will improve security and reliability of end user devices such as phone or tablets and benefit both security and defence sectors

[144] Consultations with EDF beneficiaries (workshop and survey with large defence industry, SMEs and mid-caps, RTOs) and with think tanks. Further details in the synopsis report.

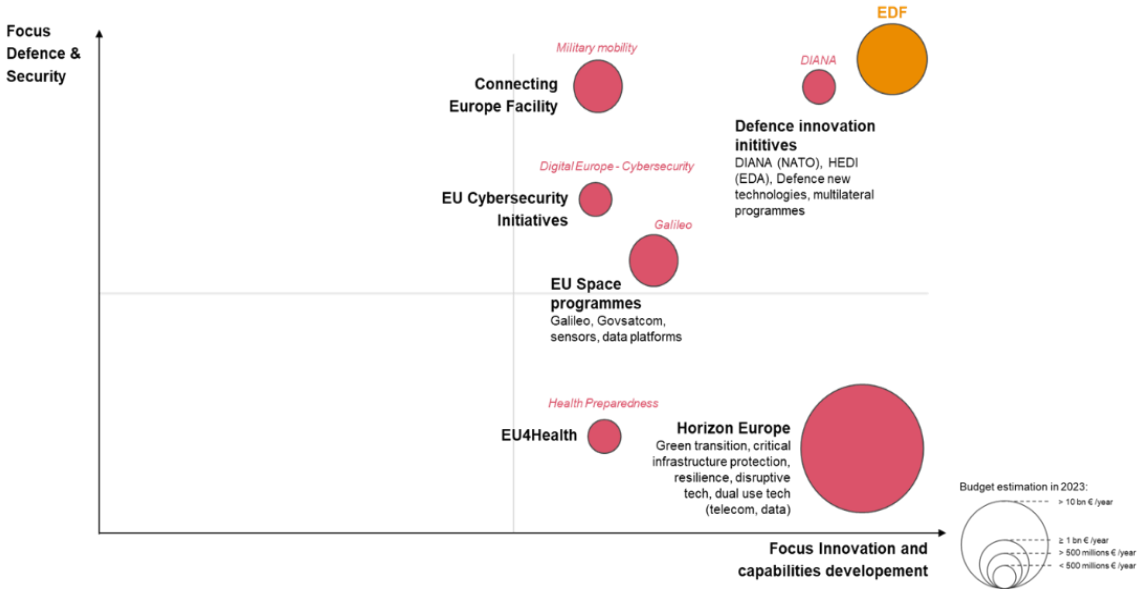

Figure 10 - EU CIVIL PROGRAMMES WITH PINPOINTED SYNERGIES ACCORDING TO CONSULTED DEFENCE INDUSTRY AND THINK TANKS. Source: External Study performed by PwC.

The following synergies between areas falling under the EDF categories of actions and other related EU programmes have been identified during the stakeholders' consultation, as shown in Table 11.

Synergies opportunities per EDF's category of action	HORIZON EUROPE	SPACE PROGRAMMES	DIGITAL EUROPE
• Medical response, CBRN & Human factors	0 1 2 3	0 1 2 3	0 1 2 3
• Information superiority	0 1 2 3	0 1 2 3	0 1 2 3
• Sensor	0 1 2 3	0 1 2 3	0 1 2 3
• Cyber	0 1 2 3	0 1 2 3	0 1 2 3
• Space	0 1 2 3	0 1 2 3	0 1 2 3
• Digital transformation	0 1 2 3	0 1 2 3	0 1 2 3
• Energy resilience & environmental transition	0 1 2 3	0 1 2 3	0 1 2 3
• Materials and components	0 1 2 3	0 1 2 3	0 1 2 3
• Air combat	0 1 2 3	0 1 2 3	0 1 2 3
• Air and Missile defence	0 1 2 3	0 1 2 3	0 1 2 3
• Ground combat	0 1 2 3	0 1 2 3	0 1 2 3
• Force protection and mobility	0 1 2 3	0 1 2 3	0 1 2 3
• Naval combat	0 1 2 3	0 1 2 3	0 1 2 3
• Underwater warfare	0 1 2 3	0 1 2 3	0 1 2 3
• Simulation and training	0 1 2 3	0 1 2 3	0 1 2 3
• Disruptive technologies	0 1 2 3	0 1 2 3	0 1 2 3
• Innovative defence technologies	0 1 2 3	0 1 2 3	0 1 2 3

Table 11 – LEVEL OF POTENTIAL SYNERGIES RATED FROM 0 (VERY LOW POTENTIAL) TO 3 (HIGH POTENTIAL). Source: External Study performed by PwC.

EUDIS spin-in calls as a catalyst for synergies with other EU programmes

One of the new EUDIS measures since 2023 are the spin-in calls for proposals. These calls leverage technologies with dual-use potential from civil EU-funded R&D, enabling their adaptation to defence applications. So far, including the 2025 EDF work programme, the EDF spin-in calls have addressed the areas of cyber, energy and power systems, high-performance materials, electronic components, space and autonomous systems. Four EDF projects have been launched following these calls for proposals: TRITON, CALIPSO, IMMUNE and ADMIRABLE, allowing the companies involved,

previously active in the civil market, to extend their activities to the defence sector. Conversely, EDF project outcomes may generate spill-over effects in other sectors. The total amount of EDF spin-in calls for proposals with a clear reference to synergies with EU civilian programmes amounts to EUR 210 million up to 2025. To ensure further complementarity of the Commission's activities under respective funding programmes, cross briefings of the EDF Programme Committee have been organised[145]. This improved coordination and raised awareness of possible future synergies.

Synergies with the EU space programme

The EDF has funded projects which ensure complementarity with the EU space programme, in particular the Global Navigation Satellite System (GNSS), the Governmental Satellite Communication (GOVSATCOM), Space Surveillance and Tracking Support (SST) and Copernicus. The EDF projects in the space category of action **ensure 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,** for example:

- **Space domain awareness**: INTEGRAL and SAURON (EDIDP 2020) and its follow-up EMISSARY (EDF 2023) aim to develop a European military capability for space situational awareness and for protection of space assets against evolving threats, and will strengthen the EU SST component of the EU space programme.
- **GNSS Positioning, Navigation and Timing:** the GEODE (EDIDP 2019 and NAVGUARD (EDF 2021) will develop Galileo PRS receivers for integration in defence equipment as well as capabilities to detect and geolocate the sources of malicious activities in GNSS frequency bands, thus contributing to the resilience of the Galileo system and its uptake by the defence community.

Synergies with Horizon Europe

While the EDF is strictly focused on defence needs, Horizon Europe is exclusively focused on civil applications. Nonetheless, R&D projects' results may develop into technologies with a dual-use potential, either immediately or with some adaptation, even if they were originally intended and funded for purely civil or defence applications. Civil-defence synergies can be exploited for technologies with dual-use potential, such as for example cyber, artificial intelligence, and space. More than 20 Horizon Europe projects have been found to have strong synergies with defence[146]. 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 results for civil applications. The interconnection between both programmes is also evident in the participation in projects of many of the same stakeholders, which can facilitate the transfer of knowledge and technologies between the civil and defence sectors. Further actions could be explored to support civil-defence synergies, in particular for technologies with dual-use potential.

[145] Different services managing programmes with synergies' potential have been invited to attend the EDF Programme Committees and vice versa.

[146] As an example the MMinE-SwEEPER project funded in 2023 will advance knowledge, capability and capacity in Europe for dealing with marine munition in the non-military aspect of UXO-clearance. Other projects relate to Clusters 3 – 'Civil Security for Society', 4 – 'Digital, Industry and Space' and 5 – 'Climate, Energy and Mobility'.

Synergies with Digital Europe

Synergies with Digital Europe are particularly visible in the cyber domain to avoid unnecessary duplication of efforts and to enable an efficient uptake of results. The cyber technology roadmap prepared by the Commission, assisted by the EDA and in consultation with industry and Member States, will continuously monitor synergies and provide inspiration, where relevant, without affecting the decisions of the EDF Programme Committee.

(b) Synergies with wider EU policy initiatives

This section examines the coherence of EDF with wider policy initiatives related to specific EDF categories of action, as well as in the field of critical technologies. A dedicated section focuses on climate actions, as required by the EDF Regulation.

EDF contribution to 'A Europe fit for digital age'

The EDF supports **31 R&D projects in the Cyber Defence and Digital Transformation categories with a cumulated funding of EUR 470 million**. The priorities of the EDF Cyber category of action and the topics included in EDF work programmes address identified capability gaps and are consistent with the CDP Priorities ('Enabling Capabilities for Cyber Responsive Operations'). This contributes to the objective of ensuring full-spectrum cyber defence capabilities and a continued coherence with emerging strategies and policies in the cyber domain. Certain EDF projects build on earlier EDIDP projects such as the EDF projects AInception[147] and EU-GUARDIAN[148] which address improved cyber operations capabilities for response and incident management. EDF projects support exploiting 5G technologies, improving defence forces' communication capabilities, and developing classified operational clouds and technologies for a software-defined secure radio.

EDF contributing to the STEP objectives

Another key EU initiative is the Strategic Technologies for Europe Platform (STEP) which supports the European industry and boost investment in critical technologies in Europe. The EDF is one of the instruments to underpin STEP. At least **EUR 375 million will be earmarked in each EDF work programme from 2024 onwards** (i.e. at least EUR 1.5 billion in total as envisaged in the STEP Regulation) **for EDF call topics** contributing to the three STEP investment areas: digital technologies and deep-tech innovation, clean and resource-efficient technologies and biotechnologies. The 2024 EDF work programme identified 15 actions contributing to STEP objectives with an indicative budget of EUR 382 million. This envelope will support future EDF projects contributing to the development of defence applications within the scope of STEP, thereby ensuring coherence between both initiatives.

EDF contributing to the Green Deal and climate actions

The EDF supports 9 projects linked to the EDF category of actions 'Energy resilience and environmental transition' and further EDF projects have been including considerations on the sustainability of the defence systems and activities developed[149]. As

[147] Further information on the project AInception (AI Framework for Improving Cyber Defence Operations).

[148] Further information on the project EU-GUARDIAN (European framework and proofs-of-concept for the intelliGent aUtomAtion of cybeR Defence Incident mAnagemeNt).

[149] This includes calls on Innovative propulsion systems for Defence applications (2023) or Energy-independent and energy-efficient systems for military camps (2024).

stated in the EDF Regulation[150], **the EDF aims to contribute to the mainstreaming of climate actions and does so by allocating around 4% of the overall EDF budget up to 2024** (i.e. around EUR 180 million) to actions linked to the relevant EDF category of actions. This budget share is likely to increase in the future as follow-up actions targeting higher TRLs, therefore requiring more budget, are already envisaged. These include alternative propulsion systems and fuels, sustainable energy production and storage for military deployed camps.

In addition, there are projects covered by several other EDF categories of actions that **contribute indirectly to climate transition and energy issues**, including:

- Projects closely considering the impact of the use of military products on the environment, such as the project Hydrogen Battlefield Reconnaissance and Intelligence Drone (HYBRID) which aims to develop drones with reduced impact on greenhouse emissions and project Mine Risk Clearance for Europe (MIRICLE) which considers the impact of use of drones on the environment.
- Under the underwater warfare category, projects considering underwater and environmental aspects such as new techniques to avoid detonation of sea bottom and drifting mines which disturb the maritime environment (wildlife and fauna).

Project box: Projects demonstrating cross-sectoral links

- EDF project COUNTERACT to establish a network to develop medical countermeasures against CBRN threats such as terror plots;
- EDIDP project VERTIgO to virtualise training of CBRN military and civilian respondents;
- EDIDP project CBRN-RSS to enable reconnaissance, surveillance and incident management against CBRN agents;
- EDF project FACT to create a common toolbox for improved resilience by developing an advanced cyber physical test range capability;
- EDIDP project ECYSAP and EDF project ECYSAP EYE to provide a European operational platform on cyber situational awareness for security and defence;
- PADR project PYTHIA to map major innovations in civil and defence technology.

(c) Obstacles to further synergies

The main challenges to further developing synergies between the EDF and other EU programmes depend on the ability, on the one hand, to **share technology or capability roadmaps and implement them in a timely and complementary manner** and, on the other hand, to cope with **different legal frameworks** with different provisions in terms of the form of funding (e.g. grants vs procurement), eligibility conditions, IPRs or security requirements.

4.2. How did the EU intervention make a difference and to whom?

This section assesses the value of EDF actions in addition to what could result from interventions at national and/or regional level only.

The evaluation (see 'Effectiveness' assessment) clearly showed that the EDF is effectively incentivising EU Member States and Norway to collaborate in **developing the next generation of defence technologies, products and capabilities, many of which might be difficult or even impossible to achieve by a single country**. In a period of high and increasing defence R&D costs, the EDF plays a critical role as a new source of

[150] Recitals 60 and 61 of Regulation (EU) 2021/697.

R&D funding and by providing a **unique collaboration framework**. Overall, the Fund provides positive structural impact going beyond the EDF budget itself.

Member States' representatives confirmed that the EDF allows them to address defence needs that could be prohibitively expensive to develop, with 75% stating that the **EDF ranges from 'important to extremely important' in having implemented projects** that could not have been achieved purely at national/regional level[151]. Furthermore, Member States highlighted how the EDF provides **unique opportunities also for smaller Member States and for countries with a limited defence industry** to have their national industry contribute to the development of major EU defence capabilities.

Considering 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 hypersonic missile defence projects HYDEF and HYDIS^2 face both high costs and complex technical challenges that are difficult for any Member State to manage independently. Other projects stressed by stakeholders include ODIN'S EYE (capabilities that have by design an EU-wide dimension), MIRICLE, HGV and ENGRT.

Project box: What would have happened without the EDF project ODIN'S EYE?

The EDF project ODIN's EYE II aims to develop a European space-based missile early warning architecture. A similar example to project can be found in the **US and its development of The Next-Generation Overhead Persistent Infrared** (Next-Gen OPIR) programme. With an estimated cost of USD 14 billion, the project is one of the most expensive satellite procurement efforts ever. As demonstrated from the programme, the cost and time needed to bring such technology to market uptake and production will likely be over a decade and cost billions of euro. No Member State has the financial resources or technology knowhow to take on this type of defence R&D alone. The role of the EDF to facilitate and fund explorative defence R&D research is therefore critical to not only for boosting the EDTIB but European defence as a whole. Without the EDF, it is **unlikely that large-scale defence R&D projects such as ODIN's EYE II would be initiated by individual EU countries or even a coalition of states.**

The programme's additionality (i.e. not displacing or replacing national funding) is very strong (EDF funding was categorised as ranging from 'important to essential' by 80% of consulted beneficiaries).

Furthermore, many Member States highlighted that they are increasingly taking into consideration the EDF programming cycle in national defence R&D planning processes to optimise public defence spending.

The **EDF's impact on defence R&D has been described unanimously by defence industry as vital,** and participation in EDF projects increasingly seen to serve as a 'European label', a distinguishing factor likely to grow in importance over the years. The Commission Expert Group specifically noted that *'Projects branded as 'European' gain traction and resources that might otherwise have remained stagnant.'*[152] EDF's added

[151] Workshops undertaken with Member States and Norway in the context of the EDF interim evaluation. The question was 'Do you consider that the EDF contributed to realising projects that could not have been achieved purely at a national/regional level due to high financial/risk factors?', with an average score of 8/10.

[152] Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024.

value is further strengthened as R&D funding benefits **both small and large actors** which have complementary levels of knowledge and expertise in defence industry.

The importance of EDF for company R&D activities is displayed below:

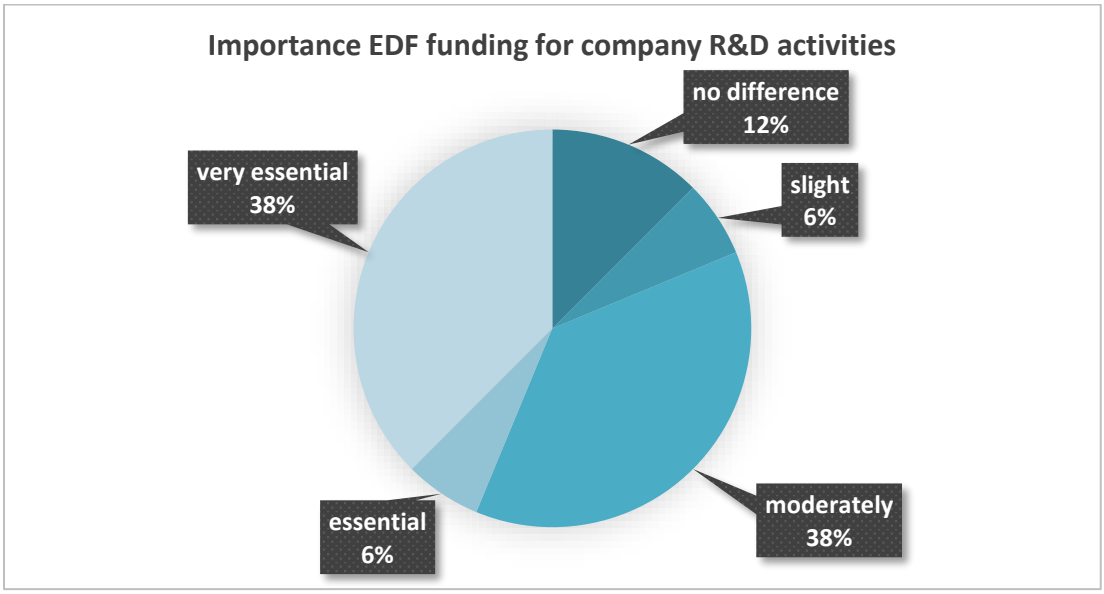

Figure 11- RESPONSES BY BENEFICIARIES ON HOW ESSENTIAL EDF FUNDING WAS IN SUPPORTING THEIR ORGANISATION'S R&D ACTIVITIES[153]. Source: DG DEFIS

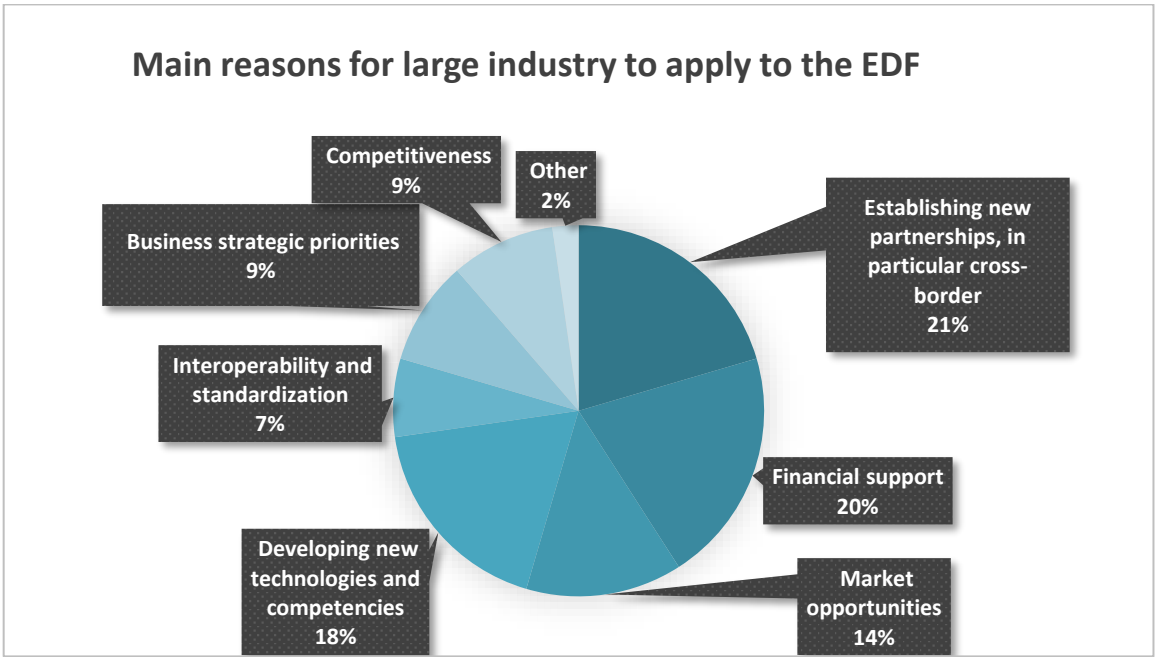

Figure 12 – LARGE INDUSTRY RESPONSES TO QUESTION: 'What are the main reasons for large defence industry to apply to the EDF?'. Source: DG DEFIS

[153] Consultations with EDF beneficiaries (workshop and survey with large defence industry).

Project box: A key capability project that would not have otherwise taken place

The EDIDP2020 project SEANICE explores new concepts in anti-submarine warfare that national navies have not yet tested. The project was described as not being able to have been carried out purely at national level because the magnitude of budget needed.

The EDF has been described by SMEs and mid-caps as very relevant and attractive, as demonstrated by their increasing interest in applying under EDF calls. Throughout consultations with SMEs and mid-caps, the EDF has been described as successfully supporting **industry in breaking down a technological problem into smaller steps**, to identify the roles and interfaces needed for a successful cooperation and implementation, and to add in specific expertise in fields not covered by traditional partners.

Stakeholder box: What are the main reasons for SMEs to apply to the EDF?

For SMEs and smaller mid-caps, while general drivers apply to stimulate the interest for the EDF, additional factors to stimulate interest include:

- the opportunity for networking and creating ties with new partners, including in particular big industry, which they would not have known otherwise;
- the bonus system for SMEs;
- the availability of measures incentivising SMEs participation, such as the non-thematic calls which are best suited for an innovation focus, as well as the EUDIS measures overall.

Academic stakeholders have highlighted how the EDF provides **strong support to academia by promoting defence-related research**. The EDF is gaining resonance in communities that previously showed limited interest in defence. The EDF and similar initiatives were not widely known among academic circles in the past, but interest is now increasing. This growing attention is a notable achievement for mobilising the untaped potential within the academic world[154].

4.3. Is the intervention still relevant?

This section describes whether the EDF is still relevant today and how well it matches the current needs and problems. It also considers how the Fund has adapted to emerging and changing priorities.

4.3.1 Responding to Europe's needs: an instrument more relevant than ever

The EDF has been conceived in a different security context. The return of high-intensity warfare in Europe, conflicts in the Middle East, Caucasus, Africa etc., coupled with fast technological changes, has led to rising security threats since EDF's adoption. In this new geopolitical context, the **EDF original rationale for intervention** and objectives to strengthen EU's defence R&D and cross-border cooperation not only remain relevant but have become **more critical than ever**, an opinion shared by all consulted stakeholders.

A strong EU defence industry is an essential prerequisite to achieve defence readiness. As stated by the European Defence Industrial Strategy: *'... the EDTIB is competitive at*

[154] Further details in the Position paper on the EDF by the Commission Expert Group on Defence published on 10 July 2024. As an example, research projects like CROWN, ARTURO, TYRESIAS and EPICURE have brought together industrial partners and RTOs to develop cutting-edge technologies that would otherwise lack sufficient innovation potential and national funding.

global level, with an estimated annual turnover of EUR 70 billion and strong export volumes (more than EUR 28 billion in 2021). Overall, the EDTIB is estimated to employ around 500 000 people… Notwithstanding its overall competitiveness, the EDTIB's ability to unleash its full potential is undermined by years of underinvestment, despite the progress made over the last years'. In this context, the challenges identified when conceiving the EDF have only gained in importance:

- It is widely accepted that only a few EU Member States can afford to develop the most complex systems by themselves, and no country can do so across all domains.
- There is little evidence that EU countries are in a position to increase their R&D budgets sufficiently to be on an equal footing with other defence leading nations[155].
- At the same time, public support for an increased defence cooperation at EU level is increasing, with 78% of Europeans in favour of more cooperation[156].

The increasing relevance of the EDF is also confirmed by its **growing attractiveness**. There is a constant increase in proposals submitted under the EDF calls for proposals. Starting in 2021 with 140 proposals, the 2024 calls attracted nearly 300 proposals, an increase of 25% in addition to the substantial increase of 78% in 2023.

In terms of the relevance of the priorities established under the EDF work programmes, the Fund has been able to make **programming choices that are considering both existing and emerging military needs of the Member States**. As the EDF is expected to help fill capability gaps, consultations with the defence industry highlighted many projects addressing agreed capability gaps in Europe. At least 60% of the EDF budget spent so far supports the development of key high-end capabilities, further underlining the coherence of the EDF with EU-level priorities. In addition, the vast majority the defence industries consulted assessed the EDF as coherent or mostly complementary with other national defence initiatives.

The EDF also demonstrated its relevance in its ability to **accommodate both large-scale and small-scale actions**. While some Member States noted that EDF should focus on a more limited number of large-scale projects, others noted that supporting smaller-scale actions should also be kept promoting wider inclusiveness. However, consulted large industry pointed out that the resulting balance led to funding a high number of projects thus affecting the ability of the EDF to fund the development of major next-generation capabilities in parallel. In this context, defence industry and most Member States underlined the **importance of increasing the EDF budget to maintain a suitable and relevant balance in the long run**[157].

4.3.2 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-

[155] EDA defence data 2023 show that the EU-27 have increased their R&D spending by 15% since 2021, to amount to EUR 10.7 billion. As a comparison, the US spends more than 10 times as much as the EU on defence R&D.

[156] https://europa.eu/eurobarometer/surveys/detail/3215 (Autumn 2024)

[157] The Commission Expert Group estimated that based on political commitments and benchmarks established by Member States in the context of NATO (2% of GDP expended in defence and 20% of it in R&D), PESCO and the EDA, and even including the EDF budget, the collective defence R&D investment expenditure in the EU presents a deficit of EUR 3.1 billion in 2022. They recommended an overall increase of the defence R&D investment expenditure of EUR 9.4 billion per year, which should be covered by an increase in the investment of the Member States, allowing also for an increase in the annual budget of EDF for the period 2028-34.

existing trends. This is the case for example for the development and use of unmanned platforms, air and missile defence, in the space and cyber domain. The EDF work programmes **successfully address these emerging and changing priorities**, for example:

- The priorities addressed by the 'Air and missile defence' category of action have evolved in response to the growing importance of this area, ranging from interception of swarms of small drones (counter-unmanned aircraft system capabilities) to ballistic missiles (endo-atmospheric interceptor) and hypersonic glide vehicles. The associated cumulative budget increased from EUR 100 million in 2021 to EUR 301 million in 2024, strengthening air and missile defence in Europe.
- In the 'Ground combat' category, the war in Ukraine confirmed the importance of high-precision weaponry leading to the allocating of EUR 30 million to intelligent weaponry and ammunition systems in the 2024 EDF work programme.
- Under 'Force protection and mobility', the 2023 EDF work programme addressed the *strategic air transportation of outsized cargo* to address a key capability gap further exaggerated by the unavailability of the Antonov transport fleet.

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

Following the Russian aggression in Ukraine, the EDF has proven to be a relevant instrument also to **foster the progressive integration of the Ukrainian defence industry** in the EDTIB and introduced mechanisms to enable the participation of Ukrainian entities into specific actions. While under the EDF Regulation Ukrainian entities can only participate in projects as associated partners (thereby not receiving EDF funding) or as providers of goods, works or services needed to carry out EDF projects (though the purchase cannot constitute a core action task), the following actions have been taken to adapt the EDF to the new reality and involve Ukrainian entities.

- Third parties that can benefit from cascade funding (possibility offered in specific EDF call topics) have been extended to Ukrainian entities.
- EUDIS hackathons and mentoring programme (participants and mentors) are open to Ukrainian participation.
- In the EUDIS matchmaking, entities can be established or subject to control by Ukraine or Ukrainian entities.

5. WHAT ARE THE CONCLUSIONS AND LESSONS LEARNED?

The results of this interim evaluation will help improve the implementation of the EDF in the remaining years and inform the design of the future MFF defence R&D programme. This section summarises the key findings and outlines issues for future consideration.

5.1 Conclusions

The EDF has successfully brought together defence R&D under a single, long-term programme, contributing to a **coherent EU defence R&D landscape**. While EDF projects have not yet had the time to produce the full set of outcomes, results and impacts, it is already evident that the Fund led to **more effective support throughout the entire capability development cycle and has fostered strong cross-border cooperation, leading to efficiency gains**.

