



European Defence Fund (EDF)

Call for proposals

EDF-2024-RA

Call for EDF **research actions**
implemented via actual cost grants

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CALL FOR PROPOSALS

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0. Introduction

This is a call for proposals for EU **action grants** in the field of collaborative defence research and development under the **European Defence Fund (EDF)**.

The regulatory framework for this EU Funding Programme is set out in:

- Regulation 2018/1046 ([EU Financial Regulation](#))
- the basic act (EDF Regulation [2021/697](#)¹)
- STEP Regulation [2024/795](#)².

The call is launched in accordance with the Work Programmes 2024 Part II³ and 2025 Part I⁴ and will be managed by the **European Commission, Directorate-General for Defence Industry and Space (DG DEFIS)**.

 Please be aware that, if selected, the Commission may decide that some projects are afterwards managed by entrusted entities such as, but not limited to, the European Defence Agency (EDA) or the Organisation Conjointe de Coopération en Matière d'Armement/Organisation for Joint Armament Co-operation (OCCAR).

The call covers the following **topics**:

- **EDF-2024-RA-SENS-ART: Advanced radar technologies**
- **EDF-2024-RA-DIGIT-ASMEP: Automated structural modelling for effect prediction**
- **EDF-2024-RA-AIR-AAM: Concept study on advanced air-to-air missiles**
- **EDF-2024-RA-AIR-UCCAS-STEP: Unmanned collaborative combat aircraft systems**
- **EDF-2024-RA-GROUND-IWAS: Intelligent weaponry and ammunition systems**
- **EDF-2024-RA-PROTMOB-FMTC: Future mid-size tactical cargo aircraft**
- **EDF-2024-RA-UWW-SACOM-STEP: Secured and adaptive underwater communications for uncrewed underwater systems**
- **EDF-2024-RA-SIMTRAIN-BRG-STEP: Methods for bridging reality gaps**

Each project application under the call must address only one of these topics. Applicants wishing to apply for more than one topic, must submit a separate proposal under each topic.

¹ Regulation (EU) 2021/697 of the European Parliament and of the Council of 29 April 2021 establishing the European Defence Fund and repealing Regulation (EU) 2018/1092 (OJ L 170, 12.5.2021).

² Regulation (EU) 2024/795 of the European Parliament and of the Council of 29 February 2024 establishing the Strategic Technologies for Europe Platform (STEP), and amending Directive 2003/87/EC and Regulations (EU) 2021/1058, (EU) 2021/1056, (EU) 2021/1057, (EU) No 1303/2013, (EU) No 223/2014, (EU) 2021/1060, (EU) 2021/523, (EU) 2021/695, (EU) 2021/697 and (EU) 2021/241 (OJ L, 2024/795, 29.2.2024).

³ Commission Implementing Decision C(2024) 1702 final of 15.03.2024 on the financing of the European Defence Fund established by Regulation (EU) No 2021/697 of the European Parliament and the Council and the adoption of the work programme for 2024 - Part II.

⁴ Subject to adoption later in June 2024.

We invite you to read the **call documentation** carefully, and in particular this Call Document, the Model Grant Agreement, the [EU Funding & Tenders Portal Online Manual](#) and the [EU Grants AGA — Annotated Grant Agreement](#).

These documents provide clarifications and answers to questions you may have when preparing your application:

- the [Call Document](#) outlines the:
 - background, type of action and funding rate, objectives, scope and types of activities, functional requirements, expected impact and specific topic conditions (sections 1 and 2)
 - timetable and available budget (sections 3 and 4)
 - admissibility and eligibility conditions, including mandatory documents (sections 5 and 6)
 - criteria for financial and operational capacity and exclusion (section 7)
 - evaluation and award procedure (section 8)
 - award criteria (section 9)
 - legal and financial set-up of the Grant Agreements (section 10)
 - how to submit an application (section 11)
- the [Online Manual](#) outlines the:
 - procedures to register and submit proposals online via the EU Funding & Tenders Portal ('Portal')
 - recommendations for the preparation of the application
- the [AGA — Annotated Grant Agreement](#) contains:
 - detailed annotations on all the provisions in the Grant Agreement you will have to sign in order to obtain the grant (*including cost eligibility, payment schedule, accessory obligations, etc.*).

You are also encouraged to visit the [DG DEFIS webpage](#) to consult the list of projects funded previously.

1. Background

The European Defence Fund (EDF) fosters the competitiveness, efficiency and innovation capacity of the European defence technological and industrial base (EDTIB).

It contributes to the EU strategic autonomy and its freedom of action, by supporting collaborative actions and cross-border cooperation between legal entities throughout the Union, 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, at each stage of the industrial lifecycle of defence products and technologies.

The EDF funds projects which are consistent with the defence capability priorities commonly agreed by EU Member States within the framework of the Common Foreign and Security Policy (CFSP), through:

- collaborative research that could significantly boost the performance of future capabilities, aiming to maximise innovation and introduce new defence products and technologies, including disruptive technologies for defence, and aiming to make the most efficient use of defence research spending in the EU

or

- collaborative development of defence products and technologies, thus contributing to the greater efficiency of defence spending in the EU, achieving greater economies of scale, reducing the risk of unnecessary duplication and thereby fostering the market uptake of European defence products and technologies and reducing the fragmentation of defence products and technologies, ultimately leading to an increase in the standardisation of defence systems and a greater interoperability between Member States' capabilities.

In line with the Work Programmes 2024 part II and 2025 part I, this call covers thematic topics addressing **research actions** (including one action with financial support to third parties) which will be implemented through actual cost grants.

STEP

The following topics contribute to the objectives of the [Strategic Technologies for Europe Platform \(STEP\)](#):

- EDF-2024-RA-AIR-UCCAS-STEP: Unmanned collaborative combat aircraft systems
- EDF-2024-RA-UWW-SACOM-STEP: Secured and adaptive underwater communications for uncrewed underwater systems
- EDF-2024-RA-SIMTRAIN-BRG-STEP: Methods for bridging reality gaps.

Business coaching

The EDF also has a business coaching component. Successful SME beneficiaries will be offered business coaching, to accelerate their growth and guide them in their business challenges to reach the defence market.

2. Type of action and funding rate — Objectives — Scope and types of activities — Functional requirements — Expected impact — Specific topic conditions

Type of action and funding rate

The topics under this call for proposals concern EDF Research Actions (RA).

Research Actions are reimbursed at a funding rate of 100%.

