

# EDRIN

European Defence  
Research and Innovation Network

## EDF interim evaluation 2024

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RTOs insights for a future EDF  
Supporting a stronger European ITDB



TNO innovation  
for life



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# 1. EDRIN PRESENTATION

## 1.1. EDRIN'S MISSION

The European Defence Research and Innovation Network (EDRIN) is the group of independent solution-driven not-for profit European applied research and technology organizations (RTOs) with a substantial role in defence research and development (R&D) within a broader innovation portfolio.

Our mission is to:

- Act as a coordinated voice of RTOs in defence R&D and cooperation.
- Offer a one-stop-shop for political and industrial stakeholders to access defence R&D expertise thanks to our key role in the innovation ecosystem, in-depth experience in national, bilateral and multinational collaborative projects, large networks of excellent researchers and unique test facilities.
- Provide strategic guidance and consolidated long-term roadmaps for key R&D priorities
- Act as the bridging link between academia, applied research, SMEs, industry, and end-users in both traditional defence domains as well as an interface to civilian technologies and applications.

## 1.2. OUR OFFER

EDRIN is the pivot in the value chain of European defence R&D and cooperation. Its members bring decades of experience in working for Ministries of Defence, Armed Forces, and multinational defence organisations such as EDA and NATO. EDRIN members connect academia, applied research, SMEs, industry, and end-users, including non-traditional defence industries.

## 1.3. OUR ADDED VALUE

EDRIN proactively engages with all relevant stakeholders to foster the competitiveness and innovation capacity of the European defence technological and industrial base (EDTIB), including through maximizing the successful implementation of the European Defence Fund (EDF).

## 1.4. WHO WE ARE

As of 2024, EDRIN has nine members from eight countries:

- Commissariat à l'énergie atomique et aux énergies alternatives (CEA), France
- Fraunhofer-Gesellschaft, Germany
- Baltijos pažangių technologijų institutą (BPTI), Lithuania
- Totalförsvarets forskningsinstitut (FOI), Sweden
- Instituto de Engenharia de Sistemas e Computadores Inovação (INOV), Portugal
- Ινστιτούτο Τεχνολογιών Πληροφορικής και Επικοινωνιών (ITI), Greece
- Office National d'Etudes et de Recherches Aérospatiales (ONERA), the french aerospace lab, France
- Nederlandse Organisatie voor Toegepast Natuurwetenschappelijk Onderzoek (TNO), The Netherlands
- Teknologian tutkimuskeskus (VTT), Finland

## 2. INTRODUCTION

Implemented in 2021, the European Defence Fund (EDF) has been granted an 8 billion euros budget over the multiannual financial framework (MFF) 2021-2027. Since then, the EDF has proven to be an interesting tool in order to build a more integrated European defence market, strengthening the European Defence Technological Industrial Base (EDTIB). EDRIN would first salute this improvement toward a stronger European Defence.

Then, EDRIN, with its unique position gathering RTOs across Europe, would like to submit possible proposals to raise EDF's efficiency.

## 3. EDF STRUCTURE ANALYSIS

EDF is divided in two main pillars: *Research* and *Development*, receiving roughly one third and two thirds of the budget, respectively. This **overarching architecture is appropriate** and only need to be fine-tuned, as detailed in the following lines.

### 3.1. DEFENCE RESEARCH PILLAR: A GREATER AGILITY TO SERVE SMES AND INNOVATIVE ACTORS

This pillar aims at bolstering collaborative defence research addressing emerging and future security threats. *Research* is relevant and technologies developed within its scope should be meant to eventually fuel the *Development* pillar. In addition, **technologies conceived in this pillar must be consistent with the research over dual technologies performed elsewhere**. This overall coherence and articulation should be addressed through the way the EU will tackle the dual technologies issues in the future MFF. In addition, EDRIN underlines that a specific *Defence Research* pillar, shaped to take full advantage of dual R&D and stakeholders' creativity, is still needed in the future EDF.