As the programme evolves, the Commission has continuously integrated lessons learned. This has led to a **continuous simplification** of the programme's implementation, with stakeholders highlighting the efficiency of the instrument, while recommending an increased budget and specific improvements for the future. Furthermore, macroeconomic projections suggest that the EU's economic growth and supply chains stand to gain significantly from the EDF, with anticipated benefits for GDP, employment and an **overall positive impact on the competitiveness of the EDTIB.**

The EDF has effectively achieved its short-term success indicators. It has stimulated increased defence R&D across the EU, with stakeholders specifically noting the added value of EDF-funded projects, which would not have materialised without EU intervention. The programme has attracted the best defence R&D players, as well as many non-traditional stakeholders. It has been successful in finding the right balance between long-term, complex capabilities projects and opportunities for defence innovation by smaller players, including non-traditional players from across Europe. Given the early stage of EDF implementation, more evidence about its results and longer-term impacts will be available in its final evaluation due by 31 December 2031.

With an average annual budget of around EUR 1.1 billion, the **EDF is on track to achieve its medium- and longer-term objectives**. It is expected to produce **large-scale impact**, with **over 50 prototypes for next-generation capabilities in all military domains** – air, ground, naval, space, cyber – expected to be developed with EDF support. In addition, many EDF projects pave the way for the development of defence technologies and products for which Europe is currently fully dependent on third countries. A set of products or technologies developed under the EDF and its precursor programmes are reaching the procurement stage or have shown potential for market uptake. The first project outcomes from precursor programmes (and some from the EDF) have **begun entering the EU Member States' armed forces providing critical capabilities**, and some are already used successfully by the Ukrainian armed forces. The fund has also **successfully adapted by addressing new and emerging priorities**.

Overall, the programme is being implemented effectively and efficiently. Compared to the EDF precursor programmes, stakeholders noted significant **improvements and efficient functioning** of the programme. The EDF has been successful in strengthening cross-border collaboration, **attracting an increasing number of applicants and beneficiaries** by supporting a broad array of capabilities, fostering innovation and considering the specific needs of SMEs and mid-caps. Simplified processes compared to the precursor programmes and strong communication and outreach to stakeholders have been particularly well-received. However, there is still room for improvement, particularly in ensuring co-financing and bigger certainty in the procurement of end products.

The majority of the Member States' representatives consulted regard the priority-setting instruments for EDF programming as highly **relevant.** The EDF annual work programmes, which are prepared with the Member States, are highly **coherent** with other priority-setting initiatives at both EU, national and regional level. The use of NATO standards in EDF projects **promotes standardisation and interoperability**, with beneficiaries already pointing to a 'snowball effect'. Although not all initiatives under EUDIS can be fully assessed yet, the defence industry and research organisations have shown strong interest, including in the spin-in calls, highlighting cross-sectoral links.

The EDF's **added value** in developing defence R&D projects that could not have been undertaken at national level is universally accepted. The assessment confirmed that the EDF EU added value is very high compared to what could be achieved at national or

regional level as many of the actions supported exceed the financial and technical capacities of a single Member State.

The evaluation has shown that the **relevance of the programme** is unquestioned and that its original rationale for intervention and objectives remain valid and more relevant than ever. The Fund has proven to be flexible in adapting to new emerging needs.

5.2 Lessons learned and areas for improvement

Significant improvements have already been made to the EDF in the light of lessons learned from the PADR and the EDIDP, continuous consultation with stakeholders, and evolving EU policy objectives. **The ability of the EDF to respond and integrate improvements over time and to adapt to emerging new challenges and priorities** has proven to be one of its key strengths.

While the EDF has been successful in meeting its objectives, there are areas for improvement **that need to be further addressed** in the short and longer term, both through **non-legislative adjustments** and as a basis for preparing the **next MFF defence industry programme(s).**

Effectiveness:

- Need for further reflections on how **to provide appropriate funding for complex and costly capabilities**, while ensuring the right balance in supporting **smaller and innovative projects and maintaining the inclusivity of beneficiaries.**
- Need for reflection on **how to better ensure the continuity of effort** from lower to high TRL levels/prototyping. Going further, ways to ensure continuity between R&D, industrialisation, ramp-up and procurement (as pursued by EDIP) should be explored for the future, including e.g. concepts of overarching project roadmaps to optimise timely project outcomes throughout all these phases.
- **Need for stronger support for defence innovation** and reflections on how to **ensure faster and leaner funding cycles to integrate innovative defence solutions**, also in the context of the next MFF programme.
- Need to build further on the outreach and awareness activities, while **strengthening the focus on newcomers** in the defence sector and research organisations.
- Need to closely monitor the EDIP negotiations and, in light of the outcome, ensure the **industrialisation, production and (common) acquisition of EDF project results**.

Efficiency:

- Scope for further focus sessions on the **difficulties reported by the defence industry in materialising the required co-financing** for development actions with Member States and Norway.
- Need for reflection on **how to use the full potential of the Transfers Directive** (also in light of its interim evaluation) as the facilitation of transfers of defence items is an important factor for the final stages of the industrial life cycle.
- Scope to adopt further support measures and best practices in order to **facilitate information exchange with applicants and beneficiaries on security clearance**, personnel security clearance and the handling of classified information (in particular for SMEs and research organisations).
- **Assess how to carry on simplifying EDF implementation and reduce further administrative burden.** Reflect on the use of the effectiveness of the bonus system,

the complexity of the award criteria, as well as how to mitigate the possibility of the defence industry forming unmanageable large consortia.

- Scope to intensify efforts to ensure access to finance for the defence sector.
- Continuously improve EDF data monitoring and tracking arrangements, including in view of the data required for the final evaluation of the programme pursuant to Article 29 (3) of the EDF Regulation.

Coherence:

- Scope to intensify further the cooperation **with EDA and EEAS/EUMS** in order to use the full potential of defence tools as input for defining EDF work programmes.
- Need to assess the possibilities for **multiannual programming** in the future, and in the meantime provide **detailed information in the MAP** and further discuss and explain it via outreach activities.
- Together with the EDA and EEAS/EUMS, need to monitor the changes in 2025 which would aim to **better assess the link with PESCO projects**.
- **Need for continued assessment of how to further strengthen synergies on the civilian side** with defence and other policies and strategic sectors (e.g. Horizon Europe, EU space programme, EU secure connectivity programme, Digital Europe programme).

The EDF's added value and relevance:

- Given the deteriorating security situation in the world and the significant increase in demand by both Member States and industry, the need to **set an appropriate budget for future successor programme(s)** under the next MFF.
- Need to reflect on **how to strengthen the involvement of Ukraine** in the development and funding of new R&D, as well as the possible involvement of Ukraine-based legal entities in future defence R&D.

Programme monitoring and reporting arrangements:

- Need for further reflections, including through closer collaboration with the EDA and Eurostat, on **how best to capture quantitatively over time signals on the effects of the programme for the beneficiaries** ahead of the final evaluation of the EDF given data availability and confidentiality issues, the long-term nature of the investments and the lack of comparable programmes for benchmarking. This must be balanced with data quality and simplification objectives, avoiding overburdening the beneficiaries thanks to a better use of IT tools for data collection and streamlining data reporting needs based on the programme objectives.

Annexes to the Interim Evaluation of the European Defence Fund

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ANNEX I. PROCEDURAL INFORMATION

The *interim* evaluation of the European Defence Fund (Decide reference: PLAN/2023/1621) has been developed under the lead of DG DEFIS, under the guidance of a dedicated interservice group (ISG) established in October 2023 and composed of representatives of 16 Commission DGs and services (BUDG, CNECT, COMP, ECFIN, ENER, ENV, GROW, HERA, HOME, JRC, MARE, MOVE, SANTE, SG, SJ, TRADE) and the EEAS/EUMS.

The ISG met in November 2023 to discuss the expectations of participating services, the working methods of the ISG and the draft call for evidence. The call for evidence was then published in January 2024 for four weeks and received 30 individual replies (presented in Annex 5), thereby officially kick-starting the stakeholder consultation process. A second ISG meeting was held in March 2024 focused on the outcomes of the closed "Call for Evidence", discussed the draft Stakeholder Consultation Strategy and the draft Terms of Reference for a contractor. The ISG met again in July 2024 for a third meeting where DEFIS provided an update to the Group regarding timelines on the interim evaluation process, the progress on the targeted stakeholder consultations and on the support activities conducted by the external contractor. During the fourth ISG meeting in October 2024, a consultative discussion was held with its members to enable an exchange of views on EDF synergies with other Commission programmes and defence-related initiatives. During the fifth meeting, the draft interim evaluation (SWD) was presented and discussed with the Group before submission to the Regulatory Scrutiny Board (RSB).

Further information detailing the evidence used in the evaluation (including sources and data quality as well as external expertise), as well as information about the stakeholders' involvement, is available in Annex II.

This evaluation has been selected for scrutiny by the Commission Regulatory Scrutiny Board (RSB). The outcome of the scrutiny was the issuance of a positive opinion with reservations, following a dedicated meeting on 30 April 2025. The table demonstrating how RSB comments were addressed is present below.

Points to improve signalled by Regulatory Scrutiny Board	Changes to the Staff Working Document
The report should review the programme's intervention logic to ensure the European Defence Fund's (EDF) specific objectives are sufficiently operationalised to be precise enough and measurable. The report should reconstruct the intervention logic to include causal links between its elements, allowing for a better assessment of the programme's progress towards success, thereby preparing the ground for the final evaluation. Against this backdrop, the report should discuss the validity of the indicators set out in the Regulation's Annex and the programme's monitoring and evaluation framework to ensure they are fit for future monitoring and capable of providing meaningful results at the time of the final evaluation. This includes assessing the framework's ability to	The relevant section has been updated, incl. further information provided on the data limitations, the intervention logic chart is now accompanied by a narrative spelling out its elements and causal links (Section 2.1). Additional information on EU defence industrial sector at the moment of EDF set-up added in Section 2.1. More details added on the monitoring and evaluation framework's role in support of this evaluation (Section 3.1, before the data table) Lessons learned section includes more details regarding the need of evidence for future evaluations, incl. for more measurable indicators, data needs for analyses etc. (section Conclusions and Lessons learned)

Points to improve signalled by Regulatory Scrutiny Board	Changes to the Staff Working Document
track the programme's progress and propose possible adjustments. The findings on evidence gaps on monitoring and reporting arrangements should be reflected in the conclusions section. In the lessons learned section of the report an analysis should be included whether and how the indicators in the Regulations' Annex and the monitoring and evaluation framework should be amended.	
The report should better link the findings with the corresponding evidence and analytical methods. Given its wide reliance on the stakeholder consultations, the report should transparently present views from different groups and data from all affected parties, including non-participants to the programme whose feedback can provide valuable insights into the programming and implementation shortcomings	The relevant section has been updated (Section 2.1). Additional information added on reasons for non-participation of non-beneficiaries (section Effectiveness)
Further, the report should review the parts of the effectiveness and efficiency analysis (and corresponding conclusions) that are based inappropriately on the macroeconomic projections of the Rhomolo model, which – being an ex-ante methodology – is conceptually misplaced for demonstrating benefits in retrospective evaluations. The unsuitability of this model is further accentuated by the numerous specificities of the defence sector which are not adequately considered by the model. Instead, the report at this stage should establish effectiveness and efficiency using other methods, complementing the output indicators with a comparison with the preprogramme situation in the defence industry and the national approach to R&D in the sector, benchmarking against earlier projects or approaches and/or explaining the limitations of the possible points of comparison. The report should assess key implementing modalities of the programme such as allocation of bonus points in the project selection phase. Anecdotal evidence and flagship achievements, e.g. around the prototypes envisaged and under development within the pipeline of ongoing projects should be used to a greater extent to build the case as potential indicators of the future programme's success. The report should also better present the nature and results of the increased cooperation and multinational partnerships in innovation, discussing value added of reduced fragmentation and increased convergence and impacts on competitiveness of the sector.	The Introduction section and the Efficiency section of the draft SWD, as well as the accompanying Commission report have been updated to significantly reduce the reliance and references to the outcome of the JRC study (based on the Rhomolo model) on the expected macro-economic benefits of the EDF. References added to the important limitations of the model at the interim evaluation stage.
Regarding efficiency, the report should consider the costs associated with reporting and project coordination accruing to the stakeholders. It should	Further clarification added on the lack of complete data on costs associated with EDF engagement

Points to improve signalled by Regulatory Scrutiny Board	Changes to the Staff Working Document
discuss the lead time of its programming phases, accentuating the adequacy of the framework and identifying justified potential for improving efficiency. The report should assess to what extent the programme allows for sufficient agility and reactivity in the evolving dynamic geopolitical context with quickly emerging needs, notably through the lens of the Russian war of aggression against Ukraine.	(section Efficiency) The issue of agility and reactiveness towards challenging priorities is addressed in a dedicated section, including through the lens of the Russian aggression against Ukraine, Section 4.3.2 Addressing emerging and changing priorities.
The report should draw conclusions, reflecting the outcome of the analysis of the programme's functioning, paving the way for the necessary adjustments.	Further explanations on the importance of stakeholders' feedback to support the heavy reliance on the source (Section 2.2.).
Some more technical comments have been sent directly to the author Service	**Additional adjustments include (main parts):** The analysis elaborates further on the interconnection between EDF and Horizon Europe (Section 4.1.3.3.) Additional examples and analysis on the point of interoperability and interchangeability included. (Sec. 4.1.1.2 (a)) Section on newcomers moved from Efficiency to Effectiveness. Additional evidence inserted to clarify the notion of reduced market uncertainty (Sec. 4.1.1.2 (b)) Additional analysis to explain the reasons on timeframe between preparation and GAP. More information about the Commission Expert Group on Defence, composition and role added. (Section Introduction) Specific references added in Lessons learned with regards to the functioning of the bonus system and the complexity of the award criteria. In Annex 5, Synopsis Report shortened.

ANNEX II. METHODOLOGY AND ANALYTICAL MODELS USED

European Commission services

As the lead service implementing the European Defence Fund (EDF), DG DEFIS conducted the interim evaluation process, including its planning, execution and report drafting. In support to DG DEFIS, an Inter-Service Group (ISG) (see Annex 1) was set up. The activities of the Group started in November 2023 and a total of five meetings were held.

External Contractor

DG DEFIS engaged the services of an external contractor to support with targeted consultation activities and to obtain third-party expert views and analyses on the subject matter. The consortium involved consulting firm *PwC* as consortium leader and European research institutes *IAI, IRIS* and *SIPRI* as partners. The contractor contributed to organise 3 stakeholder consultations through workshops with industry beneficiaries, academia and think-tanks. Additional support was provided in drafting questionnaires to the ENDR network, regional organisations, non-EDF beneficiaries (more on the outcome of such consultations are to be found in the Synopsis Report). The contractor performed subsequent analyses based on a triangulation of evidence stemming from all stakeholder consultations, open desk research and targeted research pieces elaborated in the context of the study. The final outcome of the study can be found here.

DEFIS Expert Group – Sub-Group on Defence

On 30 April 2021, DG DEFIS set up a Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry. This expert group, in its defence configuration, comprises around 60 members including defence companies, research organisations and NGOs. In their advisory role, the group provided input relevant to EDF programme interim evaluation. In the context of the 8th meeting of the subgroup, the Expert Group presented and delivered to DG DEFIS a detailed report on the EDF Interim Evaluation focused on the effectiveness, efficiency, coherence, added value and relevance of the EDF. This has been a very valuable input to examine the views of the European defence industrial ecosystem and to obtain written analyses of best practices and recommendations for the future.

Joint Research Center (JRC)

The Joint Research Center (JRC) also supported DG DEFIS with statistical and econometric activities by delivering a macroeconomic Cost-Benefit Analysis on the European Defence Fund, computed using the *Rhomolo* General Equilibrium model. The full report can be found here[158]. This has been used as key input for an ex-ante assessment of the Fund's economical and societal impact.

Other studies carried out in support to the EDF interim evaluation

As part of the external contractors tasking, six research pieces were written to provide complementary analyses on specific thematic areas. These research pieces are as follows and can be found here:

- **Industrial & Technological autonomy:** This paper investigated how well the EDF increased the Union's industrial and technological autonomy, and the

[158] Casas, P., Christou, T., García Rodríguez, A., Lazarou, N.J., and Salotti, S. (2025). The RHOMOLO macroeconomic impact assessment of the European Defence Fund 2021-2027. MPRA Working Paper.

amount funded by EDF on key technologies and capabilities for defence vs. the amount funded globally on key technologies and capabilities for defence.

- **Reduction of Risks:** This paper investigated whether the EDF was an enabler to reduce risks and costs to engage in collaborative defence activities, both in the research and developments phases (concerning the defence industry and lack of previous cooperation), and which risks industry would have had to face had there not been the EDF existing.
- **Inclusiveness of the Fund:** This paper investigated the differences in level of participation of the EDF and provides a mapping of beneficiaries based on size/type/country of establishment. It relies on the analysis of position papers and questionnaires to respond to the question on whether the EDF created a strong basis for industrial cooperation by detailing project examples and on inputs from the workshops with mid-caps and SMEs.
- **Relevance of the EDF:** This paper investigated how the relevance of the EDF has changed both by analysing the reasons for the change in relevance given the current geopolitical context.
- **Adaptations in the future:** This paper addresses the question of how the EDF could or should be adapted in the future to prepare for challenges such as those presented in the European Defence Industrial Strategy (EDIS).
- **Analysis of the EDIDP:** This paper addresses the question of EDIDP lessons learned, using as baseline the objectives in Article 3 of its Regulation and assess to which extent these objectives have been met. It also addresses how the EDIDP acted as a precursor programme to EDF.

Internal sources of data collection

Internal sources of information were used to determine the monitoring information requested as part of the EDF interim evaluation pursuant to Article 29 (2). This information can be found in section 3.2 of the Staff Working Document.

The cut-off date of data collection was July 2024, in line with the EDF Regulation. Where relevant, more up-to-date information was used (e.g. information related to EDF Work Programme 2025 dated January 2025).

Documentary review / desk research

A thorough analysis of existing documentation from European Commission relevant policy papers was undertaken to gather foundational knowledge and corroborate evidence, as shown in Table 1 below. This involved examining a range of documents, including statutory texts, strategic plans, prior evaluations, and policy assessments.

TABLE 1 - RELEVANT EU POLICY DOCUMENTS

TOPIC	2024		2023	2022		2021	2018		2017
	Mission Letter of Commissioner Kubilius	Court of Auditors Report	EU Strategic Compass	Defence Investment Gaps Analysis & Way Forward	Roadmap: Critical technologies for security and defence	EC Contribution to European Defence	Synergies between civil, defence and space	EDF Impact Assessment	EDIDP Ex ante Evaluation
Strengthening of Budget			X	X				X	
Coordinating Procurement Procedures	X			X		X		X	
Long-term strategy for EDF	X	X						X	
Less Time from Idea to Implementation		X						X	
EDF Bonus System			X			X		X	
Integration with Member States/Industries/ EU defence initiatives	X	X						X	X
Synergies between civil, defence and space industries	X						X	X	
Focus on SMEs	X						X	X	X
Innovation & Critical Technologies				X	X		X	X	

JRC Cost-Benefit Analysis - Rhomolo Model

As mentioned above in Annex 1, JRC services elaborated a study presenting a macroeconomic impact assessment of the European Defence Fund (EDF) expenditure planned for the programming period 2021-2027. The analysis was carried out with the spatial dynamic computable general equilibrium model known as *Rhomolo*.

The EDF data used in the analysis was provided by DG DEFIS and the main features are summarised here. The total amount spent in the European Union (EU) is €7,051.66 million for the programming period 2021-2027. A more precise time profile of the actual expected expenditure over the period was provided as shown in Table 2. This payment profile is calculated assuming that projects start in January 2023, last around 3 years, and payments are made every 18 months with the following shares: 55%, 35%, and 10%).

TABLE 2 - TIME PROFILE OF THE EDF EXPENDITURE (€ MILLION). SOURCE: DG DEFIS

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Indicative Payment profile			562.78	901.80	998.66	998.66	998.66	998.66	998.66	465.91	127.86

Additional information provided by DG DEFIS shows that 92.7% of the funds are directed to the private sector (funding R&D activities in science and technology – M-N sector, in the NACE Rev. 2 classification, see also Table 2) and 7.3% to the public sector.

The *Rhomolo* model is calibrated using data organised in a multi-regional system of Social Accounting Matrices (SAMs) of the NUTS-2 regions of the EU27 (García Rodríguez et al., 2023). DG DEFIS also provided NUTS-2 level data distribution of EDF funding received so far by beneficiaries, thereby enabling a more accurate simulation.

Below are found more detailed tables on the conclusions of the JRC study, as referenced in the interim evaluation report.

NACE Rev. 2 Code	**Definition**
A	Agriculture, forestry and fishing
B-E	Industry (except construction)
C	Manufacturing
F	Construction
G-I	Wholesale and retail trade, transport, accommodation and food service activities
J-K	Information and communication, Financial and insurance activities
L	Real estate activities
M_N	Professional, scientific and technical activities; administrative and support service activities
O-Q	Public administration, defence, education, human health and social work activities
R-U	Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies

TABLE 3 - ECONOMIC SECTORS IN RHOMOLO (NACE REV. 2 CLASSIFICATION) SOURCE: JRC RHOMOLO SIMULATIONS

Table 4 shows the impact of the EDF investments on i) EU GDP expressed as % differences from the baseline; ii) the impact in EUR million per year (obtained by multiplying the % differences by EU GDP in 2021); iii) EU employment expressed as % differences from the baseline; iv) EU employment expressed as net new jobs created per year; v) the cumulative GDP impact in EUR million per year (note that the cumulative impact is the same as the annual impact in 2023, that is the first year in which the shock is applied); vi) the cumulative GDP multiplier, which indicates the EUR of GDP generated by each EUR invested in the policy (it is calculated as the cumulative change in GDP divided by the cumulative shock - monetary injection).

Year	EU GDP Impact (%)	GDP Impact (euro, million)	EU Employment Impact (%)	EU Employment (number of workers)	Cumulative GDP change (Million Euro)	EU GDP multiplier
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0.001	85	0.001	2,526	85	0.15
2024	0.004	488	0.004	7,485	573	0.39
2025	0.008	1,019	0.006	13,097	1,592	0.65
2026	0.013	1,529	0.009	18,366	3,121	0.90
2027	0.016	1,975	0.011	23,123	5,096	1.14
2028	0.020	2,369	0.013	27,418	7,465	1.37
2029	0.023	2,719	0.015	31,295	10,185	1.58
2030	0.025	2,954	0.016	32,413	13,139	1.90
2031	0.024	2,854	0.015	30,830	15,993	2.27
2032	0.022	2,592	0.014	28,147	18,585	2.64
2033	0.019	2,309	0.013	25,471	20,894	2.97
2034	0.017	2,068	0.011	23,064	22,962	3.26
2035	0.015	1,859	0.010	20,902	24,820	3.53
2036	0.014	1,676	0.009	18,959	26,496	3.76
2037	0.013	1,515	0.008	17,213	28,012	3.98
2038	0.011	1,373	0.008	15,643	29,385	4.18
2039	0.010	1,247	0.007	14,231	30,631	4.35
2040	0.009	1,134	0.006	12,958	31,765	4.51

TABLE 4 - EU GDP IMPACT AND MULTIPLIERS. SOURCE: JRC RHOMOLO SIMULATIONS

Figure 1 shows the impact of the EDF on GDP (red line) and on employment (green line) over time and the full shock (blue bars) expressed as a percentage of baseline GDP. After the planned projects from the policy reach completion from 2023 onwards, EU GDP changes are positive each year. The policy reaches a maximum impact of +0.025% increase in EU GDP in 2030 compared to the baseline scenario (without the policy), thanks to the combination of increased private and public investment and higher TFP. This corresponds to a maximum of +2,954 million in 2030 and the creation of +32,413 jobs across the EU, leading to an increase in EU employment of about +0.016%. The impact declines thereafter due to the investment depreciation and lack of demand side stimulus (it is assumed that there are no further public investment in defence R&D after those planned for the period 2021-2027).

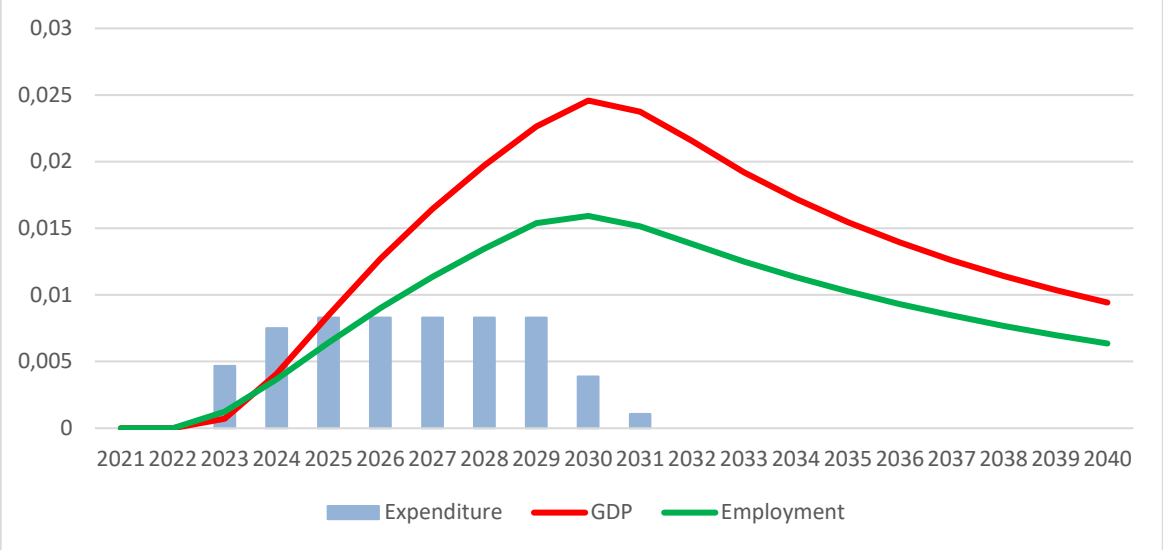


FIGURE 3 - GDP IMPACT (% DEVIATIONS FROM BASELINE GDP) AND EDF EXPENDITURE (% EU GDP) - SOURCE: JRC RHOMOLO SIMULATIONS

Figure 2 shows the evolution of the cumulative EU GDP multiplier, which can be interpreted as a measure of the return on investment, expressed as the euros of GDP generated by each euro invested in the policy. The multiplier increases as projects get completed and, by 2040, a euro invested in the EDF is able to generate more than 4.5 euros in return. This is similar to the results of the ex-post impact assessment of the Horizon policy carried out by Christou et al. (2024a), (in that case, the 17 year multiplier, comparable to the 2040 multiplier reported above, was 4.87 – see Table 4.1 of that paper), despite the following differences in the simulation strategy:

- The share of private versus public investment is 93% versus 7% (in the Horizon analysis it is 60% versus 40%);
- The TFP impact is concentrated in the science and technology sector (in the Horizon analysis it is spread across all sectors).

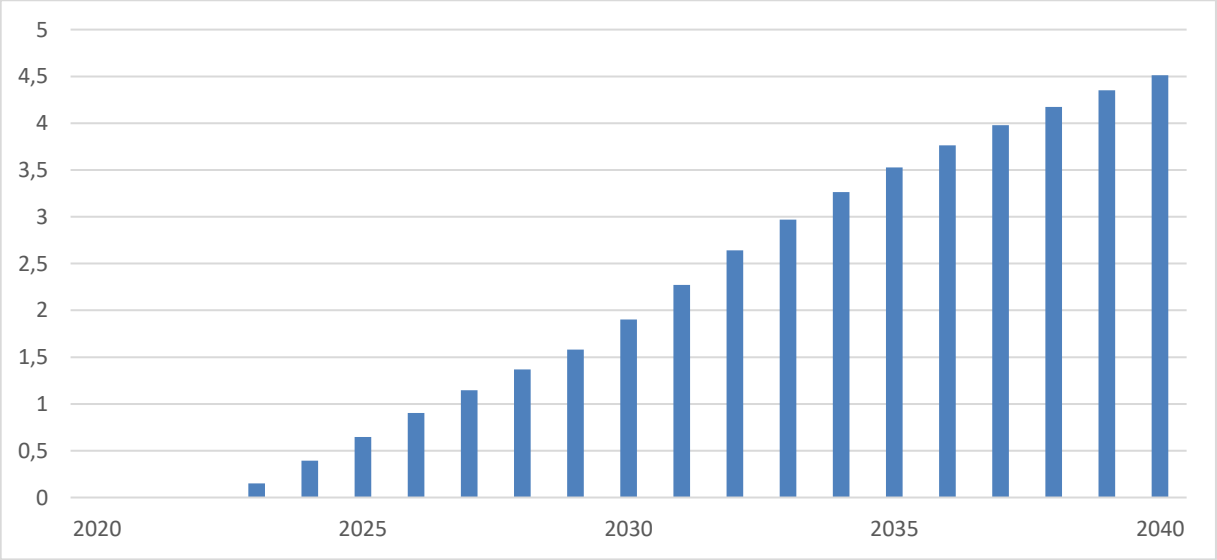


FIGURE 4 - EU GDP MULTIPLIER GENERATED BY THE EDF INVESTMENT SOURCE: RHOMOLO SIMULATIONS.