Specific topic conditions

For all topics under this call:

- multi-beneficiary applications are mandatory and specific conditions for the consortium composition apply (*see section 6*)
- the following reimbursement option for equipment costs applies: depreciation only (*see section 10*)

For the topic EDF-2024-RA-SIMTRAIN-BRG-STEP:

- financial support to third parties is allowed, but only within the set threshold (see section 10).

EDF-2024-RA-SENS-ART: Advanced radar technologies

Objectives

General objective

New types of threats are difficult to detect and track, in particular those with stealth characteristics, hypersonic speeds, slow airborne motion, small highly manoeuvring and when saturation attack tactics are used. Facing such threats, existing surveillance radar systems are reaching their limits in terms of detection range, angular domain coverage, tracking and recognition capabilities. Consequently, the objective of this topic is to mature the required technologies and concepts to cover the need for situational awareness by achieving advanced high-performance and a highly integrated multifunction system that may support radar, electronic warfare (EW) and possibly communication functions when feasible and advantageous, enabled through the development of active electronically scanned array (AESA) antennas.

Specific objective

This topic addresses the maturation of new RF sensor technologies, such as, but not limited to, high-power, high-frequency (up to Ka band), multi and wide band operation both active and passive, adaptive waveform design, modern AESA antennas with digital beam-forming, advanced resource management, innovative signal processing and spectrum-sensing techniques, multiple-input/multiple-output (MIMO) radar, multi-static configurations and cognitive capabilities with for instance Artificial Intelligence/Machine Learning (AI/ML). The aim is to render radars highly versatile and adaptive, while being compatible with operational constraints in terms of performance, size, weight, power consumption and cost (SWaPC).

These advances are expected to continue paving the way for more integrated capabilities with respect to radiofrequency (RF), microwaves and electronics, permitting the integration of the functions of radar, electronic warfare and desirably communications into existing or new platforms when feasible and advantageous. The specific understanding, development and management of AESA antennas is essential in this regard.

Scope and types of activities

Scope

Proposals must address research on innovative RF sensor technologies able to improve the performance of current radar systems and deepen into the concept of multifunctional capabilities when feasible and efficient.

As agreed with supporting Member States and EDF Associated Countries, challenging scenarios must be proposed, Associated Countries, after being analysed by using different combinations of radar techniques and selected as the most appropriate solutions in terms of performance, feasibility and cost. In that regard, the proposals should consider active and/or passive RF systems, stationary and/or mobile, single band and/or multiband using a wide coverage of the spectrum, multiplatform, adaptive and flexible with cognitive capabilities that suppose a strong impact and significant effects in the theatre of operations, increasing survivability, interoperability and resilience of the EU Member States' and EDF Associated Countries' Armed Forces.

This set of technologies should be conceived to be integrated in different platforms and with the capacity to be part of a network able to cover wider areas and work

synergistically in order to improve the detection, tracking and identification capabilities of challenging targets. Examples of those are the stealthy ones (low RCS), tactical ballistic missiles (TBM) and hypersonic missiles, or when saturation attack tactics are used and targets are immersed in clutter or protected by jamming.

Proposals should not address the network aspects.

The improvement of the technological enablers of the AESA antennas should be covered as a mean to allow the multifunctional concepts and improve the general performance of the radar against new types of threats.

Types of activities

The following table lists the types of activities which are eligible for this topic, and whether they are mandatory or optional (*see Article 10(3) EDF Regulation*):

Types of activities (art 10(3) EDF Regulation)		Eligible?
(a)	Activities that aim to create, underpin and improve knowledge, products and technologies, including disruptive technologies, which can achieve significant effects in the area of defence (generating knowledge)	Yes (mandatory)
(b)	Activities that aim to increase interoperability and resilience, including secured production and exchange of data, to master critical defence technologies, to strengthen the security of supply or to enable the effective exploitation of results for defence products and technologies (integrating knowledge)	Yes (mandatory)
(c)	Studies , such as feasibility studies to explore the feasibility of new or upgraded products, technologies, processes, services and solutions	Yes (mandatory)
(d)	Design of a defence product, tangible or intangible component or technology as well as the definition of the technical specifications on which such a design has been developed, including any partial test for risk reduction in an industrial or representative environment	Yes (mandatory)
(e)	System prototyping ⁵ of a defence product, tangible or intangible component or technology	No
(f)	Testing of a defence product, tangible or intangible component or technology	No
(g)	Qualification ⁶ of a defence product, tangible or intangible component or technology	No
(h)	Certification ⁷ of a defence product, tangible or intangible component or technology	No

⁵ 'System prototype' means a model of a product or technology that can demonstrate performance in an operational environment.

⁶ 'Qualification' means the entire process of demonstrating that the design of the product, component or technology meets the specified requirements, providing objective evidence by which particular requirements of a design are demonstrated to have been met.

⁷ 'Certification' means the process by which a national authority certifies that the product, component or technology complies with the applicable regulations.

Types of activities (art 10(3) EDF Regulation)		Eligible?
(i)	Development of technologies or assets increasing efficiency across the life cycle of defence products and technologies	No

Accordingly, the proposals must cover the following tasks as part of mandatory activities:

- Generating knowledge:
 - Development of novel algorithms and methods for the previously mentioned challenging scenarios including difficult functionalities. Development and simulation of the specific innovative waveforms to be used. Development of scenarios where challenging targets should be included.
 - Generating knowledge on the application of cognitive techniques (e.g., AI techniques like reinforcement learning) for adaptive waveform and beamforming design, signal processing (e.g., inverse synthetic aperture radar (ISAR)) and radar resource management, aimed at improving clutter mitigation, signal to noise ratio (SNR) enhancement and target classification development and improvement. Particularly, research to define and learn decision-making policies in unknown dynamic environments.
 - Development of innovative spectrum sensing techniques and waveform design algorithms to capitalise spectrum awareness to face with spectrally crowded scenarios.
 - Research and development of new electronic sensing/electronic attack/electronic protection (ES/EA/EP) techniques incorporating advanced and sophisticated algorithms. Develop and apply AI/ML or other methods to modern EW to probe, sense and characterise threats and then automatically generate countermeasures to new types of threats in real-time autonomously and adaptively.
 - Studies on innovative solutions for environmental antenna protection for efficient multi and wideband operations (up to Ka-band).
 - Research on EU Multifunctional RF AESA enabling technologies and architectures optimised to specific scenarios (improving the size, weight and power – SWaP – when imposed by the platform) maturing compact and high-performance building blocks including, but not limited to, RF antennas, front ends and digital hardware (HW).
 - Incorporate Modelling & Simulation, digital twin techniques and methodologies from the beginning in order to have a deeper insight of the real system behaviour from the concept development until system development, operation and end of life covering the entire lifecycle.
 - Improvement of inverse synthetic aperture radar (ISAR) techniques;
- Integrating knowledge:
 - Studies on different concepts and architectures of radar systems, including stationary vs. mobile, multiband/multichannel/multifunction

or passive vs. active to understand the benefits and possibilities of the different options and configurations for challenging targets.