**Moreover, *Research* pillar requires agility**, especially when it comes to SMEs, which are often very innovative but cannot support the same constraints major players do. Several modifications could be made in order to increase agility:

- *Research* calls can remain on an annual basis or switch to bi-annual one (see development part), but should favour spin-in calls since they are an important step in fostering synergies, aligned with dual technology R&D.
- Open spin-in topics could be established to further integrating civilian technologies in the EDF/EDTIB.
- Spin-out calls (from an EDF perspective) should be discussed with DG DEFIS, DG HOME, Member States (MS), and the civilian R&I community to fuel dual technology R&D in return.
- The Open calls overall budget should be increased. Indeed, over the past years, a significant rise of competition has been observed in the OPEN SMEs and OPEN DIS proposals. These calls are the free expression of what organisations and industries, whatever their size, think they might offer to the Defence sector. It also highlights for many players, and especially new comers, it is obviously difficult to get on-board consortia already made up of traditional defence-industry players. Maintaining the current level of budget for open calls is taking the risk to miss cutting-edge and game changing solutions.
- Furthermore, EDRIN supports the idea of “ever warm” calls allowing consortia to apply to open calls all year long, with a new mechanism allowing two or three selection committees a year. This

could help SMEs and newcomers to integrate consortia at their pace. It may be also the case for OPEN *Development* calls.

- Last, a closer link could be established between Research Action and EDA led projects.

### 3.2. PAVING THE WAY FOR DUAL TECHNOLOGIES CALLS IN THE FUTURE FRAMEWORK.

In order to prepare and experiment future Dual R&D calls, EDRIN suggests, if possible under the ongoing EDF and HEUR regulations, to explore a cumulative funding scheme for a Research call before the end of the current framework. For example, one of the most obvious technical common ground to look at first seems to be about Security and Defence. This experimental call could then benefit of funds from the Security Cluster and EDF.

Indeed, if there are some specific key defence technologies areas, **many of the needed technologies for future defence capabilities are dual**. Therefore, research on these technologies can profit to a larger spectrum of uses, vital for our society and our defence. A good basis to set up a cumulative funding schemes in research projects would certainly be the 10 critical technology areas identified by the EU for economic security<sup>1</sup>.

Once again, the idea is to be consistent with technologies developed in the *Research* pillar and dual technologies conceived out of the EDF scope. Thus avoiding duplication and fragmentation of the R&I effort and allowing more meaningful projects, otherwise developed separately, in different programs, with less ambition. Common-technological-ground calls, serving both Cluster 3 and EDF, might be experimented, bringing extra value for those developing dual technologies. The adaptation to defence or security uses and the progress to higher TRLs and industrialisation could then be assumed by each program.

### 3.3. DEVELOPMENT PILLAR: STABILITY AND AMBITION FOR BETTER OUTCOMES

*Development* pillar aims at financing capabilities. Technologies developed under *Research* and it should naturally flow toward *Development* and then be turned into systems or sub systems meeting armed forces' needs. In that way, the current annual scheme including many subjects is somehow not that productive to achieve real innovation or even to consolidate the EDITB. The result is a succession of calls on the same subjects as follow up of the previous ones. To improve *Development's* efficiency the following measures might be applied:

- The number of calls should be decreased but their size, in terms of funds, might be increased, leading to **more ambitious and more coherent calls**.
- **They might be multi-annual**, spreading over several years, with the ability for members to get in and out more easily.
- In fact, it is challenging for new actors to join EDF project consortia built on work in the PADR, EDIDP and previous EDF programs, if those new actors were not initially involved ("closed shop" effect). A solution might be to maintain excellence-based competition in the EDF through a binding inclusion of new partners in the follow-up projects. One can also imagine setting a bonus for integrating new comers.

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<sup>1</sup> (1) Advanced connectivity, navigation, and digital technologies, (2) Advanced sensing technologies, (3) Space and propulsion technologies, (4) Energy technologies, (5) Robotics and autonomous systems, (6) Advanced materials, manufacturing, and recycling technologies, (7) Quantum technologies, (8) Biotechnologies, (9) Cybersecurity technologies, (10) Artificial intelligence.