Stakeholder consultations

DG DEFIS engaged in a comprehensive and wide-ranging stakeholder consultation process starting in Q1 2024 and ending in Q4 2024. The consultation activities for the interim evaluation aimed to gather evidence and inputs on the EDF implementation and performance from key stakeholders in order to reach a measured judgement on how well the programme has performed on the evaluated timeframe.

The objective of the stakeholder consultation was twofold, namely to:

(1) Gather perspectives and insights (such as perceptions, experiences and data) from a wide range of stakeholders on specific issues of interest for the interim evaluation, particularly on topics where available existing data and evidence is scarce, and

(2) Test/validate existing analysis and preliminary findings to ensure that the Interim Evaluation is communicated to stakeholders and that they have the opportunity to comment.

It is worth noting that the 2018 open public consultation in the context of the Impact Assessment accompanying the EDF Proposed Regulation received limited response rates[159] due to the very specific nature of the Fund. DEFIS has therefore chosen not to repeat the experience in the Fund's Evaluation. The stakeholder consultation strategy focused in a more targeted manner on the stakeholders that are directly involved, knowledgeable or interested in the EDF.

The consultation activities provided insights into:

- The relevance of the programme, of its governance and of its focus given the needs to be addressed and the evolving socio-economic, geopolitical, scientific and technological context;
- The first indications of its effectiveness in delivering the expected outputs and results towards its objectives, by looking at the progress of EDF projects so far (a more complete assessment of effectiveness will be done for the final evaluation in 2031), but also achievements from PADR and EDIDP;
- An assessment of the efficiency of the implementation processes given the objectives set, the funding distribution, participation patterns, etc. and the estimated costs and benefits, identifying potential for further burden reduction and simplification;
- Coherence: an analysis of the positioning, complementarity and coordination of EDF interventions with international, EU and national relevant initiatives for defence research and development;
- An assessment of the added value of acting at European level with the EDF compared to uncoordinated action for defence R&D investments at national level.

[159] The response rate to the consultation conducted in January-March 2018 (6 weeks) was relatively low: there were 48 replies-the majority of responses were by defence industries and private enterprises. In detail: research/academia, business associations and public authorities. The input of stakeholders did not seem to be linked to the options, as the questions posed to the stakeholders were of a general nature (e.g. importance of the policy challenges, conceived EU-added value, and experience with current funding possibilities). The reason for this was deemed to be at the time, that the questions had been too specific on the EDF. For more information please consult: Impact Assessment Accompanying the Document Proposal for a Regulation establishing the European Defence Fund. COM(2018) 476 final. Published on 13 June 2018.

A synopsis report providing a summary of all the consultation results has been prepared and annexed to the Staff Working Document.

Mapping of Stakeholders and their involvement in the interim evaluation

The consultation targeted Member States and Norway as well as private entities and public organisations beneficiaries of the EDF in the Member States and Norway as well as non-beneficiaries of the EDF. The consultation included international and inter-governmental organisations engaged in defence activities, including the European Defence Agency (EDA) and the Organisation for Joint Armament Cooperation (OCCAR), which are involved in EDF actions carried out in indirect management, as well as NATO. In line with the European Commission's Better Regulation policy to develop initiatives informed by the best available knowledge, researchers, as well as academic organisations, learned societies, and associations with expertise in defence policies, area also invited to submit relevant published and pre-print scientific research, analyses and data once the call for evidence is published.

The identified stakeholders cover those who are involved in the implementation of the EDF, those who may have had an interest in participating in the EDF - to understand the drivers and barriers to participation - and those who have specific technical knowledge of the EDF.

The logic establishing stakeholder categories is based on a division between:

A) The main stakeholders

Member States and Norway:

- The Member States and Norwegian representatives acting as main focal points in stakeholder consultations with national authorities (e.g. Ministries of Defence, of Economy/Innovation).
- National EDF Focal Points, which are nominated by EU Member States and Norway to support the implementation of the EDF by reaching out to stakeholders and providing information and advice notably to potential applicants and assisting in building partnerships, throughout the EDF life cycle.
- The European Network of Defence Related Regions (ENDR) members representing regional public authorities or regional defence industrial clusters/associations
- Members of the Sub-Group of Defence of the Register of Commission Expert Groups on Policies & Programmes relevant to EU Space, Defence and Aeronautics Industry[160] including National Defence Industry Associations (NDIAs).
- EDF beneficiaries (including large industry, SMEs and mid-caps and RTOs which are EDF beneficiaries)
- Non-EDF beneficiaries (entities that are relevant to defence but who have never applied to the Fund)

International/Intergovernmental Organisations or EU Agencies.

[160] See full list of members here: Register of Commission expert groups and other similar entities (europa.eu).

- European Defence Agency (EDA) staff
- European External Action Service (EEAS) staff and EU Military Staff (EUMS) personnel
- Organisation for Joint Armament Cooperation (OCCAR) staff
- NATO staff

B) Civil society stakeholders with a generic interest in defence matters.

The call for evidence provided an opportunity for any interested stakeholders to contribute proactively.

C) Civil society stakeholders with specific areas of expertise

Academia and think tanks that are non-beneficiaries of EDF but have a solid area of expertise in defence topics. The relevant list was designed by the contractor in coordination with the Commission.

Selection of Consultation Activities & their Accessibility

The consultation activities supported the analysis of the programme's performance against the five Better Regulation evaluation criteria of relevance, coherence, efficiency, effectiveness and EU added value[161].

The table below provides an overview of the different tools mobilised for the evaluation, including the consultation activities, and their relevance to the different evaluation criteria from the Better Regulation framework. The targeted consultation was based on the voluntary submission of evidence and position papers from stakeholders following the publication of the call for evidence on the Europa website[162], coupled with interviews, surveys, case studies and workshops to be performed with the support of external contractors, who will also perform a review of the documentation available and analyse implementation data. The consultation activities ran between Q1 and Q4 2024in order to feed into the drafting of the EDF interim evaluation. The below table summarises the stakeholders targeted and associated consultation methods.

TABLE 5 - STAKEHOLDERS & METHODS

Stakeholders	Consultation channels	Method	Responsible	Evaluation Criteria Assessed
Representatives of Member States and Norway	EDF Programme Committee	- 3 workshops: 23 May, 18 June, 17 July 2024	DEFIS	Effectiveness, Efficiency, Relevance, EU Added Value, Coherence
National EDF Focal Points	National EDF Focal Points	- 1 questionnaire (circulated 10 October 2024)	DEFIS + External Contractor	Effectiveness, Relevance, EU Added Value
European Network of Defence-Related Regions (ENDR)	ENDR Network	- 1 questionnaire (circulated 14 October 2024)	DEFIS + External Contractor	Relevance, EU Added Value, Coherence
Regional Organisations	Baltic Cooperation Assembly, NORDEFCO,	- 1 questionnaire (circulated 14 October 2024)	DEFIS + External	Relevance, EU Added Value,

[161] Better Regulation Toolbox

[162] Have your Say Portal

	Visegrad Group		Contractor	Coherence
Non-EDF Beneficiaries	Ad hoc mailing list	- 1 questionnaire (circulated 14 October 2024)	DEFIS + External Contractor	Relevance, EU Added Value
DEFIS Defence Expert Group	Internal Group	- 2 presentations - 1 position paper	DEFIS	Effectiveness, Efficiency, Relevance, EU Added Value, Coherence
EDF beneficiaries	List of EDF Beneficiaries	- 2 workshops with EDF beneficiaries - Large industry, 12 September 2024 - SMEs, mid-caps and RTOs, 18 September 2024 - 2 Questionnaires circulated (21 August 2024) - 4 additional bilaterals	DEFIS + External Contractor	Effectiveness, Efficiency, Relevance, EU Added Value, Coherence
DG DEFIS staff	DEFIS project officers, financial officers and legal officers	- In person/online discussions - 1 questionnaire (oral/written)	DEFIS	Efficiency, Relevance
EDA and OCCAR project officers	EDA POCs and OCCAR POCs for indirect management	- In person discussion - 1 questionnaire	DEFIS	Efficiency, Coherence
EEAS and EUMS	EEAS and EUMS staff	- 1 in person discussion - 1 questionnaire	DEFIS	Efficiency, Coherence
NATO	NATO staff	- 1 in person discussion; written background ahead of the meeting	DEFIS	Coherence
Research groups and think tanks	Ad hoc mailing list	- 1 online discussion, 26 September 2024	DEFIS + External Contractor	EU added value, Relevance, Effectiveness
General Public/Citizens	Call for Evidence published on the Have your Say portal, 24 January 2024	- Submission of position papers to FMB	DEFIS	EU added value, Relevance,

To ensure the quality of the analytical results presented in the evaluation, the evaluation team employed a multi-step approach to guarantee the reliability and validity of the findings. The following steps were taken:

Firstly, a systematic tracking of stakeholder input and position papers was conducted. This involved collecting and documenting all relevant inputs from stakeholders, including policy makers, industry representatives, and other interested parties. This step helped to ensure that all relevant perspectives and opinions were taken into account and that no important information was overlooked. Secondly, the evaluation team developed consolidated inputs from stakeholders, literature reviews, and internal data sources. This involved synthesizing the information collected from various sources and identifying key themes, patterns, and trends. The consolidated inputs provided a comprehensive overview of the evaluation questions and helped to identify areas that required further analysis. Thirdly, the evaluation team employed a triangulation of evidence approach, using the evaluation matrix as a framework to organize and analyse the data. Triangulation involves cross-checking and verifying the findings across different data sources and methods to increase confidence in the results and identify potential biases or limitations. By using the evaluation matrix, the team was able to systematically evaluate the evidence and identify areas of convergence and divergence.

The use of triangulation also enabled the evaluation team to mix qualitative and quantitative analysis, providing a more nuanced and comprehensive understanding of the evaluation questions. This approach allowed the team to identify patterns and trends that might have been missed through a single method or data source, and to develop a more robust and reliable assessment of the Fund's performance.

Overall, the steps taken to assure the quality of the analytical results presented in the evaluation demonstrate a rigorous and systematic approach to data collection and analysis. The use of triangulation, consolidated inputs, and systematic tracking of stakeholder input helped to ensure that the findings were reliable, valid, and comprehensive, and provided a solid foundation for the evaluation's conclusions and recommendations.

ANNEX III. EVALUATION MATRIX (BY CRITERION)

In accordance with the Better Regulation toolbox, the assessment of the performance of the implementation of tasks, objectives, mandates and policies was be done based on the evaluation of five main criteria: effectiveness, efficiency, relevance, coherence and EU added value. The overall evaluation matrix is presented in the following table:

1. Effectiveness: Did the EDF succeed in meeting the objectives as stated in the Regulation?

Evaluation questions	Judgement criteria	Indicators	Data mobilised
1.1. **To what extent has the EDF boosted the collaborative development of defence products and technologies throughout the Union, achieving economies of scale and addressing fragmentation?**	*Early signals on the extent EDF is boosting collaborative defence R&D spending in the EU*	Comparative analysis of data on EDF investment with aggregated EU defence R&D spending. Comparative analysis of data on EDF research investment with national defence R&T spending.	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) with Member States and beneficiaries** ▪ **EDA data**
	Early signals on the extent EDF is fostering collaboration, reinforcing EU supply and value chains across borders	Analysis of data on cooperation patterns within the EDF. Identification of new types of cooperation created through the EDF opening supply and value chains. Illustrations from selected sample of projects.	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) with Member States and beneficiaries**
	Early signals on the extent EDF is integrating SMEs, mid-caps and Research Organisations	Analysis of data on SME, mid-cap and Research Organisations involvement in cross-border EDF projects. Analysis of data on SME and mid-cap funding obtained and distribution in thematic vs. non-thematic calls. Qualitative assessment of SME and mid-cap roles in EDF consortia. Illustrations from selected sample of projects.	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) with beneficiaries**
1.2. **To what extent has the boosted the performance of future defence capabilities throughout the EU, reinforcing**	*Early signals on the extent EDF is contributing to advancing key defence technologies and capabilities*	Number of EDF actions funded under each EDF category of action and related funding commitments made under the first five EDF work programmes. Identification of domains where EDF projects are expected to advance the development of key defence technologies and capabilities that will foster greater	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) with Member States, defence industry and**

the innovation capacity of the EDTIB and introducing new defence products and technologies?		EU strategic autonomy, reduce dependencies on third countries and increase the interoperability/interchangeability of defence systems. Illustrations from selected sample of projects.	**beneficiaries**
	Early signals on the extent EDF is reinforcing the innovation capacity of the EDTIB	Analysis of available data on effect of EDF on increasing high-skilled jobs in the defence R&D sector. Analysis of data on EDF support to disruptive technologies, in particular through the EU Defence Innovation Scheme (EUDIS) measures.	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) with Member States, defence industry and beneficiaries**
	Early signals on the extent EDF is ensuring continuity of effort along the R&D cycle up to market uptake	Analysis of data on advancement of EDF projects along the R&D funding cycle up to the provision of critical capabilities (*especially vis-à-vis* projects funded under the precursor programmes). Identification of barriers preventing more effective support up to market uptake, notably related to co-financing issues. Illustrations from selected sample of projects.	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) Member States, defence industry and beneficiaries**
	Early signals on the extent EDF is reinforcing the potential for the procurement of projects outcomes	Analysis of procurement potential of expected technologies and products developed by the EDTIB thanks to EU support. Identification of factors hampering faster and streamlined procurement of project outcomes. Illustrations from selected sample of projects.	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) Member States, defence industry and beneficiaries**

2. Efficiency: How cost-efficient was the EDF?

Evaluation questions	Judgement criteria	Indicators	Data mobilised
2.1 **What worked well in the work programme and call preparation phase and what are remaining inefficiencies?**	*Efficiency of preparation of the work programmes and calls for proposals*	Analysis of efficiency of work programme preparation processes, including overall time needed for publication Satisfaction of stakeholders with work programme preparation process and alignment of programming priorities and planning cycles with	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) with Member States**

			Member States/Norway. Identification of remaining inefficiencies related to lack of budget and the competitive nature of EDF calls.	
2.2	**What worked well in the proposal preparation and application phase and what are remaining inefficiencies?**	*Efficiency of preparation of proposals and application process*	Evolution of the time gained for EDF applicants to prepare and apply to EDF calls for proposals from 2021 to 2023. Assessment of improvements made to call documentation, application forms and application modalities over the first 3 rounds of EDF calls. Assessment of communication and outreach measures by DG DEFIS towards prospective EDF applicants and beneficiaries. Analysis of data on issues raised by applicants at application stage. Analysis of data on number and types of newcomers to the EDF programme, including SMEs.	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) with defence industry, beneficiaries, DG DEFIS project officers, NFP network, ENDR network**
2.3	**What worked well in the proposal evaluation and Grant Agreement Preparation phase what are remaining inefficiencies?**	*Efficiency of processes for evaluation of received proposals and Grant Agreement Preparation (GAP)*	Evolution of time to inform applicants and assessment of internal measures put in place to enable faster and leaner evaluation of proposals. Analysis of data on the evolution of inadmissible or ineligible proposals and number of redress cases. Identification of remaining inefficiencies related to programme-specific requirements (e.g. need of establishment of security framework or co-financing declarations).	▪ **Internal DG DEFIS data** ▪ **Consultations project officers**
2.4	**What worked well in the grant management and project implementation phase what are remaining**	*Efficiency of grant management and project implementation*	Analysis of EDF specific features such as the establishment of specific arrangements with the EDA and OCCAR to improve grant implementation of indirectly managed	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) with OCCAR, EDA,**

	inefficiencies?		projects. Analysis of data on project implementation related to reporting obligations, access to and sharing of information, communication between the EC and consortia, establishment of co-financing, IPRs management, and export license rules. Indicators related to EC staff workload/productivity for grant management in direct vs. indirect project management. Analysis of data on size of the consortia. Identification of specific difficulties encountered by SMEs during EDF grant implementation.	**beneficiaries, non-EDF beneficiaries, project officers**
2.5	**What is the overall cost efficiency of the EDF programme (considering the different phases) and what are its expected macro-economic benefits?**	*Overall efficiency and costs-benefits of the EDF implementation*	Estimated measurement of overall cost efficiency of the programme implementation taking into account operational costs, administrative costs and costs for applicants. Overview of expected macro-economic benefits of the Fund on the EU economy (GDP) and job creation.	▪ **Internal DG DEFIS data** ▪ **Data from third-party studies (external contractor and JRC)**

3. Coherence: How coherent was the EDF with other relevant (external and internal) programmes and initiatives?

Evaluation questions	Judgement criteria	Indicators	Data mobilised
3.1. **To what extent is the EDF coherent with other EU defence initiatives?**	*Degree of coherence with CDP and CARD planning processes*	EDF call topic alignment with EU-level capability development priorities set out in planning instruments like the CDP and CARD.	▪ **Internal DG DEFIS data** ▪ **Consultations with Member States, EDA**
	Degree of synergies with PESCO activities	EDF contribution to supporting PESCO projects. Use of EDF projects having claimed the PESCO bonus .	▪ **Internal DG DEFIS data** ▪ **Consultations with EEAS/EUMS**

		Degree of synergies with EDA activities	EDF alignment with EDA activities in terms of Cat B projects followed-on through the EDF. Analysis of operational synergies between complementary defence innovation initiatives like HEDI and EUDIS.	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) with Member States, EDA, beneficiaries**
3.2.	**To what extent is the EDF coherent with relevant international, regional and national priorities?**	*Degree of coherence with NATO activities*	Assessment of EDF projects supporting NATO standards and operational synergies between complementary defence innovation initiatives like NATO DIANA and EUDIS.	▪ **Internal DG DEFIS data** ▪ **Consultations with NATO**
		Degree of coherence with regional priorities	Analysis of perceptions from regional organisations and regional defence clusters/association on EDF impact at regional level.	▪ **Internal DG DEFIS data** ▪ **Consultations with ENDR network and Regional Organisations**
		Degree of coherence with national priorities	Assessment of EDF programming alignment with national defence planning processes and priorities.	▪ **Internal DG DEFIS data** ▪ **Consultations with Member States**
3.3.	**To what extent is the EDF coherent with other civil R&D programmes?**	*Degree of synergies with other EU programmes*	Assessment of effect of EUDIS measures in creating cross-sectoral civil-military synergies. Alignment of EDF operational support with the EU Space Programme, Horizon Europe and Digital Europe.	▪ **Internal DG DEFIS data** ▪ **Consultations with other DGs, project officers.**
		Degree of synergies with wider policy initiatives	Overview of EDF operational support in contributing to wider Commission priorities: 'A Europe fit for the Digital Age' (via contribution to STEP objectives or funding of AI and cyber defence related projects) and 'Green Deal' (via funding of projects in Energy and Environment category of action)	▪ **Internal DG DEFIS data** ▪ **Consultations with other DGs, project officers.**

4. Added Value: How did the EU intervention make a difference and to whom?

Evaluation questions	Judgement criteria	Indicators	Data mobilised
4.1. **To what extent did the EDF make a difference to Member**	*Assessment of EU added-value of EDF participation for Member States/Norway*	Examples of projects that could not have been achieved purely at a national/regional level.	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) with Member States and think-tanks/academia**

	States?		Added value of EDF cooperative projects to fill capability gaps at EU level esp. for smaller Member States.	
4.2.	**To what extent did the EDF make a difference to the EDTIB?**	*Assessment of EU added-value for EU industry and other stakeholders*	Assessment of EDF impact on de-risking investments for industry on collaborative defence projects. Assessment of degree of expanded market opportunities and increase in culture of cooperation in the EDTIB. Analysis of EDF impact on high-skilled job creation in the sector.	▪ **Internal DG DEFIS data** ▪ **Consultations (survey, interviews, workshops, call for evidence) with defence industry, beneficiaries and think-tanks/academia**

5. Relevance: How relevant is the EDF in the current context and what has changed since its creation?

	Evaluation questions	Judgement criteria	Indicators	Data mobilised
5.1.	**Is the intervention still relevant since its onset in 2021?**	*Degree of adequacy of EDF intervention given evolving needs*	Comparative assessment of relevance of the EDF programme before and after the war in Ukraine.	▪ **Internal DG DEFIS data** ▪ **Consultations with Member States, beneficiaries, and think-tanks/academia**
5.2.	**How well has the EDF adapted itself in view of the current geopolitical context?**	*Degree of predictability and flexibility of EDF programming and funding priorities compared to the needs.*	Assessment of adaptation capacity of EDF in funding areas relevant for evolving defence needs, especially as shown from the experiences in the Ukrainian battlefield. Relevance of EDF towards fostering the greater integration of Ukrainian defence industrial base.	▪ **Internal DG DEFIS data** ▪ **Consultations with beneficiaries and think-tanks/academia**

ANNEX IV. OVERVIEW OF BENEFITS AND COSTS

The European Defence Fund (EDF) stands as a strategic initiative aimed at enhancing the EU's defence capabilities through collaboration R&D actions. In assessing the EDF intervention, an overview of its costs and benefits (monetary and non-monetary) is provided below.

Costs

The EDF intervention entails financial commitments that include operational expenditure projected at approximately €7.3 billion, along with administrative costs estimated to be around €160 million. For EU citizens, the financial implication is a total cost of

approximately €22.17 per person over the 2021-2027 timeframe, which averages out to €3.17 per year. Entities engaging in EDF programmes are confronted with application costs that range from €32,030 to €44,367 per proposal (i.e. around €500,000 for an average consortium of 13 entities), while average staffing costs are estimated at €8,335 per month per project[163]. Beyond these financial expenses, stakeholder consultations with industry beneficiaries have revealed additional non-visible costs related to participating in the initiative which involve setting up cross-border consortia agreements, securing co-financing with Member States, and HR costs related to sourcing specialized personnel for collaborative defence research and development projects.[164] Additional challenges arise from coordinating the necessary documentation for EDF submissions.

Benefits

Despite these costs, the EDF offers substantial benefits. Economically, according to the JRC's *ex-ante* simulation (see Annex II), the EU intervention is anticipated to generate approximately 32,000 direct and indirect jobs across the EU, with these employment benefits expected to reach their peak by 2030. According to the same simulation, the Fund is also projected to have a positive macroeconomic impact, with an expected cumulated increase in EU GDP in the order of €31,765 million (from 2023-2040).

Financially, the EDF is predicted to channel significant funding into the industry, with €3.116 billion already in signed EU grants as of 2023 and of which €567 million destined to small and medium-sized enterprises (SMEs). This influx of financial support is likely to foster microeconomic benefits for participating companies, driving business growth. Consulted beneficiaries have indeed noted that participating in EDF projects enables companies to enhance market reach of their existing defence products, further scale their operations, access new markets, and develop strategic interactions with MoDs beyond their national ones.[165] Additionally, collaborations facilitated by the EDF lead to high-quality scientific and technological results, contributing to the advancement of defence-related knowledge which cannot be fully quantified at this stage.

Another non-monetary benefit of the EDF is the inherent efficiency gained by consolidating defence R&D spending at the EU level[166]. This collaborative approach reduces duplication of funding efforts and addresses European capability gaps in funding. Furthermore, EDF products are expected to result in an increased standardisation of defence systems between Member States' capabilities which will generate non-quantifiable interoperability gains. It is ensured that, by design, EU standards developed through EDF projects also use the relevant NATO standards wherever applicable.

Another long-term non-quantifiable benefit of the EDF is the increased security and strategic autonomy offered by investing collectively in European defence capabilities which will offset dependencies on third countries. This appreciation has been also confirmed during consultations with Member States which cited several examples of EDF and EDIDP projects that are perceived as directly contributing to enhancing national autonomy.[167]

[163] Estimations from external study.
[164] Consultations and Workshops with Large Entities.
[165] Consultations and Workshops with Large Entities, SMEs, Mid-Caps and RTOs.
[166] A study performed by an external contractor (research piece 1) noted that the EDF R&D funding provided to the European Patrol Corvette (EPC) programme (totaling €214 million) will contribute towards around 25% of total R&D costs of the programme, considering the expected €5-6 billion total production costs for 20 expected vessels for interested nations.
[167] See Annex V, Consultations with Member States.

In summary, while the programme carries inherent costs and administrative complexities, such costs are outweighed by much wider programme benefits, spanning economic growth, industrial reinforcement, strategic autonomy, and scientific advancement.

Overview of costs and benefits identified in the evaluation							
		Citizens/Society		Beneficiaries/Industry		Public Administrations	
		Quantitative	Comment	Quantitative	Comment	Quantitative	Comment
[Cost or Benefit description]:							
Costs: ***EUR 7.3 billion in operational expenditure*** ***EUR in 160 million administrative expenditure***	**One-off**	○ Total cost for each EU citizen of €22.17 euros for the timeframe 2021-2027 (€3.17 per year)(evidence from third party)	N/A	○ Estimated application cost of €32 030 - €44 367 per entity/ proposal (evidence from third party) ○ Average staff cost per month per project of €8 335 (evidence from third party)	○ Administrative burden for consortia coordinators to set-up consortia agreements. ○ Administrative burden in finding co-financing from national authorities for EDF development actions. ○ Investing in/finding specialised personnel to work on collaborative defence R&D.	N/A	○ Administrative burden for setting up co-financing schemes with industry. ○ Administrative burden for providing Letters of Intent and other supporting documentation for industry's submission of EDF proposals.

Benefits:	**One-off**	Direct Benefits: Expected Employment benefits - +32,413 direct and indirect jobs across the EU (peak effect of intervention in 2030) Macroeconomic benefits: +0,016% increase in EU GDP (peak effect of intervention in 2030) with cumulated GDP impact of €31,765 million (from 2023-2040)	Creation of new high-skilled jobs and employment impact	○ Value of EU signed grants (EDF 2021-2023 projects): €3.116 billion ○ Funding granted to SMEs until 2023: €567 million	○ Cross-border cooperation of entities and SMEs and mid-caps and ROs entering large-scale partnerships ○ Innovation potential and progressive acquisition of disruptive technologies. ○ Microeconomic benefit for companies and potential growth including value of projects marked under EU funding ○ Direct revenues expected to be high once the EDF projects will start to be procured ○ Discovery of new specialised entities in the defence supply chains.	N/A	○ Increased investment in capabilities needed for EU strategic autonomy and reduction of technological dependence on third countries ○ Stronger cooperation between Member States by design to increase standardisation and interoperability of defence products. ○ Developing cooperatively capabilities that no single Member States could develop alone (both financially and technologically).

TABLE 6 - OVERVIEW OF COSTS AND BENEFITS IDENTIFIED IN THE EVALUATION

ANNEX V. STAKEHOLDERS CONSULTATION - SYNOPSIS REPORT

The stakeholder consultation process performed for the EDF interim evaluation was extensive both in scope, by encompassing a wide variety of relevant actors, and in geographical balance, targeting entities from all Member States and Norway. DG DEFIS targeted all the stakeholder groups that were originally envisaged under the Stakeholder Consultation Strategy. DG DEFIS reached out in a targeted manner to 330[168] relevant stakeholders that were directly or indirectly impacted by the EDF, receiving an average response rate of 37% to invitations for written contributions (see Table 7).

TABLE 7 - RESULTS AND RESPONSE RATE OF QUESTIONNAIRES FOR THE EDF INTERIM EVALUATION

Table 7. Results and Response Rate of Questionnaires for the EDF Interim Evaluation				
Entity Category	Questionnaire replies	Contacted/Invited	Response Rate	Average total response rate
Large Industry	10	32	31%	
SME-Mid-Caps, RTOs	8	54	15%	
ENDR	8	60	13%	
NFPs	7	28	25%	
Member States and Norway (repetitive)	50	84	60%	**37%**
Non-EDF Beneficiaries	3	48	6%	
Regional Organisations	2	3	67%	
EC DG's	3	18	17%	
Institutions (EDA, EEAS/EUMS, OCCAR)	3	3	100.0%	
Total	94	330		

DG DEFIS received a total of 35 individual position papers, received either in the context of the Call for Evidence, spontaneously through the dedicated functional mailbox (DEFIS-EDF-INTERIM) or following dedicated consultations (e.g. workshops) (see Table 8). All received position papers were considered relevant and analysed for the given stakeholder grouping.