- Integration capabilities with respect to RF, microwave, electronics or processing as enablers for the development of new systems and architectures that can confer superiority against the adversary.
- Research on the integration of the functionalities given by radar and electronic warfare together with the communication functionality, when feasible and advantageous to achieve a multifunctional capability.
- Feasibility studies:
 - Feasibility studies of the selected technologies for the optimised functions in specific configurations including multifunction.
 - Studies on digital engineering methodology adoption within the design and development cycle i.e., digital twin implementation and modelling.
 - Research on passive radars technology with the analysis of the feasibility and availability of different illuminators of opportunity (IOs).
 - Study to explore ubiquitous 3-D radar concepts and evaluate possible performance benefits enabled by new system architectures consisting of a rose of equi-spaced staring beams over 360 degrees, which can be steered in elevation (i.e., multibeam architectures and cylindrical arrays), especially in terms of enhanced Doppler characterisation of targets with respect to conventional 3-D radar.
- Design:
 - Design a multifunction RF sensor based in compact AESA antennas with the multiplicity of characteristics requested: active/passive, single band or multiband, multiplatform, stationary and mobile. It should be able to select the most appropriated configuration for each specific kind of target.
 - Design and develop demonstrators of the subsystems, techniques and components necessary to achieve the previously mentioned system.
 - Modelling of new processing algorithms of radar, EW and possibly communications as part of a potential future digital twin/simulator, enabler for the optimisation of a multifunction system.

The proposals must substantiate synergies and complementarities with foreseen, ongoing or completed activities in the field of sensors, notably those described in the call topics EDF-2021-SENS-R-RADAR related to *Advanced radar technologies* and PADR-EMS-2019 related to *Electromagnetic Spectrum Dominance*.

Additionally, the proposals should substantiate synergies and complementarities with the foreseen activities as described in the call topics EDF-2023-DA-SENS-GRID⁸ related to *Sensor grid*, EDF-2023-RA-SENS-EMSP⁹ related to *Electromagnetic signal propagation*, and EDF-2024-DA-C4ISR-AIMA related to *AI-based multifunctional AESA SD transceiver*.

⁸ [Funding & tenders \(europa.eu\)](https://funding.tenders.europa.eu)

⁹ [Funding & tenders \(europa.eu\)](https://funding.tenders.europa.eu)

Functional requirements

The proposed product and technologies should meet the following functional requirements:

- The architecture of the multifunctional system should allow the integration of existing and new technologies and should follow an integrated modular and scalable architecture (IMOSA) paradigm.
- The design and architecture of the sub-systems and the technologies to be integrated in mobile small platforms should be modular, SWaP-C scalable, supporting miniaturisation.
- Capability of airborne/ground/seaborne targets detection and tracking of challenging threats including stealth, hypersonic missiles/glide vehicles, TBM and drones together with cognitive radar management and processing methods.
- Target recognition should exploit techniques like ISAR, range-Doppler as well as micro-Doppler signature information and enhance system capabilities thanks to AI/ML classification algorithms.
- Increase the survivability and resilience of common future European radar surveillance systems by flexible use of active and passive modes to augment each other or replace if necessary.

Expected impact

The outcome should contribute to:

- More precise and valid situational awareness information through the flexible use of cognitive capabilities in an RF sensor system combining multiple functions like radar, electronic warfare and, (when viable and beneficial) communications, through multiple bands and agile waveforms, working in active or passive modes to strengthen the recognised air/ground/maritime picture.
- Standardisation of hardware, waveforms, software, data transmission protocols, data format, procedures etc., within the framework of an interoperable, modular and scalable architecture, in order to increase interoperability among participating parties and existing or designed products.
- Reduction of the electromagnetic spectrum use and achievement of the higher level of survivability of the overall system, and particularly for the platforms involved, through the development and integration of cognitive capabilities.
- Demonstration of the capacity and feasibility of the different innovations developed in the project through tangible and measurable results.

EDF-2024-RA-DIGIT-ASMEP: Automated structural modelling for effect prediction

Objectives

The effects of attacks on structures such as buildings, plants, oil tanks, pipelines, bridges, dams, etc., are a common subject of concern to military planners and engineers, weaponeers, munition designers, battle damage assessors, and modelling and simulation analysts and developers. However, predicting such effects currently involves a large uncertainty due to the difficulty in estimating the relevant characteristics of these structures. There is therefore a need to efficiently estimate

such characteristics from available data such as imagery or documentation and to combine them with effect prediction models to provide reliable predictions. During operations, this should be performed in a limited time and possibly with limited available computing power. This is especially important for relatively large urban areas including many structures.

Software solutions for automated structural modelling and effect prediction should therefore be developed. They should offer the best possible accuracy, and trust should be ensured in the measurement of their performances. Given the complexity of the task, they need to rely not only on physics-based models but also on artificial intelligence, and they should be evaluated in an objective manner on data that is representative of the targeted use cases. This involves the collection and annotation of representative data. In order to ensure the reproducibility of experiments and for economic reasons, it is important that such data is reusable for similar developments, including by other technology developers. It also involves the testing of systems on new data using documented metrics and testing protocols, in a way that ensures comparability with similar systems developed by such other actors.

Models for the prediction of effects of weapons on structures are often used in conjunction with other models in decision support tools, for example to estimate freedom of manoeuvre or effectiveness of communication. Scalability and compatibility with such other models and tools should therefore be ensured.

Scope and types of activities

Scope

Proposals must address the development and evaluation of software systems for modelling structures from multisource imagery and other relevant available data, and for accurately predicting the effects of weapons on these structures. This includes the collection of relevant databases for training and testing the systems.