- At some key milestones, it is of utmost importance to be able to integrate outcomes from *Research* pillar, especially those coming from open calls. One way to do this, as well as solving the closed-shop problem, would be to keep “Studies” in Development Action.
- Another improvement might be linking more clearly *Development* calls to PESCO projects. The idea of the Framework Partnership Agreement (FPA) for a capability development purpose linked to PESCO could be interesting too. Although it might produce a “closed shop” effect as well, the shop is far bigger and offers different choices a year, at different TRL, allowing more coherence with the ongoing PESCO Developments.

One of the EDF’s work program main challenges is the considerable effort required to prepare each work program due to the legal obligation to adopt annual work programs.

- Thus, we suggest adopting a **bi-annual work program on development calls**, allowing more room for newcomers, especially SMEs, to prepare themselves to integrate consortia.

## 4. BRIDGING A GAP BETWEEN RESEARCH, DEVELOPMENT AND INDUSTRIALISATION

If *Research* calls may lead to *Development* calls, it’s not a systematic path. Moreover, some technologies developed in certain areas of *Development* could be very useful in other areas. In civilian environment, Innovation & Technology hubs can solve partially this problem, allowing different stakeholders to meet their own needs through shared knowledge and facilities. EDRIN suggests the same idea might apply for Defence, by **establishing Defence Innovation & Technology Hubs**, a shared environment where RTOs, SMEs, industrial players and end-users work together to address Defence priorities and pool resources to bridge the gap between research, development, and production of innovative and interoperable products and technologies. To speed up the time to market, there’s a need to easily absorb new technologies and measure their impact effectively. Defence innovation hubs can enable innovators to test their solutions and integrators to evaluate them at reasonable costs, through digital twins or “Hardware in the loop” solutions for instance. In addition, it allows industrial and end users to assess the potential impact of the innovation.

Furthermore, these hubs should rely on already existing high-level facilities developed through other programs, such as Testing and Experimenting Facilities (TEFs) networks or other demonstration and technological facilities, which could foster dual and Defence R&D.

Innovative actions by SMEs and RTOs under the open *Development* calls are hampered by the requirements to have common technical specifications jointly agreed by Member States and an intent to procure the final product. A better way to ensure uptake of the innovative solutions might be to introduce a requirement to include one or more major defence companies in the consortium.

### 4.1. TOWARD AN NEW ENABLING EDF TYPE OF CALL

EDRIN notes that support for ramping up the spin-in dual approach and take full advantage of these hubs is still missing in the EDF typology and could be added in the next MFF. Therefore, EDRIN advocates for a new type of EDF call. This call could be issued with the aim of targeting demonstration and maturation of technologies, associated with relevant use and business cases, promoting and using the technological infrastructures and testing facilities. Within these calls, RTOs could fully support research organizations as well as private companies (large and SMEs) to commonly develop new technologies or processes, and



prepare the uptake of the results of R&T&I within both industrial and operational environments, closer to market and military applications. This new type of spin-in calls can help foster synergies, especially where technologies with a dual potential and stronger links between RTOs and industry are concerned.

EDRIN suggests the European Commission should consider identifying a first pilot Defence innovation and technology hub, and launching an associated first EDF call, as an experiment, before the end of the current framework. The pilot call could address strategic technologies that reflect Defence priorities.

## 5. EDF FUNDING SCHEMES

According to EDRIN, the bonus system generates complexity and lead to a maximization of funding rather than maximization of quality and innovation. Especially SMEs are affected by this regulations and access to EDF funding is more challenging for them compared to industry.

### 5.1. FULL COST REIMBURSEMENT

Nevertheless, a positive example worth to be highlighted is the opportunity to **apply for full cost reimbursement under the EDF**. To further facilitate and support this process the European Commission should simplify the corresponding template and further streamline the application process for full cost reimbursement.

## 6. EDITORIAL NOTE

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