TABLE 8 - POSITION PAPERS RECEIVED FROM STAKEHOLDER GROUPS

Position Papers Received from Stakeholder Groups	
Entity Category	Position Papers per entity type
Large	7
SME	4
Mid-Cap	3
Think-Tanks and Academia	4
NDIA	5
Business Association/Cluster Network	5

[168] Including same entities. EU Member States and Norway were consulted on three separate workshops.

Institutions	2
NGO	1
Expert Group	1
Member States	3
TOTAL	**35**

1. FEEDBACK FROM MEMBER STATES AND NORWAY

In the context of the EDF interim evaluation, DG DEFIS organised three workshops with EU Member States and Norway representatives. The first workshop took place on 23 May 2024 on the subject of 'Programming and Strategic Planning of the European Defence Fund'. The second workshop took place on 18 June 2024 on the subject of 'Inclusiveness and Innovation of the EDF of the European Defence Fund'. The third workshop took place on 17 July 2024 on the subject of 'Calls and Project Implementation'. The below analysis provides a synthetic and generalizable summary of views expressed by Member States and Norway on subject matter addressed during the three workshops based on dedicated issue papers prepared by DG DEFIS. The average participation was of around 90 experts from 26 EU Member States, Norway, European Defence Agency (EDA) and EEAS/EU Military Staff (EUMS).

EDF programming and coherence with EU-level and national level priorities and planning

On average, Member States view EU-level defence priority setting instruments such as the CDP, Strategic Compass, CARD, OSRA as being sufficiently relevant in informing and providing guidance for EDF programming. Member States pointed out that such instruments, however, do not necessarily enable an operational translation of priorities into call topics for EDF Work Programmes. Furthermore, Member States perceive that EDF Work Programmes are sufficiently aligned with and complementary to national defence planning process, including as regards to national R&D priorities, capability development plans and budgetary planning.

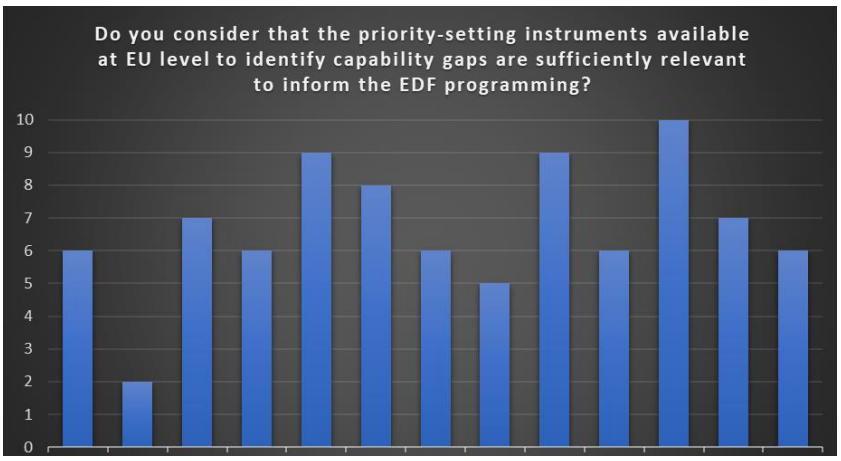


FIGURE 5 - RESPONDENTS PERCEPTION O RELEVANCE OF EU-LEVEL PRIORITY SETTIN INSTRUMENTS FOR EDF PROGRAMMING

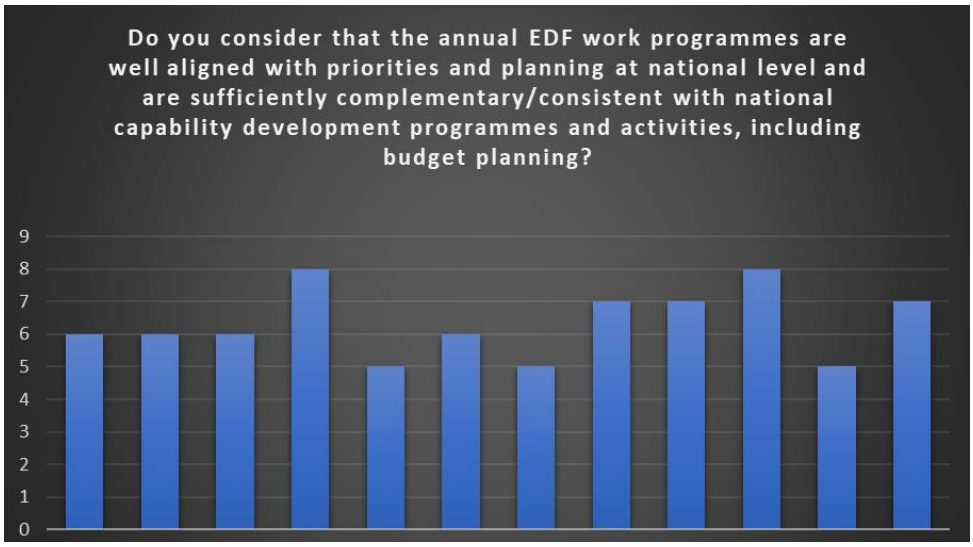


FIGURE 4 - RESPONDENTS PERCEPTION ON EDF PROGRAMMING ALIGNMENT WITH NATIONAL PRIORITIES

EDF Work Programme preparation

Member States consider the coordination with DG DEFIS during the Work Programme preparation, including the call harmonisation process, to be highly positive and an improvement from EDIDP. Member States however revealed the challenge of finding in MoDs enough national experts to undertake harmonisation-related tasks. Member States have also noted that the introduction of *S-CIRCABC* as a secured Commission tool to share draft Work Programme versions improves traceability of Member States' positions and enables a more transparent system of communicating with the EC.

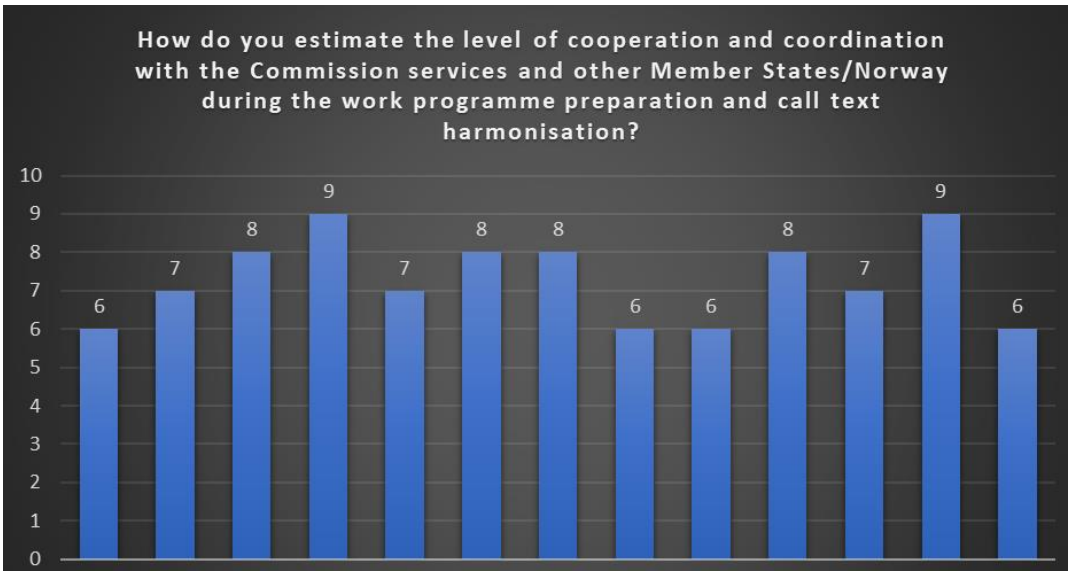


FIGURE 7 – RESPONDENT PERCEPTION ON COORDINATION WITH THE EUROPEAN COMMISSION IN WORK PROGRAMME PREPARATION AND CALL HARMONISATION PROCESSES.

EDF Multiannual Perspective and Annuality of WPs

The introduction of the EDF Multiannual Perspective (MAP) is overall well appreciated by Member States. It is viewed as a tool that enables better long-term predictability on where and how EDF budget in future Work Programmes will be spent and also as a way to ensure better alignment between EDF programming with longer-term defence planning at national level. The high added value of MAP is made clear also through a more quantitative assessment of respondent feedback giving an average satisfaction rating of 7 out of 10. In terms of the perceived utility of MAP, there were some dissenting views as well. Some Member States perceive that annual Work Programmes often deviate from original MAP intentions and, as such, the tool is not extensively taken into consideration at national planning level.

While not many respondents expressed views on the matter, there is no consensual opinion as to whether there would be a preference to maintain annual Work Programmes or whether to shift to a multiannual Work Programmes. Those in favour of the latter noted that the annual preparation cycle is very intense and causes difficulties to align EDF programming with national priorities. In this respect, a two-year programme could ease the administrative burden and provide more time for Member States to embed national capability needs in the EDF in a better way. Those favouring annuality put forward the argument that it allows EDF Work Programmes to be better scrutinized.

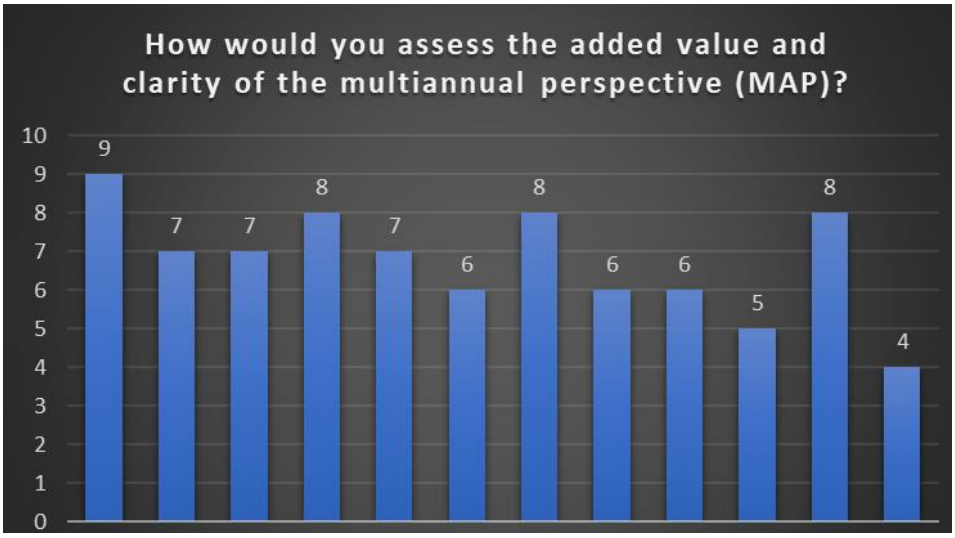


FIGURE 8 – RESPONDENT PERCEPTION ON THE EDF MULTIANNUAL PERSPECTIVE

Adaptation of EDF programming to new challenges

Member States tend to agree that EDF programming priorities should be flexible enough take into consideration the changing security environment –over half of the respondents of the questionnaire very much agreed with the statement: *"Do you consider that the changing security environment should lead to an adaptation of EDF priorities?"*. Member States also noted that the lessons learned from the war in Ukraine, for example, justify a greater focus of EDF on certain short-term capability needs such as counter UAS or air and missile defence systems. However, some Member States expressed that the EDF should keep its focus on medium and long-term aims as originally intended.

EDF Budget

In relation to the EDF financial envelope, the majority of Member States believe that EDF budget is to be increased. Member States further elaborated

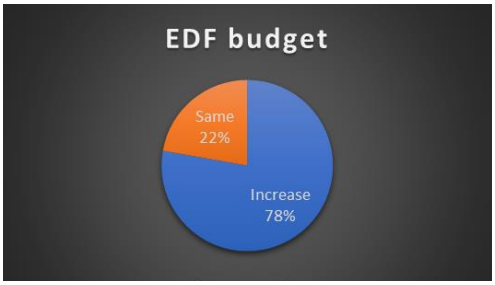


FIGURE 9 - RESPONDENTS PERCEPTION ON ADEQUACY OF EDF BUDGET

that the Regulation's split between R&D funding could be more flexible to enable the funding of follow-up projects where needed. Others view the division of budget between Research and Development as adequate.

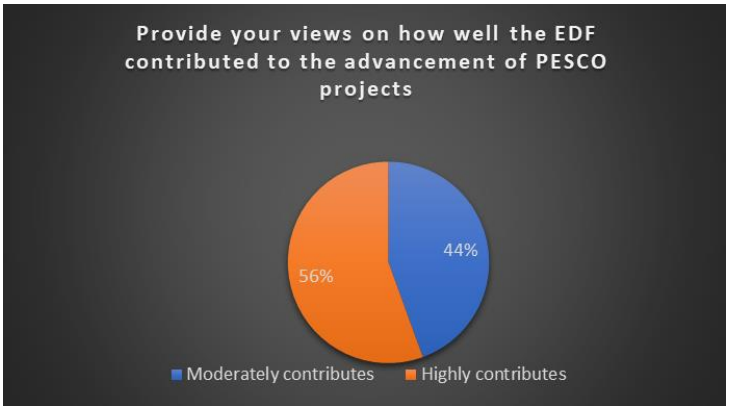
Ensuring continuity of efforts on specific defence R&D topics and/or projects over the programming period

On average, 80% of respondents to a questionnaire provided a rating of 7 out of 10 or higher regarding the EDF's capacity of supporting the transition of PADR/EDIDP/EDF projects in terms of follow-on projects. Member States therefore view generally positively the EDF's capacity to ensure continuity of efforts on specific defence R&D topics and/or projects over the programming period. As one Member State stated: "*EDF is the main contributor to the general continuity of effort of R&D action*". Another Member State similarly noted that: "*There is a good continuity for the R&D actions*". Another Member State noted: "*the transition from PADR/EDIDP to EDF has been well supported in terms of the follow-on projects. We believe that the successful continuation of research results in the development stage can be highlighted positively*." Member States cited several examples of EDIDP-projects which have found a follow-up in EDF.[169] Member States however expressed diverging views as to whether the EDF should be more oriented to supporting less projects but of a larger scale (e.g. so called 'flagships'), or rather a greater number of smaller projects to favour inclusivity. Other Member States suggested a mixed approach to potentially support flagships at various levels of technological advancement but also to preserve the creation of smaller projects. During workshop discussions, the EDA noted that most of the projects from PADR managed by EDA have received continuity under EDF (namely in soldiers' systems category). EDA also noted that if a project did not continue under EDF, in many cases, Member States/Norway plan to ensure this continuity on their own or with EDA support.

EDF-PESCO link

The EDF link to PESCO via the additional 'bonus' funding rate is perceived to have the effect of concretely supporting and even advancing the development of PESCO projects in a synergistic manner. While Member States did not fundamentally question the 'PESCO bonus' as such, some noted the need to further reinforce the verification of EDF projects claiming 'PESCO link' at both proposal evaluation stage and at project implementation stage should be found. To this end, some Member States put forward the idea that there could be a more structured involvement or role of the PESCO secretariat in the evaluation process.

FIGURE 10 - RESPONDENT PERCEPTION OF EDF CONTRIBUTION TO THE ADVANCEMENT OF PESCO PROJECTS



[169] Projects such as: *Miricle* project in the *E=MCM* project, the *JEY-CUAS* project in *E-CUAS* project, and a foreseeable successor of the *iMUGS* project as a result of 2024 calls. EDIDP project *Sea Defence* resulting in two successor projects *EDINAF* and *dTHOR* was also mentioned. Other include: *LynkEUs-Marseus, SEACURE-SEANICE, FAMOUS I-FAMOUS II, ESC2-EC2*.

Technological autonomy, reducing dependencies on third counties and addressing EU capability gaps

On average, Member States believe that EDF is laying the ground towards increasing national technological autonomy and reducing dependency on third countries.

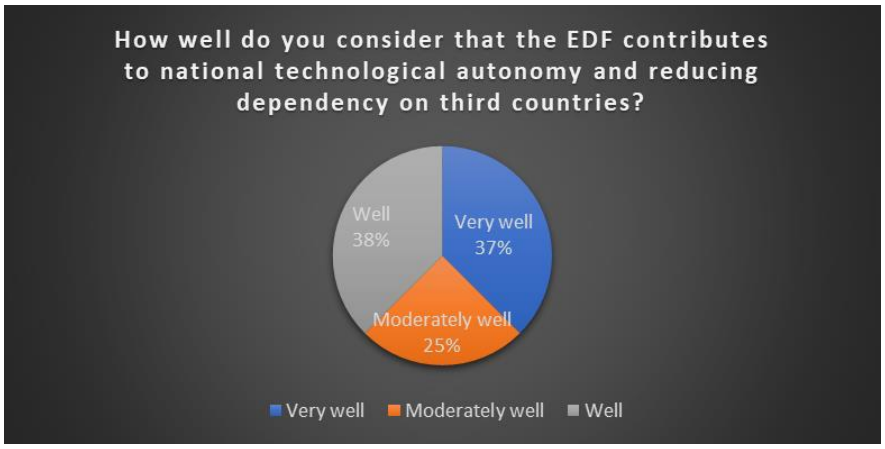


FIGURE 11 – RESPONDENTS PERCEPTION OF EDF IMPACT ON INCREASING NATIONAL TECHNOLOGICAL AUTONOMY AND REDUCING DEPENDENCY ON THIRD COUNTRIES

While it is too early to assess the impact of EDF project results on national autonomy, Member States provided concrete examples of ongoing EDF or EDIDP projects that are perceived to have an impact, notably in the Mine Counter Measure, Information Superiority, Space, Cyber, Hypersonic Interceptor and Radar technology domains.

Projects identified by respondents (Member States) perceived as increasing technological autonomy			
Project	*Category*	*Programme*	*Call year*
INDY	Energy	EDF	2021
SHOLFEA	Ground Combat	EDF	2021
EPW	Naval	EDF	2021
EU HYDEF	Air/Missile Defence	EDF	2021
FIIST	Simulation and Training	EDIDP	2020
FAMOUS	Ground Combat	EDIDP	2020
MIRICLE	Underwater warfare	EDIDP	2020
JEY-CUAS	Information Superiority	EDIDP	2020
MALE RPAS	Information Superiority	EDIDP	2020
GEODE	Space	EDIDP	2019
PANDORA	Cyber	EDIDP	2019

TABLE 9 - PROJECTS IDENTIFIED BY RESPONDENTS (MEMBER STATES) PERCEIVED AS INCREASING TECHNOLOGICAL AUTONOMY

Member States also noted that, while is too early to talk about concrete results, the EDF is contributing to address capability gaps identified at EU level, with an average of score given by respondents of 7 out of 10.

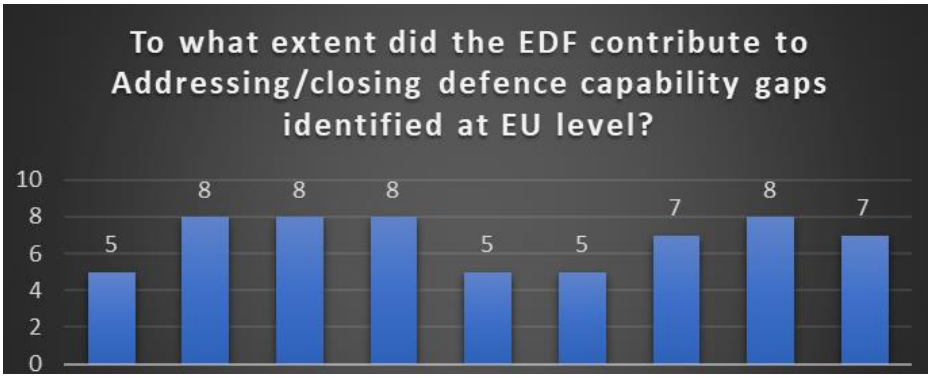


FIGURE 12 – RESPONDENT PERCEPTIONS ON EDF CONTRIBUTION TOWARDS ADDRESSING/CLOSING EU DEFENCE

Projects perceived by Member States as addressing or closing EU capability gaps			
Project	*Category*	*Programme*	*Call year*
ACTUS	Information Superiority	EDF	2023
FASETT	Force Protection & Mobillity	EDF	2022
PROTEAS	Information Superiority (C2)	EDF	2022
EPC	Naval	EDF	2021
ENGRT	Air Combat	EDF	2021
LOTUS	Information Superiority	EDIDP	2019

TABLE 10 - PROJECTS ADDRESSING EU CAPABILITY GAPS AS PERCEIVED BY MEMBER STATES

Procurement

Asked whether results of EDF, EDIDP or PADR projects were already being procured or would be considered to be procured in the near future at national level, most Member States noted that it is too early to provide a definitive answer. However some Member States mentioned examples of projects whose results carry a strong possibility of being progressively integrated in the armed forces. In terms of the added value of the EDF instrument, Member States perceive in a positive light that the Fund is contributing to the realisation of common defence projects that could not have started nor been achieved at national level alone. Written inputs from stakeholders further revealed the procurement intentions of national MoDs.

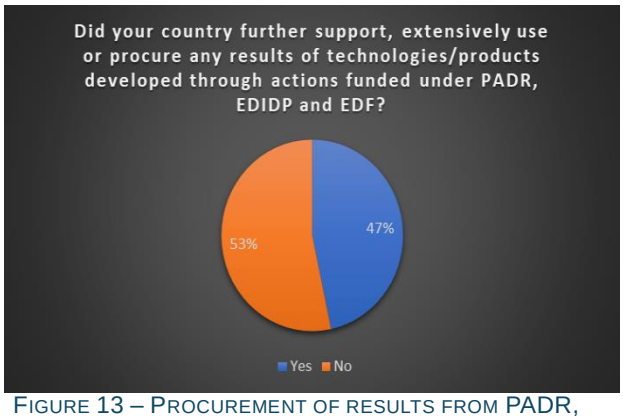


FIGURE 13 – PROCUREMENT OF RESULTS FROM PADR, EDIDP OR EDF

Future potential procurement of EDF/EDIDP project results		
Project	*Category*	*Programme*
SEA DEFENCE	Naval	EDIDP
FIIST	Simulation & Training	EDIDP
5G COMPAD	Cyber	EDF
EPC	Naval	EDF
MIRICLE	Underwater warfare	EDIDP
PANDORA	Cyber	EDIDP
FAMOUS I	Force protection & Mobility	EDIDP
FAMOUS II	Force protection & Mobility	EDF
CBRN RSS	Medical Countermeasures	EDIDP
BATTLEPAD	Cyber	EDF
FACT	Cyber	EDF

TABLE 11- FUTURE POTENTIAL PROCUREMENT OF EDF/EDIDP PROJECT RESULTS

Lowering risk of unnecessary duplication

On average, Member States believe that EDF has to a large extent had the effect of lowering risks of unnecessary duplication of defence products in the EDTIB, with respondents giving an average score of 7 out of 10.

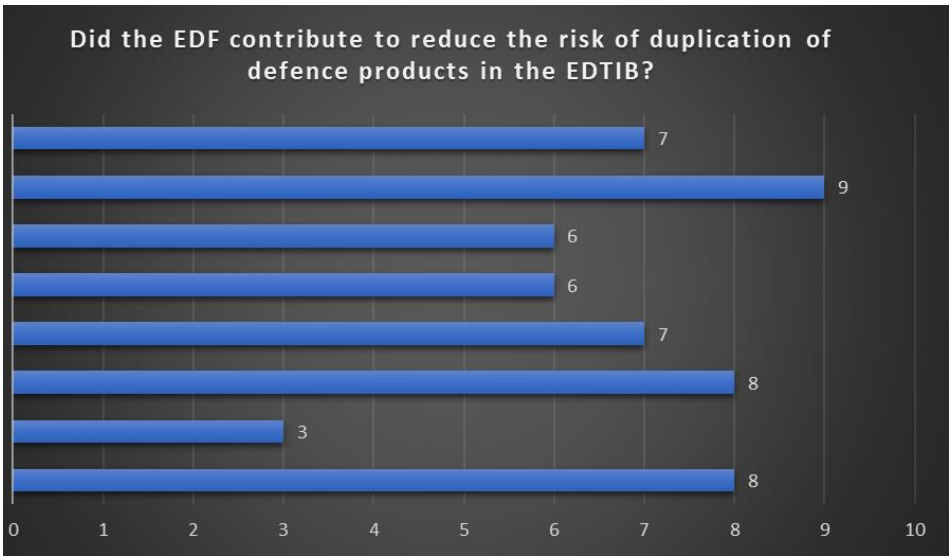


FIGURE 14 – RESPONDENT PERCEPTION ON THE REDUCTION OF RISK OF DUPLICATION IN THE EDTIB

Cross-border collaboration, opening supply chains and inclusiveness of the Fund

Overall, Member States perceive that the EDF is positively contributing to the opening of supply chains and the consolidation of the EDTIB. Member States noted the uniqueness of the EDF tool in solidifying the integration of the European defence ecosystem and industrial tissue by virtue of enabling cross-border collaborations and spreading technological know-how. Member States made more specific reference to EDF, EDIDP and PADR projects exemplifying such impacts brought by the EU defence R&D industrial programmes:

- One Member State noted the participation of its entities in projects PANDORA (EDIDP), LOTUS (EDIDP), 5G COMPAD (EDF) has enabled them to grow business opportunities, build new cross-border partnerships and integrate technologies in larger defence products.
- One Member State noted the role of ECYSAP (EDIDP) project in enabling the involvement of RTOs in European defence projects researching and developing cutting-edge technologies.
- One Member State noted project FAMOUS (EDIDP) as further expanding regional partnerships and ADEQUADE (EDF) for providing a common framework to expand cross-border cooperation in quantum technologies.
- One Member State noted the example of a local company which has grown significantly from being an SME to a Mid-cap by being involved in European defence ecosystem through EDF.
- One Member State noted CROWN (PADR) project dealing with aerial electronic warfare as another example of a project reinforcing European supply chains.

Remarks during workshop discussions and further written input noted the uniqueness of the EDF tool in solidifying the integration of the European defence ecosystem:

- "*The EDF has facilitated knowledge sharing, technology transfer and skill development among defence-related industries, research organisations and academia…this had contributed to a more integrated and resilient defence innovation ecosystem within [the country]*."
- "*EDF projects provide [entities] valuable experience in the defence field and help build new long-term partnerships not only on regional, but also European levels with follow-up cooperation opportunities both for innovation and industrialisation*".
- "*The positive effect is twofold - it encourages cooperation and opening-up of the supply chains and sets the ground for future business opportunities*."

In addition, Member States tend to acknowledge that the EDF, as designed, sufficiently provides opportunities for participation, for both smaller and larger Member States alike:

- One large Member State noted that it had: "*signed more than 100 Letters of Intents since EDIDP with 25/26 Member States which is proof of the opportunities generated by EDF across all Member States*".
- A mid-sized Member State further noted that "*The EDF is designed to be inclusive, allowing entities from all Member States and Norway to participate*".

Realising projects that could not have been achieved only at national level

On average, Member States perceive that EDF was important in contributing to the realisation of defence projects of European interest that could not have started nor been achieved at national level alone. Respondent to the question "*Do you consider that the EDF contributed to realising projects that could not have been achieved purely at national level*?" gave an average rating of 8 out of 10. Inputs from Member States provided some clear examples of EDF-funded projects in the maritime, space and most notably in hypersonic threats domain, as seen in the table below.

Smaller Member States also highlighted in their inputs that the EDF has enabled their participation in larger scale defence projects that otherwise would not have been conceivable: "*Some projects of very high budget could have only been realised by big Member States at national level, without funding from European Commission*." Another Member State noted: "*With EDF, smaller countries are given the opportunity to participate in such projects*.". Another Member State also noted that "*many awarded EDF projects have a higher budget than is the MoD budget for R&D…we conclude that we would not be able to come up with such ambitious projects on a purely national level*".