Types of activities

The following table lists the types of activities which are eligible for this topic, and whether they are mandatory or optional (*see Article 10(3) EDF Regulation*):

Types of activities (art 10(3) EDF Regulation)		Eligible?
(a)	Activities that aim to create, underpin and improve knowledge, products and technologies, including disruptive technologies, which can achieve significant effects in the area of defence (generating knowledge)	Yes (mandatory)
(b)	Activities that aim to increase interoperability and resilience, including secured production and exchange of data, to master critical defence technologies, to strengthen the security of supply or to enable the effective exploitation of results for defence products and technologies (integrating knowledge)	Yes (mandatory)
(c)	Studies , such as feasibility studies to explore the feasibility of new or upgraded products, technologies, processes, services and solutions	Yes (optional)
(d)	Design of a defence product, tangible or intangible component or technology as well as the definition of the technical specifications on which such a design has been developed, including any partial test for risk reduction in an industrial or representative environment	Yes (optional)

Types of activities (art 10(3) EDF Regulation)		Eligible?
(e)	System prototyping ¹⁰ of a defence product, tangible or intangible component or technology	No
(f)	Testing of a defence product, tangible or intangible component or technology	No
(g)	Qualification ¹¹ of a defence product, tangible or intangible component or technology	No
(h)	Certification ¹² of a defence product, tangible or intangible component or technology	No
(i)	Development of technologies or assets increasing efficiency across the life cycle of defence products and technologies	No

Accordingly, the proposals must cover at least the following tasks as part of mandatory activities:

- Generating knowledge:
 - Research on automatic and semi-automatic modelling of structures from imagery and other relevant sources of information, as well as on effect prediction models, aiming at optimising the overall accuracy of effect predictions.
- Integrating knowledge:
 - Collection and annotation of representative data enabling to train and test the systems.
 - Integration of the system processing modules into demonstrators.

In addition, the proposals may also cover the following tasks:

- Generating knowledge:
 - Participation in objective and comparative evaluation campaigns or technological challenges, notably those that may be organised in the context of the EDF call topic EDF-2024-LS-RA-CHALLENGE-SPACE-MSIAO on *Multi-source satellite image analysis*;

The proposals should substantiate synergies and complementarities with foreseen, ongoing, or completed activities in the fields of automated structural modelling and effect prediction.

Functional requirements

The proposed product and technologies should meet the following functional requirements:

¹⁰ 'System prototype' means a model of a product or technology that can demonstrate performance in an operational environment.

¹¹ 'Qualification' means the entire process of demonstrating that the design of the product, component or technology meets the specified requirements, providing objective evidence by which particular requirements of a design are demonstrated to have been met.

¹² 'Certification' means the process by which a national authority certifies that the product, component or technology complies with the applicable regulations.

- Systems should take as input various sources of information such as satellite or aerial images (optical, IR, radar, SAR, LiDAR, etc.) and documentation if available, and estimate structural features, such as position, dimensions and composition in terms of materials of structures in specified areas. Ground and soil characteristics may also be estimated if relevant for effect prediction.
- The estimated structural models should be usable in effect prediction tools. They should enable users to estimate the degree of damage to targeted structures and their surroundings, as a function of the nature and size of the weapons used. They should also enable to estimate the potential levels of casualties depending on the nature of an attack and of the estimated human presence in a given area. Secondary effects such as window shattering should be taken into account.
- The models should lead to maximum accuracy prediction on representative databases. Reproducibility of the measurements should be ensured, by participating in existing technological challenges whenever relevant, or by organising test campaigns open to other actors if needed.
- The databases foreseen for training and testing the systems should be described in the proposals. These databases should be reusable beyond the project. The foreseen organisational and technical framework for such data sharing should be described in the proposals. In particular, the entity or entities in charge of the data production and distribution should be clearly identified in the proposals.
- Systems should allow non-expert users to evaluate effects of a certain threat over a specific target. They should also provide signatures of such targets, e.g., radar signatures. Systems should also be able to use expert user inputs in order to produce structural models in a semi-supervised manner. Demonstrators should include a user interface enabling these users to supervise the model production.
- Models and systems should be scalable and compatible with broader models supporting decision making beyond the prediction of attack effects.

Expected impact

The outcomes can not only have a positive impact on a wide range of military activities, but may also have a dual use potential. They should in particular contribute to:

- Enhanced decision-making for operational planning activities such as targeting activities, planning of indirect fires or aerial bombings over enemy positions in urban areas, while limiting the risks of collateral damages.
- Vulnerability assessment, protection, and improvement of own infrastructure and prediction of impacts on infrastructure and operations due to e.g., natural hazards such as seismic events and tsunamis.

EDF-2024-RA-AIR-AAM: Concept study on advanced air-to-air missiles

Objectives

General objective

Air-to-air combat is a challenging and interdisciplinary field in a high-threat and time-critical environment. The air-to-air missiles currently in service are generally of a good technological standard. However, the requirements for all aspects of such

missiles are constantly increasing in number and complexity. Given this environment, it is conceivable that future air-to-air missiles will need to be designed and operate differently.

The key challenge is to prepare for the development of a missile that can counter future air threats on an economically viable basis.

Specific objective

The main objective is therefore to develop at European level concepts and operational requirements for a short-range air-to-air missile (SRAAM) to primarily counter modern 5th and future 6th generation combat aircraft and other airborne threats, such as UAS and cruise missiles. Opportunities and limitations are to be explored in various disciplines, such as image processing, target detection, navigation sensors, missile hardware related to kinematic properties, propulsion, warhead unit design, missile guidance, missile control, multi-sensor data fusion, missile computer architecture design, advanced materials (e.g., morphing materials), new production techniques and network integration.

The research activities performed are expected to mature relevant technologies up to TRL¹³ 5-6.

Scope and types of activities

Scope

Proposals must address the definition of requirements for a Future Short-Range Missile (FSRM) to be primarily used on combat aircraft for air-to-air applications, as well as a modular interceptor concept to minimise impact on aircraft integration and maximise internal carriage capacity.

In addition, proposals must address the possibility to use the FSRM or its components for a ground-based air defence application.

The proposals may also explore combined mode operations (i.e., air-to-air and air-to-ground) for the FSRM.

Types of activities

The following table lists the types of activities which are eligible for this topic, and whether they are mandatory or optional (*see Article 10(3) EDF Regulation*):

Types of activities (art 10(3) EDF Regulation)		Eligible?
(a)	Activities that aim to create, underpin and improve knowledge, products and technologies, including disruptive technologies, which can achieve significant effects in the area of defence (generating knowledge)	Yes (optional)
(b)	Activities that aim to increase interoperability and resilience, including secured production and exchange of data, to master critical defence technologies, to strengthen the security of supply or to enable the effective exploitation of results for defence products and technologies (integrating knowledge)	Yes (optional)

¹³ Technology readiness level.