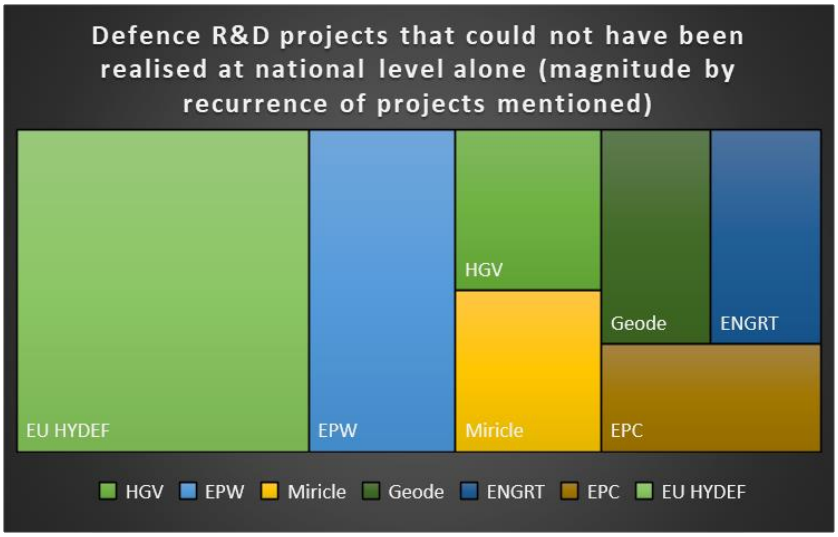


FIGURE 15 – RESPONDENT PERCEPTION OF PROJECTS THAT COULD NOT HAVE BEEN REALIZED AT NATIONAL LEVEL ALONE

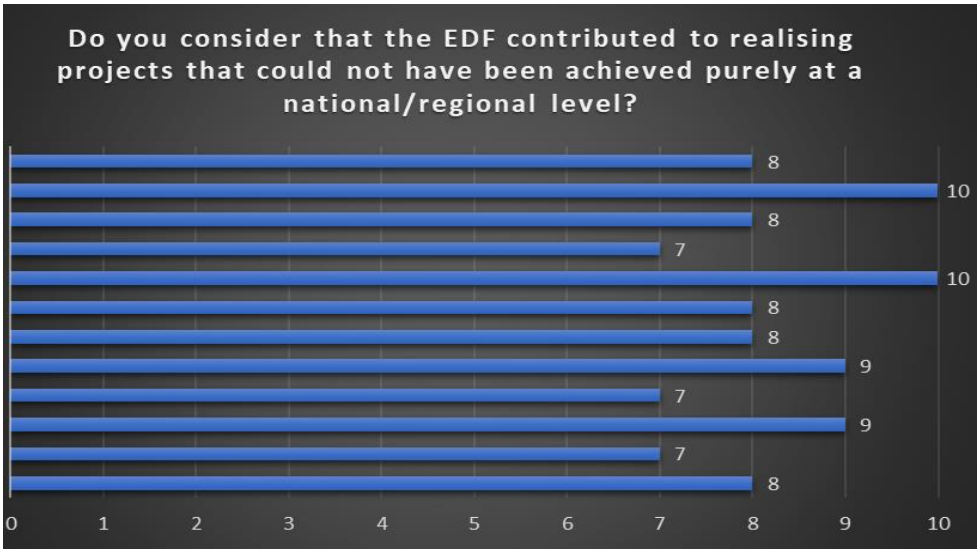


FIGURE 16 – RESPONDENT PERCEPTION OF EDF'S CONTRIBUTION IN REALIZING PROJECTS THAT COULD NOT HAVE BEEN ACHIEVED AT NATIONAL OR REGIONAL LEVEL ALONE

Enabling potential for interchangeability/interoperability

On average, Member States believe that EDF projects have the potential to enable further interchangeability or interoperability of defence systems. While most Member States stated that it was too early in the programme's implementation, one Member State noted: *"we agree that the EDF carries a potential for improving interoperability and interchangeability."* Some project examples listed by Member States in their inputs were:

o SDMMS project was cited as an example of supporting increased interoperability in Military Mobility.

o EDINAF, dTHOR and EPC were mentioned for the naval domain.

o ENGRT was cited for rotorcraft standardisation and FASETT for future mid-size tactical transport interoperability.

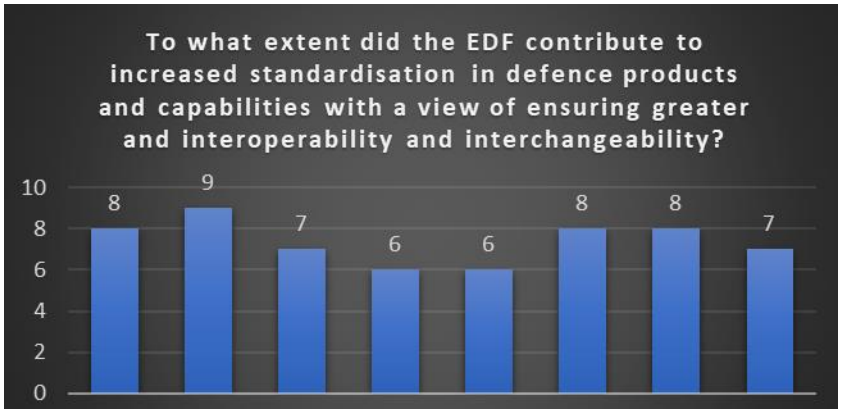


FIGURE 17 - RESPONDENT PERCEPTIONS ON EDF CONTRIBUTION TOWARDS INCREASING INTEROPERABILITY

Attractiveness of the Fund for Newcomers

The majority of Member States believe that the EDF has attracted an increasing number of 'newcomers' to the defence sector – meaning first-time participants in industrial defence R&D projects. Some Member States underlined that newcomers play an important role in consortia, especially in terms of bringing innovative ideas and solutions. Member States have noted from the experiences of their national industries that it remains difficult for new entities to enter "follow-up" EDF development projects. Additionally, rules for handling classified information, the calculation of funding rates and the bonus system for development actions are found to be challenging for newcomers. Some Member States put forward the recommendation that funding in "non-thematic" SME calls or Disruptive

technology calls should be increased to encourage newcomers or less experienced SMEs using those calls as an entry point into EDF. One Member State noted: "*Maintaining non-thematic SME calls without a specific focus area is essential…this approach provides innovative SMEs, particularly those not yet established in the defence sector, with a fair opportunity to participate in the EDF*".

SMEs and Mid-Caps participation in the EDF

On average, Member States are either partially or strongly satisfied with the degree of inclusion of SMEs in the EDF and acknowledge the incentivisation effect on cross-border defence R&D cooperation enabled by the EDF. Member States view the incentives favouring inclusiveness of SMEs and Mid-Caps in EDF consortia as established by the provisions in the EDF Regulation to be an important driver for this added participation. Member States also noted the positive impact of dedicated support measures organised by DG DEFIS such as SME business coaching services, EDF Info Days and NFP network to foster better understanding on the funding opportunities available under the EDF and in facilitating SME participation in the Fund.

Some Member States however noted that the participation of SMEs does not necessarily translate to higher participation in work packages nor guaranteeing a central role of SMEs in a consortium. One Member State noted that there has been a decrease in the participation of SME entities applying to the Fund over the three-year EDF cycle due to the high administrative burden and difficult negotiations on IPRs. Some Member States also outlined the aspect related to the perceived difficulty of being integrated in larger thematic calls. In terms of recommendations, many Member States call on a simplification of the application process for SMEs to reduce administrative burden. This could be done by potentially by simplifying funding rate calculations, introducing bi-annual Work Programmes, extended deadlines for SME supporting document submission.

EDF support to Defence Innovation - EUDIS measures and non-thematic calls

Overall, all Member States are satisfied with the way that the EDF support measures are addressing defence innovation. With specific reference to the set of measures under the 'EU Defence Innovation Scheme' (EUDIS), enabled by the EDF, Member States perceive that they are fit for bolstering EU defence innovation and for enabling civil fertilisation in defence. One Member State noted that innovation was particularly supported in the domain of Sensors, Cyber, Air Defence and Underwater warfare. One Member State noted that innovation was particularly supported in the mine counter measures domain, notably through the 'Miricle' project (EDIDP) and E=MCM (EDF) projects. In relation to EUDIS, most Member States noted that it was too early to provide a definitive assessment but deem overall fit for purpose the introduction of measures targeting defence innovation under the EUDIS umbrella.

- With relation to "Spin-in calls", which aim to favour the uptake of results from civil programmes into the defence domain, one Member State noted that: "*It is vitally important that there will be spin-in calls also in the future*" and called on increasing the annual number of spin-in calls. Another Member State suggested that spin-in calls should have a broader scope for any civil innovation that could be transferred to the defence world. Additionally, one Member State noted that the introduction "Spin-off calls" (from defence to civil sector) could be considered.
- With relation to "Technological challenges", which fund testing environments to address defence-specific problems, one Member State noted that "*Technological challenges in the IT sector create already interesting results in their respective sectors*."

- With relation to Hackathons, one Member State encouraged this measure to be further expanded and another Member State noted that they should be organised earlier to allow more time for applicants to apply.
- With relation to Cascade funding, a Member State noted that the concept could even be explored in a more structural manner for all development actions.
- With relation to SME business coaching services, provided to successful SMEs beneficiaries, one Member State noted: "*SME Business coaching is very helpful for SMEs and start-ups to incrementally advance in the logistic chain and needs pursuing*."

Member States also overall assess that EDF innovation measures had a positive impact in fostering national defence innovation communities.

Effectiveness and set-up of non-thematic open calls for SMEs and calls on disruptive technologies (DIS)

The majority of Member States view non-thematic (NT) calls as very important for the Fund's inclusiveness, as they act as an entry point for new or less experienced entities, and favour competition. Member States, both small and large, overwhelmingly agree that such calls are to be kept every year and included in future funding programmes.

In view of their high degree of competition, Member States generally support the view that more budget should be allocated to NT calls to address issues of good proposals not being funded. Questioned as to whether thematic call texts should better state the need to integrate results from NT projects, Member States welcomed the idea. One Member State noted that a re-submission policy should be introduced to avoid duplicate/recurring submissions every year under NT calls. Asked whether Member States think SME calls should have a more thematic angle (e.g. to be more linked to thematic categories in the EDF work programmes), most were ambivalent to the suggestion. Member States expressed no strong views as to whether there should be an annual alternation between non-thematic disruptive technology calls and non-thematic open SME calls.

Synergies with EDA HEDI and NATO DIANA

Member States agree there is room to further strengthen complementarities with other defence innovation initiatives such as NATO DIANA and EDA's HEDI. Some Member States noted that DIANA and HEDI assignments could be more linked with certain EDF call categories. Other Member States noted that HEDI challenges can offer opportunities to test EDF outcomes or that there should be less limits on the integration of EDA CatB projects into EDF projects.

Integration of Lessons Learned from PADR and EDIDP

Main improvements in EDF based on lessons learned from precursor programmes PADR and EDIDP include:

- The merging of previously separated Research and Development programmes into a single programme.
- An earlier and clearer process of Work Programme preparation.
- An improvement in call text harmonization process.
- The introduction of having "functional requirements" in EDF.
- Better online guidance on proposal preparation for applicants.
- Better structural support measures for SMEs (business coaching, NFP networks, lump-sums for SME calls, matchmaking events, Info Days)
- The introduction of S-CIRCABC as secured exchange platform between Member States and the EC.
- The introduction of the EDF MAP for longer-term planning purposes.

Generally, however, Member States perceive that some key implementation challenges remain similar in EDF compared to PADR and EDIDP, especially related to co-funding (in EDIDP). However, it is noted by virtually all Member States that because the EDF has lasted longer, there has been a more constant learning process among beneficiaries and Member States which in turn has facilitated EDF implementation.

Clarity of call information and use of independent experts

Overall, Member States understand from their industries that information on calls for proposals made available by the European Commission is sufficiently clear. Member States overall assess in a positive light the assistance provided by independent experts for technical and financial evaluation of EDF proposals.

Proposal preparation and GAP identified challenges

At proposal preparation stage, Member States noted the complexities encountered in needing to provide necessary Letters of Intent (LoIs) in time, especially without the necessary visibility over project proposals and more exact co-financing needs from the consortia and among other participating Member States of a consortium. At GAP stage, Member States noted the lack of visibility on project proposals and lack of access to Grant Agreements themselves. In this respect, many Member States requested that participating Member States should as matter of principle access grant agreements. Member States also noted that changes in EU funding amounts to EDF projects during GAP stage compared to when submitted has implications at Member State-level since co-financing amounts need to be re-negotiated.

Memoranda of Understanding

The establishment of Memoranda of Understanding constitutes the primary manner for participating Member States of an EDF project to agree on critical issues such implementing arrangements, user rights, export control, issues related to security framework for information exchange and co-financing. Member States noted that in view of the complexity and sensitivity of aspects to be negotiated, there should be a need for a more guidance from the EC on how to establish a harmonised process or even a common EDF MoU template.

Co-financing

The issue relating to Member States co-financing of development projects was subject to different considerations, being a multipronged issue that presents itself in the early stages of proposal preparation but also materialises itself after submission phase and during implementation project phase. In relation to determining co-financing agreements, Member States noted:

- The inability to access full project proposals hinders the visibility of Member States to understand what results they may obtain through EDF funded actions to begin with. This creates uncertain expectations and an inability to have a clearer co-financing planning between Member States and consortia.
- There is an information gap of co-financing needs that other entities of the consortium ask their respective MoDs.
- Difficulty in calculating the co-financing itself and the modalities of providing co-financing methods (grants vs contracts)

- Co-financing is linked on obtaining from industry forms of access rights or user rights over IPRs developed by the consortia, which is the primary reason for lengthy negotiations in view of their sensitiveness.
- Noted a general lack of guidance in terms of the process needed for associated Member States to reach co-financing agreements among themselves and ambiguities in definitions.

Role of National Project Manager

At project implementation stage Member States/Norway call for clarification of role of the national project manager (PM) and enhancement/facilitation of communication between Member States/Norway and consortia coordinators. One Member State noted the difficulties of a non-lead nation involved in EDF projects to receive information from the consortia through the appointed PM: "*In some cases, an appointed PM provides the rest of the Member States sufficient information on the projects, other times we have no feedback from the PM*." Another Member State noted that the role of PM is key for coherent implementation of EDF development actions. To facilitate also the exchange of project information between PM and rest of Project Board (which manages cofinancing of projects), general access rules should be introduced.

Efficiency of support provided by EDF NFPs

Member States perceive that the support provided by nationally appointed EDF focal points to be very efficient and valuable in both supporting industry and Member States to provide necessary assistance related to EDF call submission processes.

2. FEEDBACK FROM INDUSTRY

2.1 Large Industry

As a key stakeholder group, large entity EDF beneficiaries were consulted through a dedicated workshop (12 September 2024) and through a linked survey. Additional bilateral consultations were held with those entities wishing to further express their views or who had not taken part in the workshop but whose nature or geographical location made having their additional feedback important for a more representative consultation. Entities were selected with the logic of being amongst the top recipients of EDF funding from EDF 2021 and 2022 projects.

Questionnaire Respondents

Entities Invited	**32**
Respondents	10
Response rate	**31%**

Participants to the Workshop

Entities Invited	**32**
Participants	18
Response rate	**56%**

Cross-border partnerships and fostering innovation capacity in the EDTIB

All industrial entities highlighted in workshops and written surveys the importance of EDF in fostering cross-border collaborations and deepening existing partnerships. Entities noted benefits of cross-border collaborations include: cost savings, establishment

of supply chains in Europe, and harmonisation of technical requirements and specifications.

Developing defence R&D Projects that could not happen at national level

60% of respondents to a questionnaire consider that the EDF contributed to realising defence R&D projects that could not have been achieved purely at a national/regional level. One entity noted during a workshop the "pull factor" of EDF for mobilising Member States at very early stages on projects of European interest that, without EDF funding, may not have happened.

Importance of EDF funding support for large entities engaged in R&D activities

On a scale of 1-5, almost half of respondents believe that EDF funding is very essential (score of 5/5) for its research and development activities.

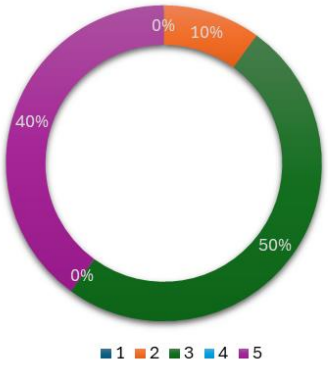


FIGURE 16 – RESPONDENT PERCEPTIONS TO EDF IMPORTANCE IN SUPPORTING COMPANY R&D ACTITIVIES

Continued interest programme

While industry beneficiaries expressed their increasing interest in responding to EDF calls (with 90% of questionnaire respondents noting that their interest in EDF is either increasing or stable), several entities noted that interest may decrease if Member States do not follow through with commitments on co-financing. Entities pointed out the recurring delays experienced in obtaining the necessary co-financing contracts by respective Member States under EDF development actions. Moreover, beneficiaries emphasized the need for collaborative procurement of capabilities if results from EDF projects are to become commercially viable and have an uptake in the armed forces to fill capability gaps.

IPRs

Industry underlined the fact that future procurement of R&D products from EDF depends heavily on IPR implications. Two recurring highlighted issues on IPRs are that, firstly, it is often difficult to separate IPRs among different entities from different countries of a consortium and, secondly, that the sharing of IPRs among Member States, as determined in MoUs, may contradict the IPR distributions taken previously at consortium agreement level on a workshare/cost share basis. 80% of respondents to a questionnaire stated that their EDF project is expected to generate (or has actually generated) patents or Intellectual Property Rights (IPRs).

Increase in budget and budget split

Different entities also noted that EDF overall budget envelope is not sufficient, especially if the intent is to carry on development projects at higher TRLs in the future. Several

entities have suggested that a future defence R&D programme should be endowed with a financial envelope at least equivalent, if not higher than, the EUR 13 billion budget foreseen in the original Commission legislative proposal for the establishment of the EDF.

Do you consider that the EDF budget is adequate, considering the current geopolitical environment and its possible evolution in the future?

Budget should be increased	1
Budget should be significantly increased	8
Budget should stay the same	1
Total	**10**

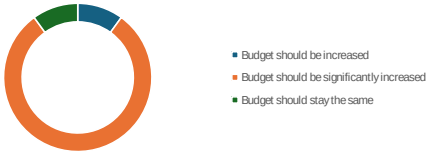


FIGURE 17 - RESPONDENT PERCEPTIONS ON THE ADEQUACY OF EDF BUDGET

Do you have any views on the current EDF budget split of 1/3 for Research and 2/3 for Development actions?

Share of budget for research actions should be increased	3
Budget split should stay the same	5
No reply	1
Total	**9**

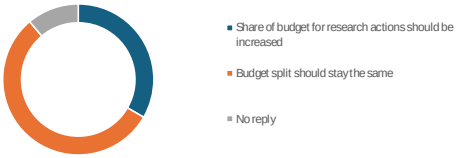


FIGURE 18 - RESPONDENT PERCEPTIONS ON THE ADEQUACY OF EDF BUDGET SPLIT

Reducing Duplications and Increasing standardisation

Entities positively noted EDF's efforts to reduce duplications although uncertainty persists in the defence community as to what the intended goal of 'reducing duplications' should be - not all view the reduction in the number of defence systems in the EU as the way to reduce duplications but rather improving the interoperability of multiple systems. In response to the question on to what extent did the EDF contribute so far to "reducing the risk of duplication of defence products and technologies", respondents gave an average score of 3 (on a scale of 1-5). In response to the question on to what extent did the EDF contribute so far to "increasing standardisation in products and capabilities to ensure greater interoperability", respondents gave an average score of 3.7 (on a scale of 1-5).

Addressing capability gaps at EU and national level

Large industry was also asked questions about their perception on how the EDF was contributing to address EU or national capability gaps. In response to the question on to what extent did the EDF contribute so far to "addressing defence capability gaps identified at EU or national level", respondents gave an average score of 4.2 (on a scale of 1-5), referring to a strong increase.

'SME Bonus' and SME Status

Industry beneficiaries noted that the increased funding rate provided by the EDF regulation for cross-border collaboration (so called 'SME bonus') is effective in attracting SMEs in defence R&D consortia. However, many entities that have acted as industrial coordinators of EDF projects have noted that this has led to the formation of large consortia that often hinders the ability to efficiently manage projects and their subsequent development phases. Entities have also noted that the changes in SME status during GAP process carries at times significant challenges for industry in development actions as this alters eligible costs foreseen at proposal stage, which in turn leads to re-negotiations of Member States co-financing.

Did, in your view, the EDF bonus system incentivise SME participation in the EDF?

Yes	8
No	1
TOTAL	**9**

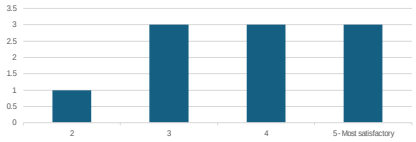
FIGURE 19 - RESPONDENT PERCEPTIONS ON THE SME BONUS SYSTEM

Submission Process

EDF call submission processes and required documentation is generally well understood by large industry (average score of 3.8 out of 5), especially after full three-year cycles of implementation. Large industry has noted that a primary problem for the submission of proposals relates to having necessary LoIs and co-financing declarations agreed and in place by the submission deadline. Entities have expressed a need for greater synchronisation of provisions and timelines between Member States and EDF industrial consortia which currently happens on an ad hoc basis with each entity following different national processes, often in tight timelines.

18. How do you perceive the clarity of the information and guidance relating to the submission forms and submission process (this includes the information and guidance inside the call documentation and submission forms, as well as the information in EDF info days,

2	1
3	3
4	3
5 - Most satisfactory	3
Total	**10**



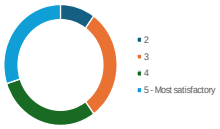


FIGURE 20 - RESPONDENT PERCEPTIONS ON THE EDF SUBMISSION FORMS AND PROCESS

Feedback on EDF outreach activities

EDF Info Days and tutorials offered by DG DEFIS have been mentioned as being highly useful to familiarise entities with the EDF application processes.

How useful do you find the following EDF outreach and support activities?: EU and national EDF Info Days

1 - Least useful	0
2	0
3	0
4	1
5 - Most useful	8
Total	**9**

FIGURE 21 - RESPONDENT FEEDBACK ON EDF OUTREACH AND SUPPORT ACTIVITIES

Project Continuity

80% of respondents to a questionnaire which were either a PADR or EDIDP beneficiary stated that the products/technologies developed under EDIDP/PADR have partially or fully continued thanks to the EDF, therefore advancing the industrial lifecycle of R&D products. Examples of successfully transitioned projects from EDIDP to EDF that have been explicitly mentioned include: SEA DEFENCE, E-CUAS, EUDAAS2, ODIN's EYE II, and E=MCM.

Improvements from PADR/EDIDP for project implementation

Industry beneficiaries noted several improvements from PADR/EDIDP, including the move to a digital submission platform and the introduction of actual indirect costs methodology (unique to the EDF programme). Generally speaking, entities believe that EDF implementation is smoother both in terms of the indirect and direct management modalities.

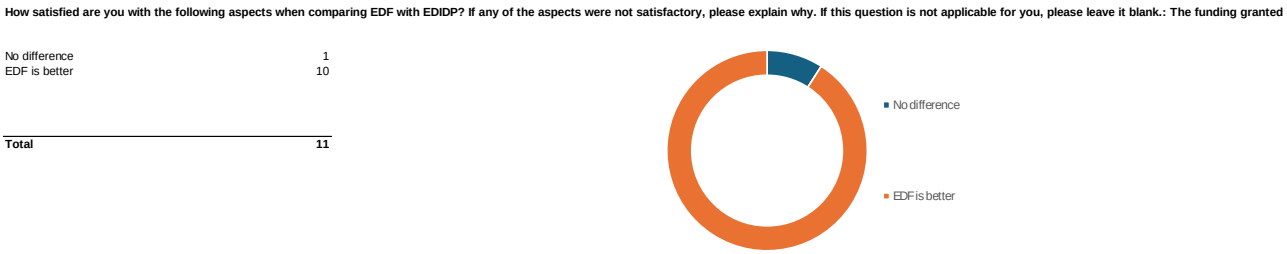


FIGURE 22 - RESPONDENT PERCEPTIONS ON IMPROVEMENTS OF EDF COMPARED TO EDIDP RELATED TO FUNDING GRANTED

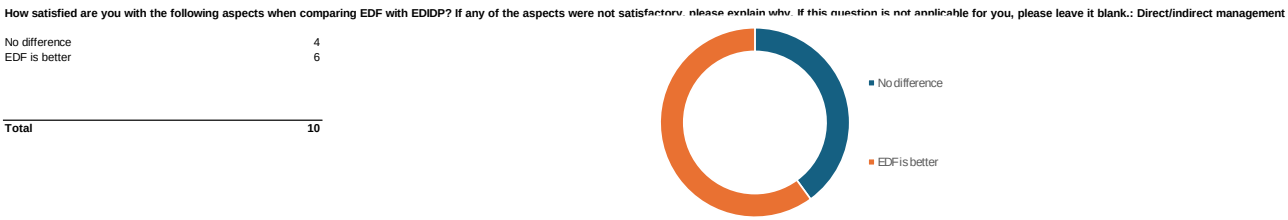


FIGURE 23 - RESPONDENT PERCEPTIONS ON IMPROVEMENTS OF EDF COMPARED TO EDIDP RELATED TO MANAGEMENT TYPES

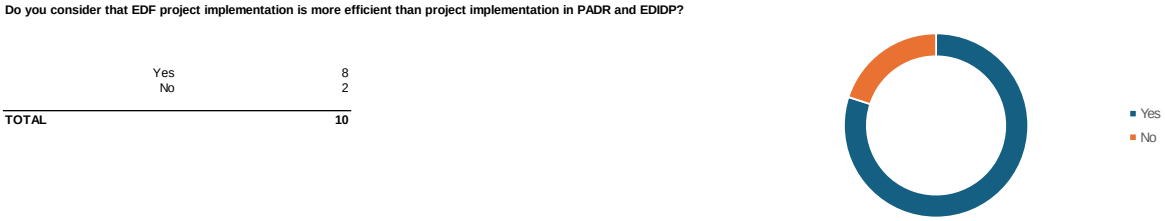


FIGURE 24 - RESPONDENT PERCEPTIONS ON IMPROVEMENTS OF EDF COMPARED TO EDIDP IN TERMS OF PROJECT IMPLEMENTATION

Clarity of Long-term programming from industry perspective

Entities perceive that EDF generally does not provide the necessary long-term planning clarity for industry (average scores of 2.9 out 5 were given in response to a questionnaire). The EDF Multiannual Perspective (MAP) is perceived as a welcome novelty for large industry that helps to give industry more clarity on future funding areas, as also inferred from questionnaire replies. However, entities have noted that the MAP could include more detailed technological roadmaps. To help with greater predictability and to better prepare proposals, some entities have noted that gaining access to publicly releasable EDF annual Work Programme drafts (before official publication) would help even more with predictability.

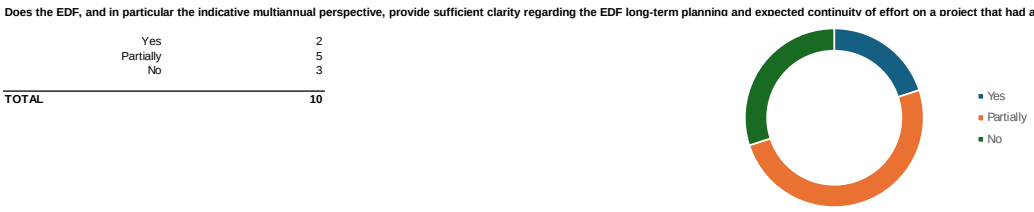


FIGURE 25 - RESPONDENT PERCEPTIONS ON CLARITY OF THE EDF MAP IN PROVIDING PROJECT CONTINUITY

Procurement

To gain insights as to whether EDF/EDIDP/PADR project related results were on their way of seeing forms of procurement from armed forces, affirmative responses to a question on this topic revealed that there are signs of either ongoing negotiations with end-users or expected commercial procurement of project results. Those that did not respond affirmatively noted that this was because projects have not yet reached the necessary level of maturity needed for procurement.

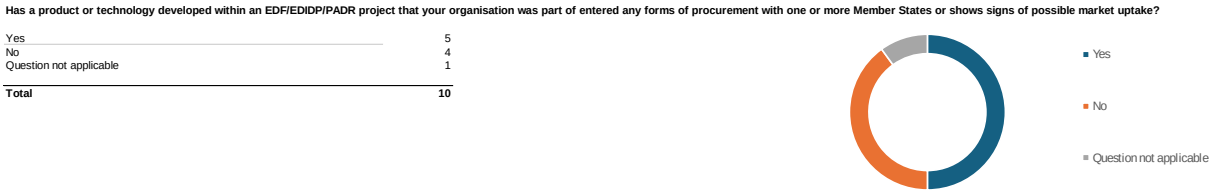


FIGURE 26 - RESPONDENT FEEDBACK ON SIGNS OF POSSIBLE PROCUREMENT OF RESULTS DEVELOPED THROUGH EDF, EDIDP OR PADR

2.2 *SMEs, Mid-cap and RTOs*

SME, Mid-Cap and RTO entity beneficiaries were consulted through a dedicated workshop (18 September 2024) and through a linked survey. Entities were selected with the logic of ensuring the most representative pool by geographical balance.

Questionnaire Respondents	
Entities Invited	**52**
Respondents	8
Response rate	**15%**

Participants to the Workshop	
Entities Invited	**52**
Participants	18
Response rate	**35%**

Benefits of participating in the EDF for smaller players

Entities underlined that the main benefits of participating in the EDF and drivers of their participation include being able to externalise costs of developing new technologies; gain future expected competitiveness by being part of next-gen defence capability projects; have a better pulse on EU defence ecosystem as a whole; enable business development and growth; develop excellent partnerships with new entities across the EU and extended networking in the EDTIB, and helping to build stronger partnerships with their national Ministries of Defence (MoDs). Moreover, all small entity respondents noted that generally the EDF is fostering the opening of supply chains.

FIGURE 27 - RESPONDENT PERCEPTIONS ON EDF CONTRIBUTION TOWARDS OPENING SUPPLY CHAINS IN THE EDTIB

Growing Interest of SME participation in the programme

Most noted that their interest towards the programme is increasing and even those that played a role as EDIDP consortia coordinators would do it again, despite the steep learning curve. One participant suggested to look at means to increase the support capacity of MoDs and the EDF National Focal Point (NFP), as well as to ease or further compensate the workload of the coordinator.

Comparisons between EDF and Horizon Europe programme

Asked how the EDF programme compares to Horizon Europe in terms of project implementation and application procedures, entities noted that EDF participation requirements are certainly higher, timelines for applying are more intense and barriers to entry higher. However, entities perceive that this difference is justified considering the nature of the programme requiring to produce defence capabilities and systems for armed forces. Some also noted that contrary to the EDF, Horizon Europe draft call content is publicly available ahead of the final call release and that cost reallocations between cost categories seems easier than in the EDF. The FFPA model (as used for CBRN) or the thematic of protection of critical infrastructure were mentioned as possible ways to ease establishment of smart synergies with civil R&D programmes in a dual-use perspective.

Importance of EDF funding support for small entities engaged in R&D activities

Small entity beneficiaries have noted that EDF funding clearly supports bolstering the R&D activities and capacities of their company. Respondents to the question "*to what extent did the EDF contribute so far to increasing attraction of alternative sources of funding for your organization*" gave a score of 3.4 out of 5. Respondents to the question "*to what extent did the EDF contribute so far to increasing organisational growth*", gave a score of 3.5 out of 5. For some small entities, the annual R&D funding from the EDF exceeds 15% and for some even more than 75% of their annual R&D funding.

FIGURE 28 - RESPONDENT FEEDBACK ON DEGREE TO WHICH EDF FUNDING CONTRIBUTES TO OVERALL ANNUAL R&D FUNDING

SME and Mid-Cap bonus and Award criteria

Asked about the perceived effects of the EDF's cross-border "SME and Mid-Cap bonus system", 90% of targeted entities noted that the bonus system was an effective incentive to boost their participation in the EDF programme. One SME respondent noted that: "*Without bonus we would not apply; we cannot fund ourselves innovation and need 100% funding rates"*. One respondent also noted that: "*evaluation criteria based on inclusion of SMEs and midcaps play a decisive role in integration*". One participant noted the idea that there could be a bonus for newcomers (new entities) or even a bonus to towards the inclusion in consortia of entities that participated in PADR or EDIDP projects.

Did, in your view, the EDF bonus system incentivise SME participation in the EDF?

Yes	8
No	1
TOTAL	**9**

Did, in your view, the award criteria incentivise SME and mid-cap participation in the EDF?

Yes	6
No	3
TOTAL	**9**

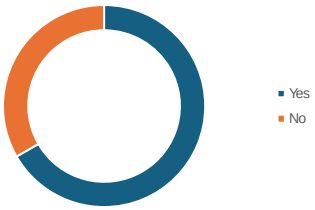


FIGURE 29 - RESPONDENT PERCEPTIONS ON UTILITY OF SME BONUS IN ATTRACTING PARTICIPATION TO THE EDF

Thematic vs Non-thematic calls

Entities noted that despite the fact that non-thematic calls have lower success rates, they are an essential way to develop targeted innovative products - without necessarily being attached to large companies. An RTO also noted during a workshop that, by their nature, non-thematic calls facilitate SME engagement. However, small entities believe that thematic calls are equally important to ensure their participation in EDF development actions at higher TRL levels.

Do you have any views whether thematic or non-thematic calls provided more opportunities for your organisation to participate in EDF projects.

Thematic calls more important	1
Non-thematic calls more imporant	1
Both are important	7
TOTAL	**9**

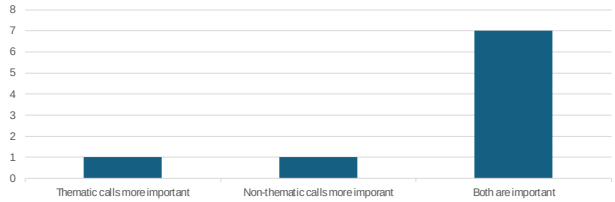


FIGURE 30 - RESPONDENT PERCEPTIONS ON IMPACT OF THEMATIC VS NON-THEMATIC EDF CALLS ON PARTICIPATION

Co-financing challenges

Entities noted that in EDF development actions, beneficiaries often find themselves in a situation of not knowing whether the MoDs are going to provide necessary co-funding, an uncertainty which is difficult for SMEs. Entities explained that each consortia member individually initiates discussions with corresponding MoDs on co-financing with often different deadlines and procedures. One RTO noted that at times consortia participants even have no direct contacts with MoDs. Another RTO noted that where no co-funding

was announced this has led beneficiaries to change their roles into becoming sub-contractors.

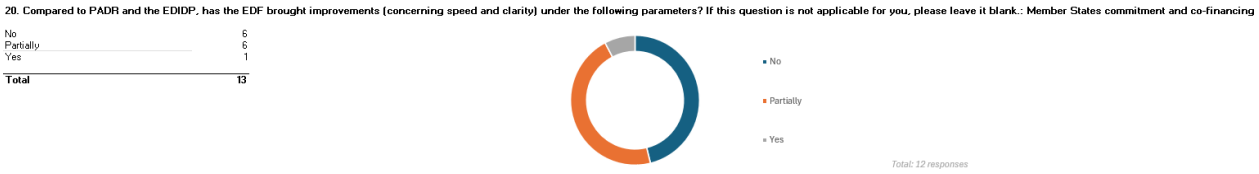


FIGURE 31- RESPONDENT PERCEPTIONS ON IMPROVEMENTS BROUGHT BY THE EDF IN TERMS OF MEMBER STATE COMMITMENTS AND CO-FINANCING

Continuity on follow-up calls

Entities noted that the Commission should play a bigger role in ensuring project continuity. One Mid-Cap noted that *"too many projects would have deserved to be continued, but due to a lack of planning they ended up being lost or stuck at a too low development phase."* As another example brought to light during workshop discussions, one participant noted that cases where the "phase 2" of an R&D project was awarded to a consortium different from that which worked on "phase 1", this will lead to a loss in know-how but also to complications in sharing IPRs and results generated from "phase 1". On the other side, for some critical high-end technologies or capabilities (e.g. hypersonic vehicles), one RTO mentioned that it is important that all relevant players are in the EDF supported follow-up project(s).

Dedicated SME support measures and Outreach Activities

Small and medium-sized entities consulted perceive in a generally positive way the dedicated SME support instruments put in place by the EDF in order to support their integration of smaller entities in the programme. Even if at an early stage of programme implementation, these entities noted that the EDF contributes to a good extent in fostering innovation capacity within companies. Respondent to a questionnaire gave an average score of 3.7 out of 5 to a question related to this. Smaller entities, often more engaged in the civil domain, generally welcome the introduction of spin-in calls in EDF Work Programme.

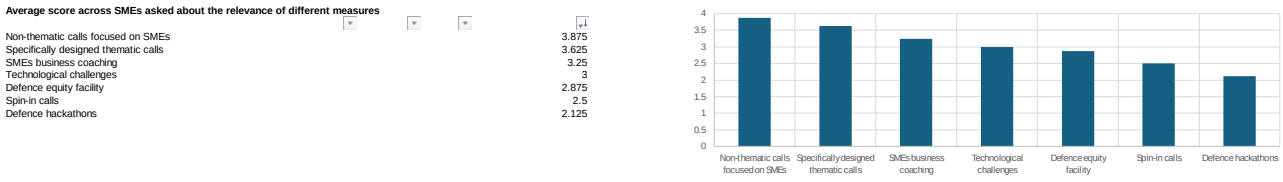


FIGURE 32 – RESPONDENT PERCEPTIONS ON THE RELEVANCE OF DIFFERENT EUDIS MEASURES

Small entity beneficiaries have also noted that the outreach support activities that DG DEFIS has put in place to promote the attractiveness of the Fund (through European and National EDF Info Days, participation to defence exhibitions and tech/start-up events) is of very high relevance and usefulness. Respondents to the question "*How useful do you find the following EDF outreach and support activities (EU and national EDF Info Days)*", gave an average score of 4.9 out of 5.

IPRs and User/Access Rights

Entities noted that finding agreements on IPR access rights or user rights remains a complex issue to resolve and which often is the cause of delays for the finalisation of MoUs among participating Member States. It is noted that some MoDs make their financial support contingent to accessing results whereas grants are often not the best suited instruments for that.

Procurement of results from successful projects

Some small entities noted that despite solutions developed under EDF/EDIDP/PADR are highly recognised by the end users, procurement contracts have not yet reached them, often due to limited budget in MoDs or due to other prioritisations. A Mid-Cap noted that EDF is still a new concept for procurement agencies and not yet fully understood. One RTO noted that they instead have seen signs of procurement or market uptake from its MoD.

2.3 Commission Expert Group on Policies and Programmes relevant to EU Space, Defence and Aeronautics Industry – Sub-Group Defence

In light of the EDF interim evaluation exercise, DG DEFIS consulted the Commission Expert Group on Policies and Programmes relevant to EU Space, Defence and Aeronautics Industry - Sub-Group Defence, to deliver advice, recommendations and lessons learned on the European Defence Fund. The group is composed of around 60 members coming from manufacturing companies, SMEs, start-ups, associations and research institutes. Together, they jointly formulated and delivered to DG DEFIS a comprehensive report on the EDF interim evaluation. The full report can be accessed here.

2.4 Non-Beneficiaries of the Fund

In order to explore the reasons for which why certain entities of the European defence industrial community never decided to participate nor apply to the Fund, a targeted questionnaire was launched to 108 entities. Despite the low response rates to the questionnaire some relevant input from SMEs and Mid-Caps could be collected.

Respondents noted that reasons for not applying to EDF were generally related to not being familiar with the funding opportunities offered nor the application modalities. Respondents also noted that clearer information about call topics and longer-term objectives of the Fund could be a reason for them to apply for the future. One respondent noted that the Fund is not attractive to companies that are into mass manufacturing/production or who are specialised in niche collaborations with existing primes. In response to the question: *"What do you see as the biggest added value in having a Fund at EU level to support collaborative defence R&D?"* all replied that it is the greater diversity of opportunities and larger pool of resources available.

3. FEEDBACK FROM ACADEMIA AND THINK-TANKS

Experts coming from think-tanks and relevant academia were consulted through a dedicated workshop (26 September 2024) to help gather more reflective observations on the programme. Entities were selected with the logic of ensuring the most representative pool by geographical balance.

Participants to Workshop

Entities invited	**24**
Entities attended	17
Participation rate	**71%**

Relevance of EDF

Think-tanks and the academic community consensually view the EDF as being a relevant programme and even a "groundbreaking" tool for strengthening the EU's defence architecture and bolstering EU strategic autonomy. In light of the Russian aggression of Ukraine, all noted that having the EDF is certainly all the more important now. Many noted that the EDF was conceived in peace-time setting focused on prioritising industrial cooperation as an "end in itself". In suggesting how the EDF could become more "relevant" for the current security landscape, some noted that a future programme should think about how it can more directly support high TRL capabilities to fill short-term needs (such as in Air Defence or anti-drone technologies), without compromising longer-term R&D. One participant suggested that requirements for EDF projects should be to demonstrate their combat-ready use, including via field-experimentations in Ukraine-like scenarios. Another think-tank expressed the view that to make the EDF more relevant it could open R&D to the US, UK or Asian partners to increase interoperability outcomes.

Positive impact of the EDF

Several mentioned that the cooperation model designed in the EDF is certainly adequate in stimulating and generating new cross border collaborative consortia, far beyond the minimum requirements of the Regulation. A participant which has also been EDF beneficiaries noted that the EDF has contributed to a "Europeanisation of EDTIB" in its country. A university representative noted that the EDF is also gaining resonance in communities previously not interested in defence (like universities). In a similar vein, a think-tank noted that EDF enables new players to join the game. One University mentioned example of a truly successful cooperation in the space domain through the EDF is EMISSARY project (building on precursor EDIDP projects Sauron and Integral), which has created in record speed a military Command and Control (C2) software for Space Situational Awareness (SSA). Think-tanks view positively the EDF funding support in having indirectly stimulated the advancement of some PESCO projects, for example EPC or TWISTER, which otherwise may have never been kicked-off.

With regards to fostering civil-defence synergies, one think-tank noted that many of the companies involved in EDF projects are also involved in EU civil R&D projects.: "*They*

are working on technologies related to cyber, AI, quantum, sensors, hybrid engines, propulsion systems, for example. We can also see partners on a civil R&D project working together on EDF projects, with the aim of developing a dedicated defence application. This illustrates the synergies and complementarities between these two European R&D funding instruments, and the ability of certain industrial players and research centres to get involved in the two programmes (H2020/Horizon Europe + EDF)."

Promoting fast-track innovation and procurement

Discussions from the workshop also revolved around wider reflections on how the EDF could enable "fast-track" innovations to support ready deployment of small equipment. Think-tanks noted that the rigid certification system to enable the commercialisation of defence products, as well as the outdated and lengthy national procurement system would need to change first if this were to materialise. The success of this "fast-track" model would also be contingent on having very close involvement of end-users, meaning the actual armed forces and not just MoDs or procurement agencies. Think-tanks noted that the EDF can be seen to prepare the ground for future procurement but in a unique and unprecedented way through the lever of co-financing – which can trigger a new way for how Member States go about procuring defence R&D results.

4. FEEDBACK FROM EDF NATIONAL FOCAL POINTS

The EDF National Focal Points are nominated by EU Member States and Norway and are supported by national structures established under the responsibility and control of the Member States and Norway. In view of their direct involvement in the EDF programme implementation, a targeted questionnaire was sent to them.

In their feedback, NFPs mentioned that they actively engage in a variety of promotional activities, hosting up to 20 EDF-specific events annually. These events frequently include national EDF Info Days, (online) seminars and workshops, and matchmaking events, which have proven to be highly effective in raising awareness and interest in the EDF. The information provided during these events are also perceived the most successful method to encourage SMEs to participate in the EDF. Moreover, NFPs note that industry appreciates the networking opportunities these events provide by bringing stakeholders together. As finding partners is the dominant challenge for applicants, the work of NFPs thus substantially contributes to facilitating the interaction among entities.

Applicants also frequently approach NFPs for questions centered around governmental supporting documents (such as the LoI and national guarantees). Their suggestions to smoothen the application process largely focus on two themes:

- Facilitating the application process, by – for example – simplifying templates and providing detailed guidance on the process;
- Improving applicants' ability to sufficiently prepare, e.g. by stabilizing timelines, providing greater transparency about the criteria, and providing multiannual perspectives.

Other contributions had recommendations on how to improve the process for beneficiaries. The suggestions offered largely centred around:

- Speeding up the financing (e.g. by offering calls for proposals with fast funding or accelerating the governmental co-financing process);
- Organizing follow-up calls and actions in such a way that previously successful applicants can continuously work on their project without risking (not winning) new open application procedures halfway through;

- Improving cooperation with MoDs to ensure a timely finalization of the MoU/IA and/or facilitate the planning of follow-up development actions or national development activities.

Although increased interoperability and standardisation are foreseen in the call texts, contributions emphasize it is still too early to assess the real-life results of EDF in these domains. All the projects are still ongoing, with the few examples provided by NFPs either not yet reaching the market (FAMOUS) or not being part of the EDF (CBRN SaaS).

5. OTHER EUROPEAN COMMISSION DIRECTORATES-GENERAL AND SERVICES

In the context of the fourth Inter Service Group meeting, a questionnaire was circulated to DG's to seek inputs on the perceived synergies of the EDF with other Commission programmes and initiatives. Respondents noted that there are several EDF categories of action (project areas) or projects that contribute to meet important challenges in fields relevant to other programmes of the European Commission. Several EDIDP and EDF projects were identified that contribute to creating operational synergies, for instance with Horizon Europe Clusters 3, 4 and 5. A number of projects were also identified on the detection and deterrence of threats to underwater and offshore infrastructure. Respondents view positively the introduction of "spin-in calls" in the EDF to enable civil-defence fertilization. One respondent encouraged to consider introducing "spin-off calls" in the EDF to allow further opportunities for operational synergies. Generally, respondents noted that there is space for further synergies between EDF and civil R&D programmes (such as Horizon Europe), while more synergies are being currently exploited compared to PADR and EDIDP.

6. INSTITUTIONS - EEAS/EUMS, EDA, OCCAR, NATO

The EEAS/EUMS, EDA, NATO, OCCAR were consulted through ad-hoc bilateral meetings and linked questionnaires/discussion notes. The organisations were selected for consultation considering they are actors either directly involved in the implementation of the EDF programme or whose views on EU defence industrial initiatives and programmes are particularly relevant.

EEAS/EUMS

The EEAS and EUMS have been involved in the EDF interim evaluation process since the onset as members of the dedicated Inter Service Group. The EEAS/EUMS provided additional inputs via two position papers and through a bilateral meeting with DG DEFIS. From a policy perspective, the EEAS/EUMS input for the interim evaluation of the EDF focused on the aspect of "coherence" to assess the extent to which EDF is aligned with the other EU defence initiatives and overarching CFSP goals. In this respect, the relevance of the EDF as an instrument to jointly develop next generation military capabilities and investments in technological innovation for defence was stressed. From a military perspective, input regarded how EDF programming is contributing to addressing capability priorities commonly agreed by Member States, in particular in the context of the CDP. The EUMS assessed that the EDF has helped to address some critical capability shortfalls (CCSF) of EU Member States. The EEAS/EUMS noted also that there is a need to better clarify the way the links between the various EDF proposals claiming to be

related to PESCO projects (and eventually benefiting from the PESCO bonus) are established. EEAS also noted the importance of ensuring ways for increased and more structured participation of Ukrainian defence industry entities in programmes such as the EDF.

European Defence Agency (EDA)

EDA was a key stakeholder consulted through bilateral meetings and a dedicated questionnaire. EDA shared its views from both a programming and implementation perspective, as an entrusted entity for the indirect management of EDF projects. From the programming angle, EDA recommended DG DEFIS to make further use of EDA priority-setting tools which are in line with the CDP. EDA recommended how to improve the determination of EDF project links to a PESCO project. From the implementation angle, EDA staff noted a very positive outlook on EDF indirect management in particular compared to precursor programmes, highlighting a good cooperation with DEFIS. EDA management expressed a strong satisfaction related to DEFIS-EDA cooperation on defence innovation. EDA made recommendations on how to better ensure Member State co-financing and a more efficient project result dissemination and these implementation points will be further explored in EDF Programme Committees.

Organisation for Joint Armament Cooperation (OCCAR)

The Organisation for Joint Armament Cooperation (OCCAR) staff was consulted through a dedicated written questionnaire and a bilateral meeting with DG DEFIS. Collecting OCCAR's views was important as it acts as an entrusted entity of the EDF programme, implementing several projects in indirect management, including two EDIDP projects – MALE RPAS and ESSOR. Consultations noted OCCAR's satisfaction in cooperating with DG DEFIS and noted there have been improvements since the EDIDP in terms of project implementation. The setting up of a Financial Framework Partnership Agreement (FFPA) in 2024 to simplify and synchronize processes for transferring the implementation of EU defence projects under indirect management to OCCAR was noted as an example of such progress. OCCAR generally noted the importance of increasing the connection of EDF projects with end-users in a capability-driven and procurement-oriented logic. It was also noted that OCCAR's expected management of EDF projects could be better stated in calls for proposals.

North Atlantic Treaty Organisation (NATO)

NATO staff was consulted through a bilateral meeting. NATO is supportive of the EDF as an instrument which is perceived to be of support to NATO Allies. NATO noted its commitment to continue working together with the European Commission in this respect. Discussions revealed that programming methodologies between the NDPP and EDF differ and that it would be beneficial to have a stronger information exchange on funding priorities. Technologies developed through some EDF projects have been used in NATO live training exercises, illustrating that operational synergies are beginning to take shape. NATO noted that DIANA and EUDIS are complementary tools that can address key dual-use solutions in the field of defence innovation. Potentially, increased synergies could be found by engaging in joint testing campaigns of particular new technologies developed under both initiatives.

7. FEEDBACK FROM ENDR AND REGIONAL ORGANISATIONS

DG DEFIS also gathered views of regional stakeholders. This included contacting regional public authorities and regional defence industrial clusters through the European Network of Defence-Related Regions (ENDR), a network managed by DG DEFIS and composed of around 60 Members. DG DEFIS wanted to also hear the views of three relevant regional organizations with a stake in defence policy matters. Two targeted questionnaires were launched.

Questionnaire Respondents ENDR	
Entities Invited	61
Respondents	8
Response rate	**13%**

Questionnaire Respondents Regional Organisations	
Entities Invited	3
Respondents	2
Response rate	**66%**

All regional entities were convinced of EDF's positive impact, with the area of greatest impact differing across submissions. A majority view that the EDF has facilitated greater regional cooperation on defence R&D and strengthened these industrial collaborations. Furthermore, half of the organizations believe EDF has strengthened existing cooperation at the regional level within local defence clusters.

Regional entities held divergent perceptions of EDF's alignment with other initiatives, including those in their own region. A slight majority felt that the EDF and regional initiatives were mostly complementary. By contrast, entities most frequently experienced a need for greater alignment with national initiatives and funding programmes. The alignment between EDF and other EU initiatives could similarly be improved in the future.

To continue building upon EDF's positive impact, several – but not all – contributors suggested areas of improvements. These covered a wide scope: from increasing continuity and budget to supporting Member States in Memorandum of Understanding negotiations. Beyond the need to incorporate SMEs to a greater extent, which was suggested by two separate entities, there was no overlap between organizations' suggestions. This indicates that the challenges facing industry are highly context-dependent and not necessarily inherent to EDF's structure. The vast majority believe the EDF to be sufficiently inclusive, though some regional entities noted that greater attention could be paid to SME's or specific fields (e.g. maintenance).

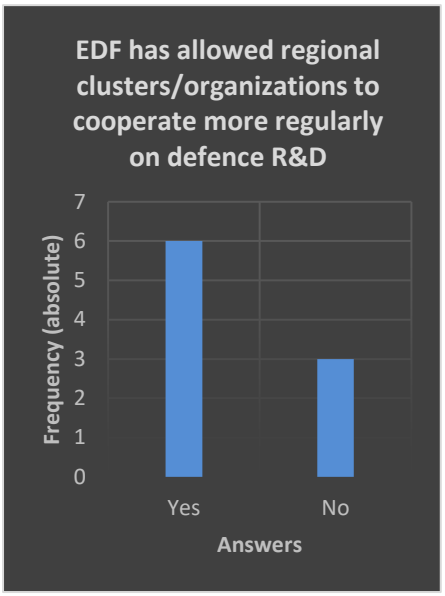


FIGURE 35 - RESPONDENT PERCEPTIONS ON EDF CONTRIBUTION TOWARDS REGIONAL COOPERATION

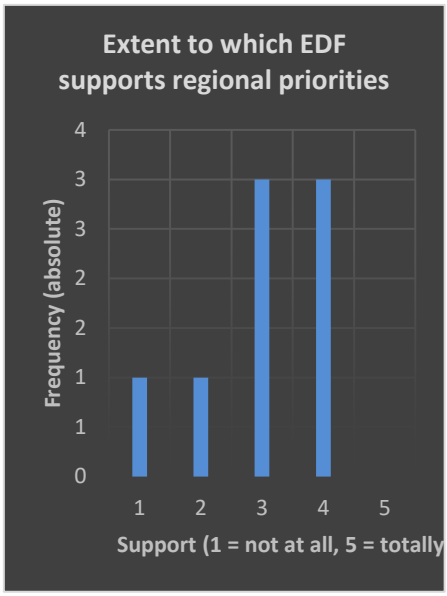


FIGURE 37 RESPONDENT PERCEPTIONS ON EDF ALIGNMENT WITH REGIONAL PRIORITIES

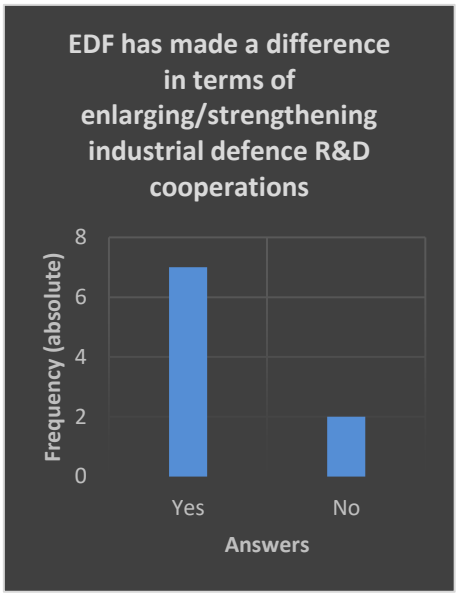


FIGURE 36 - RESPONDENT PERCEPTIONS ON EDF CONTRIBUTION TOWARDS STRENGTHENING DEFENCE R&D COOPERATIONS

8. FEEDBACK FROM THE CALL FOR EVIDENCE (CfE)

To give all stakeholders the possibility to comment the Commission initiated an Open Public Consultation on the EDF in light of the interim evaluation. The CfE was open from 24 January 2024 until 21 February 2024 (as per the 4 weeks mandatory time). The CfE offered a preliminary overview as to the overall positive perception of the EDF amongst the EU defence industrial community, and, at the same time, exposed some of the challenges/areas for improvement regarding the programme's implementation and architecture.

Despite the limited number of responses, contributions came from a wide range of key stakeholders, including: EU industry (Primes, Mid-Caps, and SMEs), Research Organisations, National Defence Industry Associations (NDIAs).

Contributions widely recognise the EDF as an enabler to deepening existing cross border industrial cooperation and as a catalyst for new cross border collaboration. Contributions to a large extent demonstrated that participating in the EDF has enabled the expansion of new quality industrial partnerships at both national and European level. Industry and NDIAs noted that whereas EDF project results are still not visible, companies see in the EDF participation medium-long terms benefits, making them ready to commit to programme despite lacking short-term impacts.

The perception that the EDF tries to push for a continuation of PADR/EDIDP project results through EDF calls is visible and welcomed by industry. However, this continuity is not always synchronised to industry's expectations - a precursor project that is mature enough to move onto the next phase (from Research to Development of from Lower to Higher TRL) under EDF has to wait for appropriate EDF calls to be published, disrupting the industrial R&D cycle. As regards the inclusiveness and attractiveness of the EDF, contributions highlighted the EDF's capacity of attracting a wide pool of entities, including companies that were not active in defence previously. The generation of

inclusive consortia, with the involvement of SMEs, mid-caps, academia and research organisations is viewed very positively by enabling specialised expertise that can bridge knowledge gaps effectively.

The formation of a consortium, the preparation of a proposal and the submission process for an EDF proposal is widely viewed by industry as burdensome and difficult process. An additional source of administrative burden for a consortium, as expressed by contributions from industry, are the lengthy procedures with Member State authorities to obtain co-financing or additional guarantees, which have caused delays at proposal submission stage or during project implementation.