Types of activities (art 10(3) EDF Regulation)		Eligible?
(c)	Studies , such as feasibility studies to explore the feasibility of new or upgraded products, technologies, processes, services and solutions	Yes (mandatory)
(d)	Design of a defence product, tangible or intangible component or technology as well as the definition of the technical specifications on which such a design has been developed, including any partial test for risk reduction in an industrial or representative environment	Yes (optional)
(e)	System prototyping ¹⁴ of a defence product, tangible or intangible component or technology	No
(f)	Testing of a defence product, tangible or intangible component or technology	No
(g)	Qualification ¹⁵ of a defence product, tangible or intangible component or technology	No
(h)	Certification ¹⁶ of a defence product, tangible or intangible component or technology	No
(i)	Development of technologies or assets increasing efficiency across the life cycle of defence products and technologies	No

Accordingly, the proposals must cover at least the following tasks as part of mandatory activities:

- Studies:
 - Analyse the operational requirements for future FSRM, using IR with extended visual range or RF or combining both technologies, to primarily counter modern 5th and future 6th generation combat aircraft and other airborne threats such as UAS and cruise missiles.
 - Analyse readiness and accessibility of relevant technologies in the European market, in particular in the field of target detection, acquisition and tracking, as well as, but not limited to, image processing, infrared imaging seeker, navigation sensors, guidance laws, missile hardware structure, propulsion, war head unit design, fusing, guidance and control, multi-sensor data fusion, missile computer architecture.
 - Define missile concepts and evaluate them against the identified operational requirements, including the use of a standardised missile simulation.
 - Analyse the extent to which the FSRM can be economically viable in terms of low development, maintenance, integration and production

¹⁴ 'System prototype' means a model of a product or technology that can demonstrate performance in an operational environment.

¹⁵ 'Qualification' means the entire process of demonstrating that the design of the product, component or technology meets the specified requirements, providing objective evidence by which particular requirements of a design are demonstrated to have been met.

¹⁶ 'Certification' means the process by which a national authority certifies that the product, component or technology complies with the applicable regulations.

costs, with a consistent European supply chain, including during a prolonged active conflict.

- Analyse the operational and technical requirements for the FSRM or its components to be used for a ground-based air defence application.
- Analyse the possibility of using a close loop follow on support based on a state-of-the-art prognostics and health management methodology of the FSRM.

In addition, proposals may also analyse any operational and technical requirements in view of possible combined (i.e., air-to-air and air-to-ground) operations for the FSRM.

Functional requirements

The proposed product and technologies should meet the following functional requirements:

- The envisioned FSRM should achieve a high kill probability against a variety of airborne threats, primarily against modern 5th and future 6th generation combat aircraft as well as UAS and cruise missiles, but other airborne threats may also be considered (e.g., large aircraft, light attack aircraft, helicopters, medium-range air defence missiles, air-to-air missiles and similar threats/objects, etc.);
- It should include High Off-Boresight (HOBS) abilities and lock-on after launch capabilities;
- It should be resilient to countermeasures, depending on the technologies foreseen for the FSRM and for the targeted aerial threats;
- Model assessment should be performed in a simulation-driven environment with digital-twin missile concept.

Expected impact

The outcome should contribute to enhancing the readiness of the EU Member States and the European Technological and Industrial Base (EDTIB) for any further development of state-of-the-art future air-to-air missiles, by:

- Boosting missile technology within the EDTIB.
- Improving the Member States' and EDF Associated Countries' understanding of operational requirements for a FSRM, including benefits from key technologies.

EDF-2024-RA-AIR-UCCAS-STEP: Unmanned collaborative combat aircraft systems

Objectives

General objective

It is an overarching challenge for the EU and EDF Associated Countries to develop a consolidated common perspective on the long-term applications, requirements, solution concepts and technology needs for an advanced EU Unmanned Collaborative

Combat Aircraft (U-CCA) system to support the 5th and 6th generation fighter in a highly contested A2/AD¹⁷ environment, also in regards to interoperability with NATO.

U-CCA systems could be conceived as unmanned aerial multirole systems, part of a System of System (SoS), aimed at combined air operations, which are able to act in teaming with lower autonomy levels agents and manned platforms in order to execute tasks in various operational scenarios, while revealing extended survivability capability.

Although development studies have been underway for some time in the main European aeronautical companies, with the financial support of the respective EU Member States and EDF Associated Countries, the added value of this topic lies in the development of a common vision for a U-CCA system and its related high-level requirements.

Specific objective

This topic aims to explore technologies, concepts, products, processes and services related to U-CCA systems in different possible configurations. These U-CCA systems are expected to be combat ready, hence highly manoeuvrable and, depending on the mission assigned, they should also be able to collect multispectral information from large areas, while identifying and countering potential threats in a wide range of missions including, but not limited to, defensive and offensive counter air, anti-surface warfare (ASuW) and suppression/destruction of enemy air defences (SEAD/DEAD), in a highly contested environment.

The U-CCA system should therefore be characterised by a high degree of autonomy and operational effectiveness, a large reconfigurable payload capacity and a flight envelope that allows teaming with fighters, including, but not limited to, with 5th and 6th generation, and support to other future aerial platforms in the context of a SoS approach for future combined air operations, including its expendability in specific imputable scenarios.

Scope and types of activities

Scope

Proposals must address feasibility studies and preliminary design to explore new/improved concepts, configurations, mission architectures, flight and mission functions, disruptive technologies related to U-CCA systems, and trusted autonomy levels for effective networked operations including manned-unmanned teaming (MUM-T) in demanding denied/contested environments.

Types of activities

The following table lists the types of activities which are eligible for this topic, and whether they are mandatory or optional (*see Article 10(3) EDF Regulation*):

Types of activities (art 10(3) EDF Regulation)		Eligible?
(a)	Activities that aim to create, underpin and improve knowledge, products and technologies, including disruptive technologies, which can achieve significant effects in the area of defence (generating knowledge)	Yes (optional)

¹⁷ Anti-Access/Area Denial.

Types of activities (art 10(3) EDF Regulation)		Eligible?
(b)	Activities that aim to increase interoperability and resilience, including secured production and exchange of data, to master critical defence technologies, to strengthen the security of supply or to enable the effective exploitation of results for defence products and technologies (integrating knowledge)	Yes (optional)
(c)	Studies , such as feasibility studies to explore the feasibility of new or upgraded products, technologies, processes, services and solutions	Yes (mandatory)
(d)	Design of a defence product, tangible or intangible component or technology as well as the definition of the technical specifications on which such a design has been developed, including any partial test for risk reduction in an industrial or representative environment	Yes (mandatory)
(e)	System prototyping ¹⁸ of a defence product, tangible or intangible component or technology	No
(f)	Testing of a defence product, tangible or intangible component or technology	No
(g)	Qualification ¹⁹ of a defence product, tangible or intangible component or technology	No
(h)	Certification ²⁰ of a defence product, tangible or intangible component or technology	No
(i)	Development of technologies or assets increasing efficiency across the life cycle of defence products and technologies	No

Accordingly, the proposals must cover at least the following tasks as part of the mandatory activities:

- Studies:
 - Define potential use cases, scenarios and applications in a wide range of operations, in particular in terms of natural environment, type of targets and air defence capabilities, levels of autonomy, rules of engagement with other cooperative and non-cooperative platforms, allocation of roles, interoperability and cyber protection;
 - Define technical requirements in line with high level operational requirements to be provided by the supporting Member States and EDF Associated Countries;
 - Define U-CCA concepts to be evaluated in view of operational effectiveness against identified metrics;

¹⁸ 'System prototype' means a model of a product or technology that can demonstrate performance in an operational environment.

¹⁹ 'Qualification' means the entire process of demonstrating that the design of the product, component or technology meets the specified requirements, providing objective evidence by which particular requirements of a design are demonstrated to have been met.

²⁰ 'Certification' means the process by which a national authority certifies that the product, component or technology complies with the applicable regulations.

- Explore current and foreseen technologies in the EU supply chain with regard to U-CCA and respective technological enablers, and identify roadmaps leading to feasible architectures and configurations through a complete and integrated approach, with a view to:
 - Identify, for each possible U-CCA configuration, a structural concept with assessed and consolidated aerodynamic, stability, controllability, launch and recovery and disassembly characteristics;
 - Identify and analyse advanced flight technologies and navigation concepts, propulsion logics and systems, including smart thermal/energy management and related AI-driven solutions;
 - Increase knowledge on advanced autonomy logics and algorithms (such as those related to autonomous emergency behaviour management system, trusted autonomy, cooperative autonomy, accelerated decision making), with reference to existing autonomy taxonomy, e.g., from NATO;
 - Enhance aircraft flight technology, logics and systems, including smart actuation and related AI-driven solutions;
 - Identify a suitable Open System Architecture for U-CCA;
 - Increase knowledge on advanced systems in terms of sensors, communication systems and effectors, to be evaluated through installation surveys;
 - Define interoperability requirements so as to be operated together with multiple assets including fighter aircraft, motherships and other UAS;
 - Identify the enablers for connectivity with future manned and unmanned combat aircraft (e.g., remote carriers and smart weapons including the cruise missiles) for supporting the more demanding operational scenarios (including sea and ground combat operations in contested and highly contested environments);
 - Carry out parametric studies, for instance, but not limited to, structured MBSE (Model-Based System Engineering) work methodology, to identify the critical parameters and merit criteria that could later be useful to assess the goodness of each configuration;
 - Identify the requirements for the development of integrated training systems to enable the training path and associated assets to mature, in line with the evolution of military pilot training concepts and the highest levels of interoperability between future manned and unmanned aerial platforms;
 - Suggest considerations to Member States and EDF Associated Countries regarding development, procurement, impact on training, basing and/or storage of platforms, spares, raw materials and operations, as well as hybrid warfare;

- Design:
 - Develop a Trusted Autonomy Methods & Validation;
 - Design and implement a digital twin methodology for requirement refinement and validation, concept optimisation and assessment supported by modelling of operational scenarios and reference missions and by simulation tools at mission and system / sub-system levels.

The proposals should also address the design of a preliminary demonstrator of U-CCA to prove the feasibility of the proposed concept.

The proposals should substantiate synergies and complementarities with foreseen, ongoing or completed activities in the field of training systems, notably those described in the call topics EDIDP-ACC-CJTP-2019²¹ related to *Combat jet training platforms* and EDF-2021-AIR-D-CAC²² related to *European interoperability standard for collaborative air combat*.

Functional requirements

Depending on each configuration to be explored, the proposed product and technologies should meet the following functional requirements:

- The U-CCA system should be able to operate in the foreseen future combined air operations as part of a System of Systems, including in joint missions and operations, within a fleet of mixed air systems and platforms, hence able to:
 - Autonomously take-off and land, with means depending on its final configuration;
 - Automatically plan the mission task;
 - Carry a multitude of mission configurable payloads, depending on the mission and role of the U-CCA in the SoS;
 - Execute tasks (based on priorities and high-level control of the C2²³ and other SoS assets) to perform the mission assigned;
 - Dynamically re-plan the mission to minimise exposure to threats, react to unpredicted events, cope with task changes, replace other unavailable SoS components;
 - Sense, detect, deconflict and engage with collaborative and non-collaborative aerial assets;
 - Autonomously fly in formation, including route following and re-joining with other manned and unmanned SoS components.
- The U-CCA system should include:
 - Flight & Mission Autonomy;
 - Improved survivability allowing to operate in highly contested and spectrum denied scenarios;

²¹ [Funding & tenders \(europa.eu\)](https://europea.eu).

²² [Funding & tenders \(europa.eu\)](https://europea.eu).

²³ Command and Control.

- Cooperative Autonomy – Swarming and MUM-T allowing human to take control in an efficient way, whenever needed, while reaching the overall mission objectives;
- Connectivity/interoperability management principles to set up secure, resilient, agile communication infrastructure and architecture and to provide connectivity services.

Expected impact

The outcome should contribute to:

- the emergence of a consolidated EU perspective for U-CCA systems in EU Member States and EDF Associated Countries and for the EDTIB²⁴;
- reduce dependencies on non-European suppliers by boosting the EDTIB and promoting the development of a European solution;
- more effective multi-role and networked operations, including MUM-T, collaborative operations in spectrum-constrained environments and swarming formation;
- improvement of the degree of autonomy of unmanned systems, while still allowing humans to take control whenever needed;
- increase operational capability by identifying new concepts and options for dispersed basing of U-CCAs;
- the identification of potential “quick-wins” in the context of U-CCA solutions;
- the generation of prerequisites and inputs for the long-term development of future EU/NATO U-CCA perspective, with a view to reduce the fragmentation in EU UAS fleets;
- air combat solutions able to reduce the exposure of risk to humans, with a more precise effectiveness to reduce the collateral effects;
- the interoperability between EU armed forces and with NATO Allies.