SME and Mid-Cap entities involved in the EDF and precursor programmes noted that managing consortia composed by a large number of entities is considered to be a challenging task (especially for a coordinator). In addition, they perceive that consortia formation is generally a process dominated and led by the big players. Smaller companies stressed that access to information on the EDF and access to national focal points remains challenging and view as important the need to have a permanent matchmaking platform. Industry acknowledged and welcomed the Commission's efforts to commit funding in defence innovation such as through disruptive technology calls and EUDIS measures (spin-in calls).

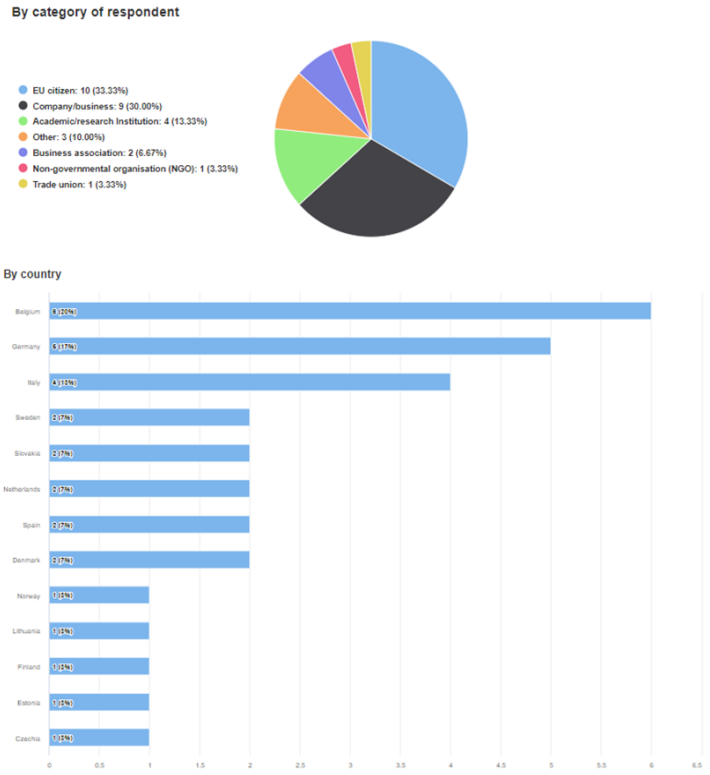
The annual work programme mechanism presents technical and strategic challenges to industry insofar as it creates relatively short times for project proposal preparation (especially as claimed by small entities) and that it does not allow the necessary foresight on the envisioned types of projects under the EDF (as claimed by different primes). The creation of the MAP is welcomed and to be reinforced. Contributions from industry, research organisations and the institutions pointed out that EDF category of actions to have a clearer roadmap for all needed technologies and sub-systems.

Industry has conveyed that the stringent security requirements for exchanging encrypted information among consortium members often hampers project implementation. Similarly, the absence of a regulatory framework that protects intellectual property of results generated from an EDF action (including providing license rights from actions under EDIDP/PADR) is noted in several contributions as bring a potential barrier to the inclusion of new actors in consortium agreements for future EDF projects.

The EDF's added value was made clear by all contributions. Industry (especially primes) highlighted how the EDF facilitates larger projects than could be expected if run solely on national level. According to contributions, the EDF has enabled a better understanding of Member States' future capability needs. EDF programming has contributed to bringing Member States together to discuss and agree on common requirements, financial incentives and the planning of R&D activities, that otherwise would not have been achieved by Member States acting alone. However, industry has often mentioned the limited interaction with end-users, in particular once the project has been launched.

Contributions acknowledge the strategic relevance of the EDF today and in the future as an EU-level cooperative defence R&D funding instrument. Several contributions pointed out the need that a future EDF should incorporate a stronger procurement incentive/pillar to enable the market uptake of R&D projects and enable a stronger link between industry and end-users. The changed security environment after Russian invasion of Ukraine has demonstrated that the EDF is not a "should have" but a "must have" for the Member States, according to a business association.

FIGURE 38 – SUMMARY OF FEEDBACK FROM CALL FOR EVIDENCE. SOURCE: EUROPEAN COMMISSION PORTAL.



ANNEX VI. LESSONS LEARNED FROM PADR AND EDIDP

In line with Article 29 (2)(b), the EDF interim evaluation is expected to include "lessons learned from PADR and EDIDP". Therefore, this section further explains the main improvements and novelties introduced by the EDF building on the lessons learned from PADR and EDIDP. The European Defence Industrial Development Programme (EDIDP) and the Preparatory Action on Defence Research (PADR) represent key EU initiatives aimed at bolstering the European defence industry's competitiveness, efficiency, and innovation capacity. These programmes emerged in response to the increasing costs of defence equipment, coupled with the high risks and financial burdens of research and development (R&D) in the defence sector. Both EDIDP and PADR laid the groundwork for the European Defence Fund (EDF), which has since become the primary instrument for fostering cooperation in defence research and development across EU Member States.

Main improvements and novelties introduced by the EDF building on the lessons learned from PADR and EDIDP

- A single programme for all collaborative defence R&D activities with a single set of participation rules and an annual budget four times bigger than PADR and EDIDP combined.
- Creation of multiannual perspective to provide defence industry and Member States with more clarity on funding priorities (taking into account the recommendations of relevant stakeholders and of the Court of Auditors on precursor programmes).
- Full integration of innovation in the programme and stronger support to SMEs and mid-caps. Creation of EUDIS which provides R&D grants (specifically designed calls, such as: technological challenges, spin-in calls, non-thematic SME calls and disruptive technologies calls), equity instrument implemented by the EIF under InvestEU (Defence Equity Facility) and several innovation support measures such as Defence Hackathons and SME Business Coaching.
- Improvement in call text harmonisation process with national experts.
- A single web portal (Funding and Tenders Portal) for all information and application process and less paperwork to make applications, dedicated tutorials, functional mailbox and programme FAQs.
- Communication and outreach events at national and EU level to explain EDF funding opportunities and application processes (EDF Info Days, National Info Days, NFP network, participation in national defence exhibitions).
- Possibility for beneficiaries to claim actual indirect costs.
- The average time to inform applicants (from submission deadline to the day of announcement of results) compared to precursor programmes was reduced by 27%.
- Ensuring continuity of initiatives launched under the precursor programmes, towards higher TRLs.

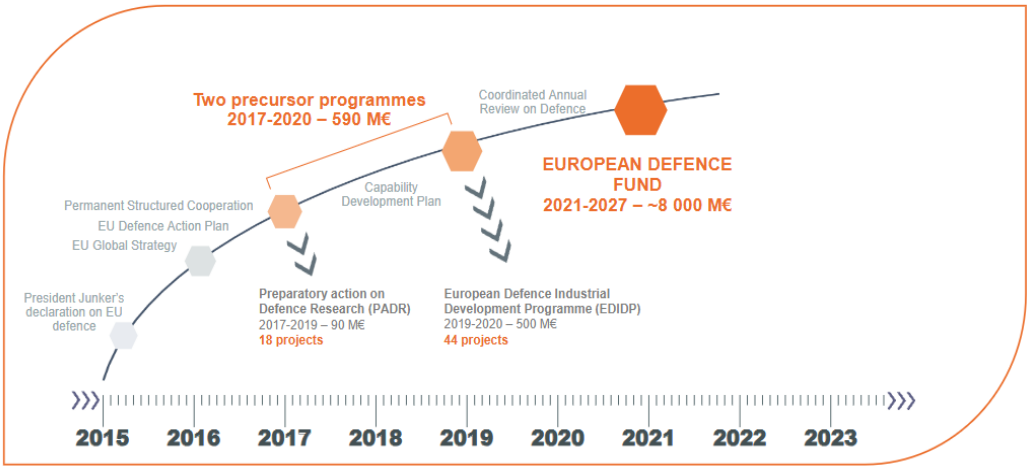
Annex VII further elaborates on the lessons learned from EDIDP by offering a retrospective evaluation of the EDIDP programme.

ANNEX VII. RETROSPECTIVE EVALUATION OF THE EDIDP

INTRODUCTION

This analysis constitutes the retrospective evaluation report of the European Defence Industrial Development Programme (EDIDP), in line with Article 17 of the EDIDP Regulation[170]. The analysis also embeds lessons learned following the years of implementation of EDIDP and, where relevant, also in relation to the Preparatory Action on Defence Research (PADR). EDIDP, with a financial envelope of €500 million for 2019-2020, was the first ever EU programme targeting defence capability development and co-financing the joint development of defence products and technologies. Of the total budget, €200.5 million was allocated in EDIDP 2019 and €291 million in EDIDP 2020[171]. Over the two-year programme duration, the EDIDP has financed 44 development projects. As of February 2025, 20 EDIDP projects have been completed. As outlined in the Multi-annual Financial Framework (2021-2027), both EDIDP and PADR laid the groundwork for the European Defence Fund (EDF), which has since become the primary instrument for fostering cooperation in defence research and development across EU Member States. As such, they are considered "precursor programmes" to the European Defence Fund.

FIGURE 39 – EDIDP AND PADR AS PRECURSORS TO THE EDF



METHODOLOGY AND SCOPE

Scope

This report examines the performance of the EDIDP following the Better Regulation[172] programme evaluation methodology, along the assessment criteria of: *effectiveness*, *efficiency*, *coherence*, *relevance* and *EU added value*. *Effectiveness* analyses the extent to which the aims and objectives of the programme (namely as mentioned under Article 3 and the pre-amble of the EDIDP Regulation) have been met. Elements

[170] Regulation (EU) 2018/1092 of the European Parliament and of the Council of 18 July 2018 establishing the European Defence Industrial Development Programme aiming at supporting the competitiveness and innovation capacity of the Union's defence industry

[171] European Commission, 'European Defence Industrial Development Programme (EDIDP)', n.d., https://defence-industry-space.ec.europa.eu/eu-defence-industry/european-defence-industrial-development-programme-edidp_en.

[172] Better Regulation Guidelines and Toolbox. European Commission. https://commission.europa.eu/law/law-making-process/better-regulation/better-regulation-guidelines-and-toolbox_en

considered include how the programme supported cross-border cooperation between undertakings and between Member States, how it has fostered efficiency and innovation capacity of the defence industry by supporting actions in their development phase, promoting dual-use even de-risking the development phase of cooperative projects. More specific parameters mentioned under Article 17 of the Regulation are considered, such as the degree of cross-border participation of SMEs and mid-caps as well as information on the countries of origin of the beneficiaries. *Efficiency* addresses the spending efficiencies generated by the programme from the angle of how it has enabled the creation of first project results that could then be further leveraged through the EDF, thereby advancing the R&D lifecycle from one funding framework to another. The section also assesses the main lessons identified from EDIDP's implementation (from proposal preparation stage to grant implementation) and provides comparative insights as to how implementation-related improvements from the EDIDP to the EDF programme are perceived by stakeholders. *Coherence* looks at the extent to which EDIDP has addressed funding areas aligned with EU-level defence capability development priority setting instruments and how 'synergistic' EDIDP-funded projects are with other relevant European defence industrial programmes and initiatives (for example as launched under EDA or PESCO framework). *Relevance* and *EU added value* are addressed together to assess the extent to which the EDIDP has acted as a relevant precursor to the EDF and the added-value that the programme has created by making a difference for the EDTIB.

Sources

The evaluation is based on a mixed-methods approach, combining both qualitative and quantitative data collection techniques and open-desk literature, where relevant. The combination of direct stakeholder input and secondary literature provides a robust foundation for assessing the programme.

- **Stakeholder inputs***:* Stakeholder feedback was an important source for the EDIDP analysis with data gathered from targeted interviews, surveys, position papers and workshops (in the context of the EDF interim evaluation). This methodology was designed to capture a range of perspectives, including those of defence industry primes, SMEs, research organisations, and Member State representatives (the same as those targeted for the EDF interim evaluation presented Annex 2). A brief *Synposis Report* of stakeholder views dedicated to the EDIDP programme is presented at the end of this section.
- **External study***:* This analysis also integrates complementary research conducted by an external contractor (Research Piece 6 'Analysis of the EDIDP' and Research Piece 2 'Reduction of Risks' – see Annex II)
- **DEFIS Expert Group – Sub-Group on Defence**: The analysis also considers the input provided by the *DEFIS Expert Group – Sub-Group on Defence* in their dedicated report[173]. This expert group, in its defence configuration, comprises around 60 members including defence companies, research organisations and NGOs. In their advisory role, the group provided input relevant to EDF programme interim evaluation
- **Internal Consultation with DG DEFIS Project Officers**: Project Officers from DG DEFIS implementing the EDIDP projects were also consulted to obtain relevant inputs.

[173] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'.

Main Methodological Limitations

The report assessing the EDIDP retrospective evaluation faces several limitations primarily arising from data constraints and timing issues, which impact the comprehensiveness of its evaluation.

- **Timing Constraints**: As of February 2025, 24 out of 44 projects initiated under the EDIDP remain ongoing. This circumstance presents a significant challenge for conducting an exhaustive retrospective evaluation of the programme. Since many projects have yet to reach completion, it is difficult to assess their full impact and outcomes. The ongoing nature of these projects means that potential long-term benefits or challenges are yet to be fully realized or understood, limiting the ability to draw definitive conclusions at this stage.
- **Data Availability Issues**: The main targeted industry stakeholders were EDF beneficiaries, with only a subset of them having prior experience with the EDIDP. This inherently resulted in a more limited qualitative dataset, restricting the depth of qualitative analysis possible. Furthermore, access to information related to Intellectual Property Rights (IPRs) remains restricted or not available at this stage to the European Commission, despite attempts to gather such data even through the dedicated stakeholder consultations (e.g. in questionnaires or workshops).
- **Conjunctural Analysis Challenges**: A thorough assessment of the EDIDP's performance necessitates a close conjunctural analysis relative to the European Defence Fund (EDF), particularly concerning the uptake of EDIDP results into the EDF framework. Such an analysis is still premature, as outcomes and integrations are only starting to materialize. At the time of writing, only early indications of this integration process were observable, which hinders the ability to fully understand the programme's long-term effectiveness and impact on the EDTIB.

These methodological limitations — ongoing projects that prevent a full retrospective evaluation, limited data from a specific beneficiary group, unavailability of certain critical data, and the nascent stage of result uptake — restrict the report's capacity to offer a comprehensive assessment of the EDIDP.

Brief Synopsis Report – Stakeholder views related to the EDIDP Programme

The stakeholder views on EDIDP, consulted in the context of the EDF interim evaluation process, have provided insights into its achievements and challenges.

Fostering defence cooperation: Large companies and SMEs positively view the EDIDP as an instrument in facilitating cross-border defence collaboration. They noted the programme's importance in enabling new partnerships and strengthening existing ones. Large companies noted the added-value of working in consortia with smaller yet highly innovative companies from different EU countries. SMEs valued the ability to participate in larger defence projects which may not have happened if an EU-level programme such as the EDIDP was not in place.

Project Continuity and Implementation Improvements: Member States noted that certain products and technologies developed under EDIDP have successfully continued and evolved within the EDF framework. Projects such as SEADEFENCE and E-CUAS were explicitly mentioned as successfully transitioning from EDIDP to EDF and this continuity is noted to have contributed to advance product lifecycles. Additionally, industry beneficiaries have noted improvements in the EDF's implementation modalities over EDIDP, particularly with the adoption of a digital submission platform and the introduction of an indirect costs methodology which is considered more optimal for a defence R&D programme.

Implementation Challenges: Industrial stakeholders also noted first co-funding related issues that emerged under the EDIDP. The complexity of setting up Memoranda of Understanding (MoU) to agree on co-financing actions at the Member State level and determining access/user rights to generate results under EDIDP projects was in particularly highlighted as a difficulty by large industry.

Relevance: All stakeholders generally viewed the EDIDP as an important programme that laid the groundwork for the subsequent EDF, which continued to build on the cooperative and integrative efforts initiated under the EDIDP. Consequently, the programme is seen by Industry and Member States alike as highly relevant not only in advancing immediate defence capabilities needs, including strategic enablers, but also in paving the way for a longer-term strategic framework for European defence collaboration and innovation.

EFFECTIVENESS

Fostering cooperation between undertakings (industrial entities), including SMEs and Mid-Caps, and Member States

Through the two rounds of EDIDP calls for proposals it was already possible to observe that there was a significant demand by EU industry to participate in a European collaborative defence development programme. Under EDIDP 2019, nine calls for proposals were published. In response, 40 proposals were submitted, involving a total of 441 entities. Under EDIDP2020, 12 calls for proposals were published. In response, 63 proposals covering all call topics were submitted, involving a total of 717 entities[174]. In

[174] DG DEFIS, European Commission. Data from 2020 and 2021 based on published factsheets, see: https://defence-industry-space.ec.europa.eu/eu-defence-industry/european-defence-industrial-

the call results, announced the year following the publication of the call for proposals, 16 projects were selected under EDIDP 2019 and 26 under EDIDP 2020. Given the 44 proposals selected, this meant that there was an oversubscription rate to the calls of 42%.

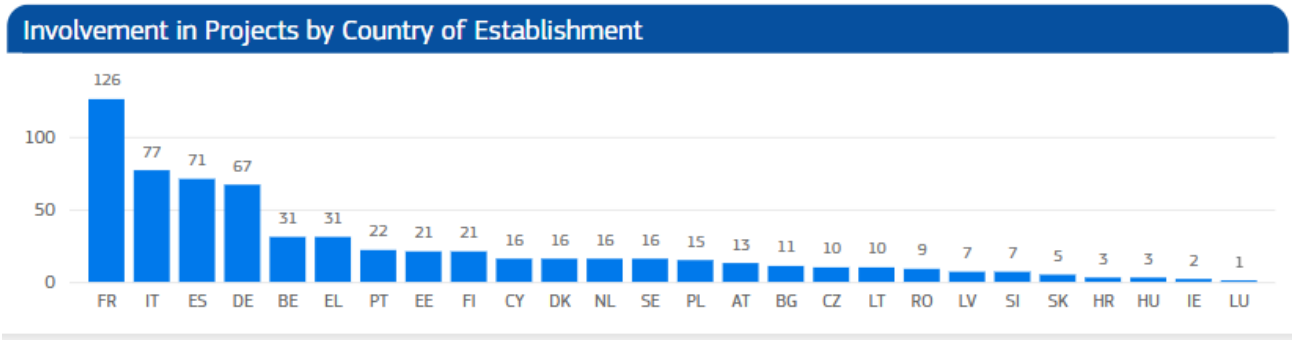


FIGURE 40 - COUNTRIES OF ORIGIN OF THE BENEFICIARIES OF THE EDIDP PROGRAMME

The EDIDP has attracted a vast involvement of industrial entities across the EU generating a clear cooperation effect. Figure 38 further illustrates the distribution of beneficiaries of the EDIDP programme, with 626 participations spanning 26 EU Member States[175]. The requirement of needing consortia formed by a minimum of three entities from three Member States, was also surpassed with an average of 14 entities from seven different countries participating in an EDIDP consortium[176].

The EDIDP programme was also open to the participation of third countries as a derogation and under strict conditions[177], with participation figures demonstrating strong interest in the EDIDP by third-country controlled entities. Third country-controlled entities (without Norway and the United Kingdom) are involved around 25% of EDIDP projects.

The size of the EDIDP budget meant that it could not significantly impact the overall level of defence R&D spending within the EU. However, one of the objectives of EDIDP was to incentivize Member States to cooperate and invest more in defence. EDIDP contributed to this through the token of requiring co-financing for the joint development of defence projects. The period of EDIDP implementation revealed that cumulative co-financing needs for EDIDP projects are of 38%, representing around €309 million. This exemplifies the EDIDP's leverage effect on further mobilising national co-financing efforts to ensure both greater and more effective degrees of public spending.

The EDIDP can be viewed as having played a significant role in fostering increased cross-border cooperation between undertakings. As one study noted, "*(t)he requirement of inclusiveness in the building of consortia has encouraged applicants to look beyond their current networks.*"[178] This point was also made in connection with all types of applicants, including both research organisations and companies[179]. As also noted in the

development-programme-edidp_en. Entities are counted on a proposal basis, some of them participated in multiple ones, leading to double counting.

[175] DG DEFIS, European Commission. *PowerBi*, extracted in February 2025.

[176] DG DEFIS, European Commission. *PowerBi*, extracted in February 2025. Including subcontractors.

[177] See EDIDP Regulation, Article 7.

[178] Frédéric Mauro, Edouard Simon, and Isabel Xavier, 'Review of the Preparatory Action on Defence Research (PADR) and European Defence Industrial Development Programme (EDIDP): Lessons for the Implementation of the European Defence Fund (EDF)' (Directorate General for External Policies of the Union, May 2021), 12.

[179] Mauro, Simon, and Xavier, 12.

analysis performed by the Commission Expert Group, the EDIDP is seen to have initiated several "*excellent*" cross-border collaborations were covering various categories of actions: "*projects falling in the cybersecurity sectors were particularly representative of a successful consolidated collaboration among large companies, which started with the EDIDP precursor programmes and continued in the EDF...*"[180]

SMEs have also particularly benefitted from their involvement in EDIDP projects, as the programme has actively sought to include smaller companies in consortia led by larger defence primes. This has helped to expand the participation and inclusion of SMEs in defence development projects and building a culture of cross-border cooperation between large and small entities[181]. In total, EDIDP has involved 225 SME beneficiaries, receiving approximately 18% of total EU funding, accounting for 36% of total entities involved in the EDIDP[182].

As also noted in the analysis performed by the Commission Expert Group, several EDIDP projects were mentioned as developing consolidated partnerships also involving SMEs such as ESC2 project (European Command and Control (C2) system from strategic to tactical level) in the information sharing domain. In ground vehicles, "*one cooperation among platform manufacturers and system integrators, with the support of mid-caps and SMEs, has started through EDIDP FAMOUS project*."[183] The Commission Expert Group also noted that the PADIC project (Passive Acquisition by DIgital Convergence (EDIDP 2020)) for passive sensing "*is a good example of cross-border cooperation with SMEs having equal workshares in a consortium*".[184] It also noted: "*some SMEs also successfully played the coordinator role in projects like USSPs (Greek SME, ETME) and SIGNAL (project led by a Spanish SME, DAS Photonics*)".[185] Both PADR and EDIDP deeply impacted the level of intra-EU defence cooperation in R&D and provided scaled-up cooperation possibilities between entities that had never collaborated previously. The impact of this knowledge-sharing on the creation and development of technologies and prototypes cannot yet be fully quantified.

Investing in disruptive technologies, defence innovation and encouraging dual-use An explicit focus on funding disruptive technologies for defence was established in PADR with six projects funded with a total allocation of €11.8 million[186]. The focus continued under EDIDP. EDIDP 2019 included a thematic focus on 'Innovative and future-oriented defence solutions' under which three projects were funded, with a total allocation of €10.7 million[187]. The thematic focus was retained under EDIDP2020, and the number of projects funded and the total budget allocated increased. Six projects were funded, with a total allocation of €16.6 million[188]. This means that more projects were

[180] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'.

[181] A position paper received by a Mid-Cap noted that participating in the EDIDP, beyond supporting R&D investments for their range of products, catalysed the creation of partnerships with a large primes and paved the way to present their products to other European MoDs.

[182] DG DEFIS, European Commission. *PowerBi*, extracted in February 2025.

[183] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'.

[184] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'.

[185] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'.

[186] METAMASK, SPINAR, PRIVILEGE, ARTUS, AIDED, OPTIMISE, PILUM, and QUANTAQUEST

[187] DECISMAR, DRONEDGE-E, and OPTISSE

[188] ALTISS, FIIST, P2P-FSO, SIGNAL, TRANSFLYTOR, and VireTS

funded with this thematic focus than any other included in EDIDP2020. Also noteworthy is that these projects have been carried forward as part of projects and calls funded and issued under the EDF. OPTISSE was continued under NEMO in EDIDP2020 and SPIDER under EDF2022. In EDF2024, the call DA-SIMTRAIN-STME-STEP seeks to build upon results produced under FIIST and VireTS.

In line with its aims, the EDIDP has funded projects that also aimed to further advance the development of technologies which have both civilian and defence applications[189]. Projects such as EUDAAS (European detect and avoid system) developed under EDIDP2019 have the potential to be used in both the civilian and military sectors. Civilian air traffic could benefit from the type of detect and avoid capabilities that it is seeking to develop, which would, in turn, support the general adoption and integration of Unmanned Aerial Systems by different sectors. Analogously, in the field of space data processing, EDIDP's PEONEER (persistent Earth observation for actionable intelligence surveillance and reconnaissance) and EDF2021's IntSen2 (Proactive automatic imagery intelligence powered by artificial intelligence exploiting European space assets) have both civilian and military applications.

Supporting actions in their development phase

Successful EDIDP project results being scaled up in the development phase through the EDF at higher TRL levels can also be considered as an indicator of the programme's effectiveness. As explained in a study, two illustrative examples of EDF supported projects that have moved up the TRL scale from its precursor include FIRES and FIRES 2; and JEY-CUAS and E-CUAS[190]. Originally funded under EDIDP 2020, FIRES aimed to develop the next generation 155mm artillery projectiles and rockets. The FIRES project under EDIDP 2020 involved tasks at a TRL of 1 to 3. Its continuation, FIRES2, has expanded to include activities up to TRL 6. In the case JEY-CAUS, also funded through EDIDP 2020, the purpose of the project was to pave the way for the development of a joint European Counter Unmanned Air Systems capability at a TRL between 1 and 3. E-CUAS, selected under EDF 2023 moves the project up to TRL 7. ADEQUADE, E-CUAS, FIRES2, THEMA and TALOS-TWO are other examples that have been awarded at higher TRL levels. Based on selected projects in EDF 2022 and EDF 2023, roughly one-third of all projects involve activities that are higher on the TRL scale. These activities include prototyping, testing, and qualification which are typically ranked from 4 to 7 on the TRL scale.

De-risking investments in defence capability development

Given the significant technical and financial risks associated with complex defence product development, the absence of EDIDP would likely have left European industry unable or unwilling to bear risks alone. Without the 'risk-sharing' logic provided by the EDIDP, consulted industry noted that it would have been more hesitant to proceed with such high-risk initiatives. In addition, according to industry beneficiaries, EDIDP provided a timeframe within which both the industry and the Member States had to take a clear investment position, speeding up a process that may have conducted to similar results only in a much longer time span.

[189] As mentioned in the preamble of the EDIDP Regulation: "*In order to ensure that the funded actions contribute to the competitiveness and efficiency of the European defence industry, they should be market-oriented, demand driven and commercially viable in the medium to long term, including for dual-use technologies."*

[190] External Contractor study, Research Piece 2.

As one DG DEFIS project officer also noted with reference to a specific project: "*EDIDP2020 project SEANICE explores new concepts in anti-submarine warfare that the navies are not yet fully adopting but are curious about. Therefore, there is a lack of Member State cooperation the industry is pushing the innovation and the new concepts with a view of demonstrating the possibilities and greater efficiencies to the MoDs. This would not have been done at national level because the magnitude of budget would not be committed to this exploratory topic*."[191]

The Commission Expert Group also noted how a cooperative programme driven by the logic of "*sharing the risks between beneficiaries and partners*" contributes in general to reduce the investment exposure of industry in terms of lower risks to market and lower sunk-cost risks[192].

The key to successful de-risking however remains linked to whether the final products will be procured by end-users. Consultations with small and large industry alike raised concerns about EDIDP projects still have limited procurement prospects, despite often meeting end-user requirements[193]. This has been attributed to several external factors, including changes in national budget priorities or insufficient human resources to formalise the procurement process[194]. More structural solutions should be considered to address this issue, which is especially critical for SMEs, as they are more vulnerable to financial pressures.

EFFICIENCY

Efficiency (1)

Assessment of project continuity from EDIDP to EDF enabling spending efficiency

For a precursor programme, efficiency may be best characterized by observing whether EDIDP project outcomes and results have received funding continuity through EDF actions. At this stage, assessing this in its entirety cannot be fully done considering that projects under the programme are still running with last projects expected to be finalised in mid-2026. As of February 2025, at least 20 EDIDP projects have witnessed a continuation through the EDF 2021-2023 projects. Considering this figure, this represents around half of all EDIDP projects being continued. The share is likely to increase since future EDF calls will continue to build upon previous programmes' results. In this regard, the EDF multiannual perspective provides a clearer indication of those precursor projects expected to be further supported under future EDF work programmes[195]. Despite continuity of consortia composition not being necessarily guaranteed from one project to another due to the competitive nature of the calls, it is clear even to industry that a continuity of effort is observable – when asked whether products/technologies developed under EDIDP/PADR had continued thanks to the EDF, 50% of large industries which replied said "yes"[196]. The assessment below provides a

[191] Questionnaire to DG DEFIS Policy and Project Officers.
[192] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'. While the point was made with reference to the EDF, the same logic can be said to apply to a programme such as the EDIDP.
[193] Workshops with EDF Large Entities and SMEs, Mid-Caps and RTOs.
[194] Workshops with EDF Large Entities and SMEs, Mid-Caps and RTOs.
[195] C(2025) 568 EDF Indicative multiannual perspective 2025-2027, European Commission.
[196] EDF Large Entities, Questionnaire results.

non-exhaustive overview of notable EDIDP projects that have received continuity under the EDF.