EDF-2024-RA-GROUND-IWAS: Intelligent weaponry and ammunition systems

Objectives

General objective

In the context of future armed conflicts, greater focus is likely to be placed on the precision, the effectiveness and the affordability of ammunition and missiles in order to increase the capacity to neutralise adversary forces while avoiding unintended casualties and collateral damages among friendly units and non-combatant third parties.

Research activities to develop for next generation of European intelligent ammunition is required to enhance Member States precision strike capabilities.

Specific objective

There is a request to extend the range of ground artillery, rockets and missiles, while increasing their precision. Currently, existing solutions to correct the course of gun

²⁴ European Defence Technological and Industrial Base.

launched ammunition are either ITAR or do not fully achieve the required precision. European related research efforts have been modest in the past years. A few concepts have matured to become commercialised products, though with limited performance.

This topic aims to pave the way for the development of an autonomous European state-of-the-art capability in the field of high precision weaponry, such as guided mortar and artillery ammunition (shells and rockets), missiles, and other munitions with loitering capabilities. Such systems should aim to increase precision in Global Navigation Satellite System (GNSS)-contested/denied environments, reduce dependency on non-EU satellite navigation, and improve terminal guidance and effects on targets at extended ranges, as well as providing more affordable solutions. The use of data fusion techniques and high accuracy Micro-Electro-Mechanical Systems for Inertial Measurement Units (MEMS IMU) should be considered.

Scope and types of activities

Scope

Proposals must address:

- Technologies for increasing ammunition precision guidance, navigation and control, particularly in GNSS-contested/denied environments.
- Technologies for improving terminal guidance of ammunition, in particular for engaging moving targets at speed and concealed targets.
- Technologies for maximising effects on targets at extended ranges, with the possibility of scaling effects, abort mission or re-targeting during flight.

In addition, proposals should address:

- High accuracy, MEMS IMU and data fusion techniques.
- Navigation solution based on GNSS should have Galileo PRS as main source of positioning and timing.
- Terminal guidance capabilities (e.g., based on Semi-active laser (SAL) or image guidance systems like Imaging infrared (IIR)).

Furthermore, proposals may address:

- Concepts for introducing guidance or course correction to legacy munitions by using existing interfaces, such as the fuze-well in artillery shells.
- Technologies for loitering capability.
- Technologies for collaborating/swarm with other munition capability.

AI algorithms applied to guidance, navigation and control, even to moving targets and target detection.

Types of activities

The following table lists the types of activities which are eligible for this topic, and whether they are mandatory or optional (*see Article 10(3) EDF Regulation*):

Types of activities (art 10(3) EDF Regulation)		Eligible?
(a)	Activities that aim to create, underpin and improve knowledge, products and technologies, including disruptive technologies, which can achieve significant effects in the area of defence (generating knowledge)	Yes (mandatory)
(b)	Activities that aim to increase interoperability and resilience, including secured production and exchange of data, to master critical defence technologies, to strengthen the security of supply or to enable the effective exploitation of results for defence products and technologies (integrating knowledge)	Yes (mandatory)
(c)	Studies , such as feasibility studies to explore the feasibility of new or upgraded products, technologies, processes, services and solutions	Yes (mandatory)
(d)	Design of a defence product, tangible or intangible component or technology as well as the definition of the technical specifications on which such a design has been developed, including any partial test for risk reduction in an industrial or representative environment	Yes (mandatory)
(e)	System prototyping ²⁵ of a defence product, tangible or intangible component or technology	No
(f)	Testing of a defence product, tangible or intangible component or technology	No
(g)	Qualification ²⁶ of a defence product, tangible or intangible component or technology	No
(h)	Certification ²⁷ of a defence product, tangible or intangible component or technology	No
(i)	Development of technologies or assets increasing efficiency across the life cycle of defence products and technologies	No

Accordingly, the proposals must cover at least the following tasks as part of mandatory activities:

- Generating and Integrating knowledge:
 - Perform a threat assessment, taking into account the modern battlefield, lessons learned from current peer-to-peer conflicts, and deployed or about to be deployed advanced technologies.
 - Develop research activities for maturing identified technologies;
- Studies:
 - Feasibility studies concerning proposed technologies.

²⁵ 'System prototype' means a model of a product or technology that can demonstrate performance in an operational environment.

²⁶ 'Qualification' means the entire process of demonstrating that the design of the product, component or technology meets the specified requirements, providing objective evidence by which particular requirements of a design are demonstrated to have been met.

²⁷ 'Certification' means the process by which a national authority certifies that the product, component or technology complies with the applicable regulations.

- Design:
 - Develop technologies suite to TRL 6.
 - Preliminary definition and design of the proposed components and technologies.
 - Detailed definition of the proposed components and technologies.

The proposals should substantiate synergies and complementarities with foreseen, ongoing, or completed activities in the field of ammunitions, notably those described in the context of previous EDF calls for proposals (e.g., EDF-2023-DA-GROUND-IFS²⁸ related to *Indirect fire support*) and its precursor programmes (e.g., EDIDP-NGPSC-PGA-2020²⁹ related to *A Platform for long range indirect fire support capabilities* and EDIDP-NGPSC-LRIF-2020³⁰ related to *Programmable and guided ammunition*).

Functional requirements

The proposed product and technologies should meet the following functional requirements:

- Defeat semi-hard and hard targets, via the delivery of a heavy payload, with the possibility to tune the effect according to the mission;
- Terminal precision below 10 meters (CEP³¹50), proven either by system in the loop simulation or live firing;
- Integrated target detection and terminal guidance capability, be based on Semi-active laser (SAL) and/or Imaging infrared (IIR), other imagery systems or any other solutions, such as enabling technologies for Multi-Mode seeker systems (e.g., EO, IR, RF). Such systems should be effective against both moving and stationary targets;
- Flight-guided by GNSS and/or inertial measurement unit and/or any other cost-effective means. If GNSS guidance, the system should be compatible with both GPS and Galileo;
- Resistance to GNSS jamming and spoofing and operable in GNSS contested environments;
- Concepts for mortars and artillery ammunition should prove gun-firing capability;
- Concepts for 155 mm artillery ammunition should be compliant with the Artillery JB MoU³² and be tested in a proven 155 mm 52-calibre artillery gun;
- The ammunition should be programmable before firing, with minimum interference with the weapon system;
- The setting of the artillery fuze should be able to be conducted at least through inductive settings according to commonly applicable standards in order to allow its use in platforms with embedded inductive fuze systems;

²⁸ [Funding & tenders \(europa.eu\)](#).