Underwater Control Contributing to Resilience at Sea

The MIRICLE project, funded by EDIDP, laid the foundation for an extended mine countermeasures toolbox. The first ships carrying technology developed through MIRICLE were launched in 2023 and are expected to be delivered to the Belgian navy[197]. During consultations with Member States, MIRICLE project was mentioned as being a highly innovative product contributing to enhanced national technological autonomy[198]. This toolbox was then further developed through the E=MCM project, which was funded under the EDF 2023 work programme. Similarly, the SEANICE project was followed up by the EDF SEACURE project, which focused on seabed and antisubmarine warfare capabilities. The EDIDP CUISS project has developed a system offering solutions for divers engaged in sub-surface threats such as mine hunting, where there is a strong potential for procurement by Bulgarian, Romanian and Finnish navies. This project was then further developed through the EDF SWAT-SHOAL project.

Counter-Unmanned Air Systems (UASs) Capabilities

The development of counter-UAS capabilities is another area where continuity starting from the EDIDP has played a crucial role. The JEY-CUAS project, which was supported by EDIDP, was a pioneering effort in this field. Consultations with Member State revealed that such a project was perceived as one increasing European technological autonomy[199]. A follow-up EDF 2023 project, E-CUAS, aims to develop a European prototype to counter unmanned aerial systems, building on the successes of the JEY-CUAS, leading to possible future joint procurement at EU level[200].

Intelligence, surveillance, and reconnaissance (ISR) and Tactical Remotely Piloted Aircraft System (RPAS) Systems

The development of permanent air capabilities for ISR and tactical RPAS has also been an area of focus for EDIDP. The MALE RPAS project, also known as 'Eurodrone', was funded by EDIDP with €100 million (representing one fifth of the entire EDIDP budget) and aimed to support the early development phase of the project[201]. This project will be followed up under the EDF 2024 work programme aiming to further develop the MALE RPAS system. Four Member States (Germany, France, Spain, Italy) have already committed to buying Eurodrones through a Global Contract for 20 systems (60 aircraft and 40 ground control stations).

Another EDIDP project called LOTUS[202] has developed a drone mothership able to deploy dispensable 'daughter' drones for ISR purposes. Such a platform will help to simultaneously patrol wide areas, such as islands, that would otherwise require more costly and less efficient means. The follow-up EDF project ACTOS will develop the next phase of the platform.

Cyber Situational Awareness and Defence Capabilities

[197] Further information including a press release by the NAVAL Group is present.
[198] Consultations with Member States.
[199] Consultations with Member States.
[200] C(2025) 568 EDF Indicative multiannual perspective 2025-2027, European Commission.
[201] For more information, see: https://defence-industry-space.ec.europa.eu/eurodrone-stage-2-global-contract-signature-marks-important-step-future-eu-defence-industry-2022-02-28_en
[202] Low Observable Tactical Unmanned air System

The development of cyber situational awareness and cyber defence capabilities is another domain EDIDP provided funding for, with the intention to address emerging hybrid threats. The ECYSAP project, which was supported by EDIDP, aimed to develop a European cyber situational awareness platform. This project was later followed up by the ECYSAP EYE project, which focuses to further enhance the capabilities of European defence forces in this area. The EDF 2021 AINCEPTION and EU-GUARDIAN projects address improved cyber operations capabilities in response and incident management and both projects build on earlier EDIDP projects, such as CYBER4DEF.

Space Situational Awareness (SSA), Positioning-Navigation-Timing (PNT) and Satellite Communication Capabilities

The development of space situational awareness and early warning capabilities is another strategic area of investment initiated under the EDIDP. The EDIDP already addressed the early development stage of the space-based early warning capability through the ODIN'S EYE project. Building on precursor results, the EDF's 2022 ODIN'S EYE II project aims to reach a design phase. Together, the two projects reached an EU funding contribution of close to €100 million, which according to one study is comparatively higher funding amount than the US's comparable *Hypersonic and Ballistic Tracking Space Sensor (HBTSS)* programme[203].

The SAURON and INTEGRAL projects, which were supported by EDIDP, aimed to develop sensors for advanced usage and reconnaissance of outer space situations. This project was later followed up by the EDF NAUCRATES project, which focused on developing a small satellite for geostationary Earth orbit space situation awareness. The NAUCRATES project was then further followed up by the EMISSARY project to develop a European military integrated space situational awareness and recognition capability. The development of PNT and satellite communication capabilities is another area where continuity has played a crucial role. The GEODE project, supported by EDIDP, aimed to develop Galileo for EU defence applications. This project was later followed up by the EDF NAVGUARD project, which focused on adding ground and space-based navigation warfare resilience to Public Regulated Service (PRS) receiver technological capabilities.

Ground Combat Capabilities

The development of ground combat capabilities is another area where EDIDP generated collaborative spending efficiencies. The FAMOUS project, which was supported by EDIDP, aimed to develop European future highly mobile augmented armoured systems. This project was later followed up by the FAMOUS II project, which focused on developing next-generation armoured platforms. The testing of two FAMOUS prototypes are expected to soon begin with the Finnish Defence Forces. In another example, the LYNKEUS project, which was also supported by EDIDP, aimed to upgrade the current and develop the next-generation ground-based precision strike capabilities. This project was later followed up by the MARSEUS project, which focused on enhancing the beyond-line-of-sight capability initiated in the EDIDP project. One study noted that "*the long strike artillery is one of the main capability gaps of EU Member States*."[204]

The Unmanned Ground System (UGS) project iMUGS (with EU contribution of €30.6 million) stands to be one of the earliest supported European defence development

[203] External Contractor study, Research Piece 6.
[204] External Contractor study, Research Piece 6.

projects. This consortium also exemplifies the added value and synergies attainable through industrial civil-defence collaboration by uniting 13 entities from 7 Member States (Estonia, Finland, Germany, Latvia, France, Spain, Belgium). iMUGS is developing further the autonomous capabilities of existing platform' to address a large range of missions: these can include for example casualty evacuation and re-supply.

Air Combat Capabilities

The development of air combat and electronic warfare capabilities is another area where EDIDP has initiated collaborative industrial action. The REACT project aimed to develop a design for Air Electronic Attack Capability (AEAC) and allowing European Union air forces to conduct operations in a contested anti-access/area denial (A2/AD) environment responding to low-frequency radars. This project was later followed up by the REACT II project under EDF, which focused on developing airborne electronic warfare capability capable of being employed on manned and unmanned platforms. Manned-unmanned teaming was also tackled under the EDIDP in 2020 through the MUSHER project. A project related to collaborative air combat (EICACS) was selected for funding following the EDF calls for proposals in 2021.

European Command and Control

In the domain of Command and Control systems, EDF funded project European Command and Control System (EC2) is a direct continuation of EDIDP project ESC2 project, totalling a combined EU contribution of €50 million. The EC2 project will develop infrastructure (software and hardware) needed to create a modern and secure EU command and control system at the disposal of the EU to conduct and rapidly deploy Communication and Information System (CIS) needed to set-up EU military missions and operations. This project is expected to deliver a fully tested and validated prototype, with a view to being procured between 2025 and 2026.

Efficiency (2)

Programme Implementation - Proposal preparation and submission

The EDIDP was the first time industry was faced with applying to an EU grant programme for defence capability development. The programme was a novelty also for the European Commission. The consulted industry stakeholders that also had experience under EDIDP agree that there was a steep initial learning curve, especially as related to: the technical preparation of proposals in a relatively short timeline, forming cross-border consortia and understanding the novel programme-specific requirements. Building from these experiences, 60% of beneficiaries consulted noted the EDF had brought improvements in terms of the "clarity of the information and documents requested" for the proposal preparation and submission stage as compared with PADR and EDIDP[205]. Moreover, beneficiaries that had experiences in both EDIDP and EDF noted the important steps taken to ensure simpler application modalities, including by having a single digital portal for submissions[206]. Half of the consulted industrial entities also find that the EDF has improved communication and outreach on funding processes compared

[205] EDF Large Entities and SMEs, Mid-Caps, RTOs Questionnaire results.
[206] EDF Large Entities, Questionnaire results.

with EDIDP[207]. The Commission Expert Group has also highlighted that the changes since the EDIDP have been particularly appreciated by the beneficiaries and notably the following changes: clearer eligibility criteria, the need to provide the Declaration of Honor (DoH) after selection, improvement of the detailed budget table template and the introduction of the SME self-assessment[208].

Programme Implementation – Grant implementation

Feedback received through consultations with beneficiaries and implementing entities of the programme, such as OCCAR, allowed several elements related to grant implementation to be noted.

During the EDIDP, first issues related to co-financing emerged. Several consulted beneficiaries of EDIDP noted that they still face several delays, even after several years of grant implementation, in receiving such co-financing[209]. One representative of a large defence industry described how one Member State provided only a commitment to provide co-funding "up to" a certain amount, creating uncertainty about what would eventually be provided. The issue of co-financing is strongly interlinked with external factors, over which the European Commission has no direct prerogatives, such the agreements on IPR distribution decided at consortium level and access rights negotiated among Member States through dedicated MoUs. This challenge remains largely shared by the stakeholders also in the EDF, despite recent efforts made by the European Commission to provide more detailed co-financing declaration templates. To the question "*compared to the EDIDP, has the EDF brought improvements Member States commitment and co-financing*?", nearly half of the respondents confirmed at least a partial improvement in the topic of Member State commitment and co-financing[210].

Another aspect of project implementation that was raised in connection with EDIDP was insufficient coverage of indirect costs. Under the EDIDP, indirect eligible costs were "assessed at a 25% flat rate of direct costs". The EDF introduced a system of actual indirect costs, which was perceived by some large industry beneficiaries to be a significant improvement and better adapted to cover higher project costs amounts – something that can determine the attractiveness a programme[211]. As noted by the Commission Expert Group "*The current model that leaves industry the freedom to choose between two possibilities, either applying for actual indirect costs reimbursement or opting for the flat rate, is highly appreciated and should be maintained. In particular, the possibility of reporting actual indirect costs, which was not allowed by the EDIDP regulation, was a very significant step in favour of the industry and therefore represents a key success factor for the EDF*."[212]

Several entities that had roles as coordinators in EDIDP also noted the higher administrative and economic burden of acting as a consortium coordinator. As one Mid-Cap mentioned: "*being a project coordinator…represents a significant workload and responsibility as it is the role of the company to ensure that the project achieves its*

[207] EDF Large Entities and SMEs, Mid-Caps, RTOs Questionnaire results.
[208] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'.
[209] Workshops with EDF Large Entities and SMEs, Mid-Caps, RTOs.
[210] Workshops with EDF Large Entities and SMEs, Mid-Caps, RTOs.
[211] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'.
[212] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'.

goals."[213] While the perception continues also in the EDF, overall, beneficiaries viewed project management under the EDF as being more efficient and easier to manage now that industry has more experience and is aware of expectations. When asked if beneficiaries consider EDF project implementation to be more efficient than project implementation in PADR and EDIDP, almost 90% of large entities responded affirmatively[214].

From experience in the EDIDP implementation as an entity entrusted for the indirect management of two large-scale capability development projects (MALE RPAS and ESSOR), OCCAR noted that the supporting documents for EDF templates, such as the annotated Model Grant Agreement, have improved profoundly since EDIDP[215]. From an implementation point of view, OCCAR noted that EDIDP has been "*very useful to confirm, on the job, the difficulties as regards defence related R&D cooperation (e.g., export control, IPR, security of information, budget synchronization).*"[216]

COHERENCE

Addressing EU capability gaps

The EDIDP projects explicitly aimed to address defence capability priorities agreed by Member States within the framework of the CFSP and particularly in the context of the Capability Development Plan, as per the explicit award criterion (d) under Article 10 of the EDIDP Regulation. Despite the limited budget of EDIDP, the programme has been able to fund projects in all military domains (Air, Land, Sea, Space and Cyber). Two EDIDP projects in particular address critical shortfalls of the European armed forces, MALE RPAS and ESSOR. Project MALE RPAS, also known as the *Eurodrone*, was funded with a grant of €100 million supporting a fully sovereign and ITAR-free medium-altitude and long-endurance drone. The European Secure Software-defined Radio, ESSOR, received a €37 development million to boost the EU's armed forces interoperability by creating a European standardisation for communication technologies (software radios).

PESCO

A key metric for measuring the extent to which the EDIDP has been coherent with other defence industrial policies is the proportion of funded projects that had a direct connection with PESCO projects. The EDIDP sought to promote the link with PESCO projects through a bonus system that increased the funding rate of projects by up to 10%. Data indicates that between 2019 and 2020, the share of EDIDP projects connected with PESCO projects slightly increased:

- In 2019, 9 of the 16 EDIDP-funded projects (56%) had a direct connection with one of 8 PESCO projects[217]. The total budget for these EDIDP projects was €233 million, equivalent to 84% of the funds allocated.

[213] Position paper from Mid-Cap.
[214] EDF Large Entities, Questionnaire results.
[215] Consultations with OCCAR.
[216] Consultations with OCCAR.
[217] European Commission, 'European Defence Industrial Development Programme 2019' (European Commission, June 2020), https://ec.europa.eu/commission/presscorner/api/files/attachment/865753/European_Defence_Industrial_Development_Programme_en.pdf.

- In 2020, 15 of the 26 EDIDP-funded projects (58%) had a direct connection with at least one of 14 PESCO projects[218]. The total budget for these EDIDP projects was €115.7 million, equivalent to 62% of the funds allocated. All but one of these 14 PESCO are listed as active today, with the exception being 'Indirect Fire Support (EuroArtillery)', which is listed as closed[219].

An additional observation made by the Commission Expert Group is that through the participation of companies in INTEGRAL and SAURON EDIDP projects in Member States decided to join the related PESCO project itself, such as in the case of EU-SSA-N (European military space surveillance awareness network)[220].

EDA

EDIDP proved that there is latitude for greater synergy and complementarity with relevant EDA projects, particularly Category B (CAT-B) projects. There are numerous examples of CAT-B projects and topics that provided a foundation for EDIDP and EDF projects. For instance, ECYSAP was an EDIDP project carrying on an EDA CAT-B project launched between 2016 and 2019, showcasing the positive bridging of the valley of death between research and development enabled by the different funding frameworks. Analogously, MIDCAS (mid-air collision avoidance system) and the following MIDCAS SSP (MIDCAS standardization support phase) were EDA CAT-B projects which found continuity under the 2019 EUDAAS project. The CAT-B project focused on system design requirements, while EDIDP enabled to further develop and demonstrate the Detect and Avoid Functionality, which is also needed for the operation of capabilities like the 'Eurodrone' to fly seamlessly in all airspaces.

Coherence with other EU and NATO strategic goals

The 2022 Strategic Compass outlined ambitious goals and areas to advance EU defence capability development efforts.[221] One example of a project linked to the Strategic Compass objectives is ESC2 funded under EDIDP with €20 million, which is strongly aligned with the work strand under "Act" focused on developing an EU command and control structures[222]. EDF 2022 project EC2 continues to build on the results of ESC2 with further €40 million in EU funding. EDIDP projects also demonstrated degrees of

[218] European Commission, 'European Defence Industrial Development Programme 2019', June 2020; and 'Permanent Structured Cooperation (PESCO) Deepen Defence Cooperation between EU Member States'. In later sources, the Commission has indicated that the number of projects with PESCO connections was 14 and that the total value of these projects was €97.7 million. See European Commission, 'European Defence Fund - Performance', n.d., https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/programme-performance-statements/european-defence-fund-performance_en.

[219] European Commission, 'European Defence Industrial Development Programme 2020', 30 June 2021 <https://defence-industry-space.ec.europa.eu/document/download/8afdb7a0-90cd-4cd6-9cdf-5eda1e5a6cec_en?filename=DEFIS%20_%20EDIDP%20Factsheet%20_%2030%20June%202021__._0.pdf>;

[220] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'.

[221] 'Within this decade and beyond, we will focus our capability development efforts on next generation capabilities in all domains, including at system and subsystem level along the focus areas identified by CARD … We will develop further incentives to stimulate Member States' collaborative investments in joint projects and joint procurement of defence capabilities that are developed in a collaborative way within the EU.' 'A Strategic Compass for Security and Defence', (EU External Action Services (EEAS): Mar. 24, 2022), <https://www.eeas.europa.eu/eeas/strategic-compass-security-and-defence-0_en>.

[222] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'.

coherence with NATO initiatives, especially in aligning technological developments and fostering interoperability between the European Union and NATO Member States. Given that the majority of EU Member States are committed to NATO's capability targets, EDIDP projects often reflect priorities that are consistent with NATO's strategic objectives, ensuring that European solutions are compatible with broader transatlantic security goals. For instance, EDIDP projects like EUDAAS and REACT mirror NATO's efforts to advance capabilities in surveillance, situational awareness, and electronic warfare. These projects contribute directly to enhancing the defence capabilities of NATO and the EU, addressing shared challenges in domains such as air combat, cyber defence, and electronic warfare. Several EU-funded projects, particularly those operating at the system of systems level, either demonstrate existing compatibility or have sufficient potential to integrate elements from NATO's standardisation framework (STANAGs), as already demonstrated by the ESSOR project[223].

RELEVANCE AND ADDED VALUE

Achieving projects that could not otherwise have been achieved alone and a springboard to EDF

EDIDP created avenues for conducting projects that, in the absence of these funding streams, would not have likely taken place. When asked to assess whether EU mechanisms had contributed to realising defence R&D projects that could not have been achieved purely at a national/regional level, 60% of the large entity beneficiaries replied affirmatively[224].

EDIDP managed to fund the advancement of major strategic enablers. In the Space domain, EDIDP launched the first EU project for Space-based Situational Awareness capable of dedicating early warning against ballistic missile threats. In the Air domain, EDIDP laid the groundwork for the development of a first European Detect and Avoid System which, will allow Europe to have its own *Sense & Avoid* system for air space integration of RPAS. According to the Commission Expert Group: *"EUDAAS was rescued from the "death valley*" by EDIDP[225]. The EDIDP has also funded a project aimed explicitly at supporting the EU in developing a modern and secure EU command and control system.

Beyond the specific content of the projects, it is also the nature of industrial collaborations created through them which would not have occurred in the absence of the EDIDP. As has been noted in studies and stakeholder consultations, the EDIDP (and even PADR) enabled new forms of coordination at the Member State, EU and industrial levels. The EDIDP has proven the successful logic of cross-border cooperation, something which has continued and been expanded under the EDF.

In many respects, the EDIDP was a learning ground for industry and the European Commission alike. Its initial success, together with that of PADR in the defence research

[223] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'. See also: "NATO ratifies and adopts ESSOR High Data Rate Waveform specification as STANAG 5651 NATO HDRWF". OCCAR. https://www.occar.int/news/nato-ratifies-and-adopts-essor-high-data-rate-waveform-specification-as-stanag-5651-nato-hdrwf.

[224] EDF Large Entities, Questionnaire results.

[225] Commission Expert Group on policies and programmes relevant to EU space, defence and aeronautics industry subgroup defence, 'Report on the European Defence Fund Interim Evaluation'.

domain, paved the way towards having an EU wide defence R&D framework. As such, it can be reasonably assessed that the EDIDP has acted as a successful springboard towards the EDF.

Making a difference for the EDTIB

The EDTIB as a whole benefitted from the EDIDP given the involvement of entities from all strands of the EU defence ecosystem. As already mentioned, the EDIDP created unprecedented levels of cross-border industrial defence cooperation, only to be later surpassed by the EDF. The EDIDP consortia also saw the involvement of research organisations, ministries and universities, which in many instances developed new and lasting cooperation partnerships pursued under the EDF. Consultations with Member State even noted several specific examples of how the participation of its entities in EDIDP projects like PANDORA and LOTUS, has enabled them to grow business opportunities, build new cross-border partnerships and integrate technologies in larger defence products[226]. One Member State also noted the role of ECYSAP project in enabling the involvement of RTOs in European defence projects researching and developing cutting-edge technologies. Another Member State noted project FAMOUS as further expanding regional partnerships[227].

CONCLUSION

This retrospective evaluation of the EDIDP highlights the overall positive impact of the EDIDP programme in fostering defence capability development and industrial collaboration in the European Union. The EDIDP represents a significant milestone in the EU's aim to progress from early-stage research to initial capability development of defence technologies.

From the effectiveness point of view, the EDIDP can be noted as a successful initiative in attracting a variety of entities across Member to jointly collaborate on sovereign European defence products and technologies. The programme has reasonably leveraged cross-border cooperation between smaller undertakings, including SMEs and Mid-Caps in particular. Increasing interest from EU industry was registered under the two EDIDP calls for proposals, a trend which continued at larger scale under EDF. EDIDP moreover facilitated synergies with civil research, exemplified by funding several dual-application projects.

From an efficiency perspective, it can be noted that several EDIDP projects and project results have been followed-up through the EDF, enabling effective spending continuity. While EDIDP financing was essential for kick-starting defence capability projects of European interest, further efficiencies will only be generated when outcomes of procurement are realised by armed forces. The EDIDP's implementation was a first for both industry and the European Commission. While several challenges have been identified related to the application process and project management, generally, industry beneficiaries noted the substantial wider benefits to participating in such an EU level programme.

In terms of coherence, the EDIDP-funded actions shown to be complementary to other defence industrial policies like those advanced through the EDA, the PESCO framework,

[226] Consultations with Member States
[227] Consultations with Member States

and are aligned with broader strategic goals set-out in the Strategic Compass and by NATO.

The EDIDP demonstrated its unique relevance given its support in funding defence capabilities that have become all the more important to invest in given the current geopolitical context which requires a stronger defence preparedness by the EU. The EDIDP's relevance can also be implicitly affirmed insofar as it effectively prepared the development window of the EDF from 2021 onwards. Similarly, the EDIDP showed it added-value by incentivising industrial cooperation on projects of European interest that otherwise would likely have not have been achieved if Member States continued acting alone.

ANNEX VIII. LIMITATIONS OF THE EDF INTERIM EVALUATION

The main limitation of this interim evaluation concerns its timing: it is taking place only three years after the EDF start of implementation, with most projects only having started in early 2023. This period is too limited for important results and wider impacts to emerge from actions related to defence research and development.

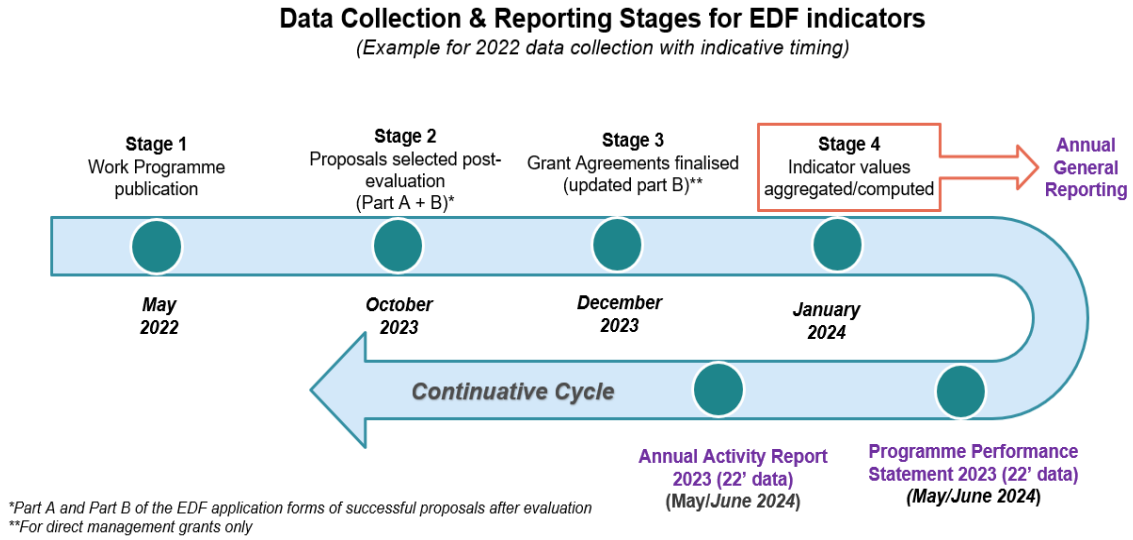


FIGURE 41 - DATA COLLECTION & REPORTING STAGES FOR EDF INDICATORS

Moreover, considering that reporting on EDF performance indicators involves a data lag of two years (as shown in Figure 39) this implies that only EDF 2021 and 2022 project data has been publicly reported on. Despite this limitation, the most updated data has been used where applicable, as relates to: 2023 selected EDF projects, 2023 evaluations (e.g. related to ethics screening, independent experts) 2024 calls for proposals (e.g. number of submitted proposals, oversubscription rates to calls), the 2025 annual work programme. Limitations also include issues related to data availability and measurability of outcomes. For example, monitoring data covering patents are not yet available. It has also not always been possible to validate findings from external studies/expert groups, for example with respect to macro-econometric modelling results.

Generally speaking, this limited timeframe has made the computation and extraction of data for certain indicators challenging, such as those described below. Despite efforts to compute these measurements with the support of JRC and by asking beneficiaries in questionnaires, data could not be retrieved. The Eurostat managed patents database (PatSat) includes as most recent data information from 2021, before any EDF projects started. Patents are also typically generated only years after the conclusion of results, hence the latency of obtaining data for this interim evaluation. To mitigate such issue, questionnaires to beneficiaries included points asking whether IPRs or patents have been generated through their participation in EDF actions, although the outcome was inconclusive with no responses provided on the subject. Other indicators that have proven difficult to measure relate to *"Number of Defence R&D employees supported by Member State"*. The closest estimates come from the calculation of staff effort used to implement EDF projects, but without a clear-cut corresponding breakdown by Member State. To complement this shortcoming, the JRC's *Rhomolo* analysis provided an estimation of expected

employment supported through the EDF's intervention.

The specific data limitations are compounded by a general lack of available Member States' disaggregated data on defence R&D spending which would be important to measure the comparative effect of EDF in increasing Member State investments in collaborative defence R&D - latest known figures are available from EDA's 2020-2021 Defence Data report.[228] An originally expected limitation was the hindered access to information from stakeholders considering defence-sensitivity aspects. However, such a problem was not extensively encountered in the process of stakeholder consultations. Response rates to workshops and questionnaires, as well as the quality of inputs, were overall highly satisfactory.
Another limitation is the lack of benchmarks to compare performance. Worldwide there is no programme similar to the EDF in terms of size, thematic coverage and depth. Also, the R&D performance of countries is influenced by many other factors (including geopolitics). The performance of the EDF has thus to be seen in the context of its role in the wider R&D support system in particular as regards its positioning against (and impact on) the national and regional policy initiatives. Furthermore, it is important to point out that one of important risks concerning any evaluation to be carried out with regards to the defence sector is the lack of publicly available statistical data on this industry. In particular, Eurostat does not have separate statistics on defence nor on the defence industry (civil and military use are not separated), whereas data from Member States is often classified. Monitoring information was included in the early years of the EDF's implementation as well as information on short-term indicators and on output indicators (such as number and types of projects). Considering the length of the projects as expected in the EDF impact assessment- information on medium and long-term indicators is still not yet available. The same can be said for information on results indicators (such as subsequent procurement by Member States and patents) which is expected to be available in the later years of the EDF. To overcome/mitigate these limitations, the interim evaluation is transparent in indicating its data sources and all underlying data sources are made publicly available.

The analysis of the evidence by Commission services has allowed identifying data availability/quality problems that could already be addressed over the course of the evaluation. Conclusions are drawn based on the systematic triangulation of evidence from various data sources. All evaluation results have been systematically checked against input from stakeholders. Given the novelty of the programme and the absence of an *ex-post* assessment from the precursor programmes, the interim evaluation exercise was in itself a starting point. Beyond this, the absence of a comparable programme in the EU landscape makes benchmarking or targeting for points of comparison challenging.

[228] https://eda.europa.eu/docs/default-source/brochures/eda---defence-data-2021---web---final.pdf