²⁹ [Funding & tenders \(europa.eu\)](#).

³⁰ [Funding & tenders \(europa.eu\)](#).

³¹ Circular error probable.

³² Joint Ballistics Memorandum of Understanding - [220870.pdf \(state.gov\)](#).

- In-flight re-targeting capability (including mission change and/or a mission abort when needed) should be assessed for the different categories of ammunition;
- Resilient communications to ensure a human-in-the-loop capability (avoiding target control and/or designation by unauthorised actions) in case the concept is not based on a fire-and-forget approach. The system should be Cyber resilient;
- Performances should be achieved without modifying the requirement of existing European launchers;
- In case of a concept based on course-correction fuze, it should be aimed at replacing traditional fuzes on standard artillery ammunition with a combined fusing and guidance kit and preferably shallow fuze-well compatibility;
- Ammunition safety of use should be as high as possible, as per the best standards related to life duration and insensitiveness to aggressions. Compliance with NATO STANAG 4439³³ (related to insensitive munition) and STANAG 4187³⁴ (related to safety) should be ensured as far as possible;
- Open architecture and modularity should be applied on smart guided ammunition families, allowing different software versions (algorithms / libraries) to be loaded in the same hardware version;
- ITAR-free in all components. All components of the concept for later integrative components (SAD, additional Ignition chains, et.al.) should also be investigated and ITAR-free and fulfil European requirements (REACH).

Expected impact

The outcome should contribute to:

- 2023 EU CDP³⁵ on Land Based Precision Engagement;
- High Precision effects and minimum collateral damage for engaging selected difficult-to-identify/acquire targets;
- Engage critical and time sensitive areas and point targets including threat air defence, missile launchers, tactical operation centres and assembly areas;
- European tangible capabilities in intelligent weaponry and ammunition systems for different missions;
- EU mastery of technological building blocks and strategic autonomy on smart ammunition;
- Ensure EU capability in smart guided/precision ammunition for different applications.

³³ <https://nso.nato.int/nso/nsdd/main/standards?search=4439>

³⁴ <https://nso.nato.int/nso/nsdd/main/standards?search=4187>

³⁵ [qu-03-23-421-en-n-web.pdf \(europa.eu\)](https://europa.eu/press-communication/infographic/infographic-qu-03-23-421-en-n-web)

EDF-2024-RA-PROTMOB-FMTC: Future mid-size tactical cargo aircraft

Objectives

General objective

Tactical transport aircrafts are the workhorses of battlefields, fulfilling missions like airdrop delivery, parachutist drop, logistics, medical evacuation (MEDEVAC), air to air refuelling, special missions under harsh and adverse conditions, which are critical for the success of military operations. Operations in hostile environments demand e.g., built in electronic warfare self-protection systems, and set requirements on the platform performance/build up in order to be suitable for the task, and furthermore to operate with limited ground infrastructure (e.g., unprepared runways).

Beyond their pure military role, tactical transport aircrafts are also key assets for a better civil defence/protection and EU-internal needs, with critical contribution to disaster relief, search-and-rescue, and sanitary crises response.

Besides the A400M, which is on the high-performance side of the capacity, the initial conception of the majority of currently operating tactical aircraft (C130) is now 40 years old, and there is a need for a new medium tactical European aircraft, lighter than the A400M that could provide a complementary capacity for tactical transport.

Currently, some EU Member States are operating medium payload tactical military transport -aircrafts within their fleet, which can be replaced with growing capabilities, able to cope with the envisaged operational challenges.

Specific objective

This topic is an opportunity for Europe to federate efforts by providing the EU defence community (EU Members States, EDF Associated Countries and industry) with robust elements to decide what the 2035+ future of EU military tactical transport could be.

By maturation of the required technologies and innovations, this topic aims to lower the risks for the Future Mid-size Tactical Cargo aircraft (FMTC) capability development and therefore the costs for further potential development phases, with a view to possibly enabling first flight of prototype early 2030's.

Scope and types of activities

Scope

Proposal must address the maturation of technologies and the implementation of a state-of-the-art data management system, in two main areas:

- Technology and Concept maturation:
 - Progress on Technology Readiness (TRL) process (objective: achieve TRL5-6 in 2027 benefiting as much as possible on dual-use technology) and technologies selection for FMTC;
 - Mature Aircraft Architecture and Concepts, as selected by the supporting Member States and EDF Associated Countries.
- Implementation of new trends in Data management and In-Service support.

Types of activities

The following table lists the types of activities which are eligible for this topic, and whether they are mandatory or optional (*see Article 10(3) EDF Regulation*):

Types of activities (art 10(3) EDF Regulation)		Eligible?
(a)	Activities that aim to create, underpin and improve knowledge, products and technologies, including disruptive technologies, which can achieve significant effects in the area of defence (generating knowledge)	Yes (mandatory)
(b)	Activities that aim to increase interoperability and resilience, including secured production and exchange of data, to master critical defence technologies, to strengthen the security of supply or to enable the effective exploitation of results for defence products and technologies (integrating knowledge)	Yes (mandatory)
(c)	Studies , such as feasibility studies to explore the feasibility of new or upgraded products, technologies, processes, services and solutions	Yes (mandatory)
(d)	Design of a defence product, tangible or intangible component or technology as well as the definition of the technical specifications on which such a design has been developed, including any partial test for risk reduction in an industrial or representative environment	Yes (optional)
(e)	System prototyping ³⁶ of a defence product, tangible or intangible component or technology	No
(f)	Testing of a defence product, tangible or intangible component or technology	No
(g)	Qualification ³⁷ of a defence product, tangible or intangible component or technology	No
(h)	Certification ³⁸ of a defence product, tangible or intangible component or technology	No
(i)	Development of technologies or assets increasing efficiency across the life cycle of defence products and technologies	No

Accordingly, the proposals must cover at least the following tasks as part of mandatory activities along the following two main areas:

A-Technology and Concept maturation:

- Multidisciplinary Aircraft optimisation and Flight Physics streams: Develop external layout and overall aircraft performance validation through Digital Twin capabilities complemented by preliminary Wind Tunnel Tests (atmospheric) by using the most appropriate wind tunnel capabilities on low cost scaled and modular Aircraft model.
- Smart Systems stream:

³⁶ 'System prototype' means a model of a product or technology that can demonstrate performance in an operational environment.

³⁷ 'Qualification' means the entire process of demonstrating that the design of the product, component or technology meets the specified requirements, providing objective evidence by which particular requirements of a design are demonstrated to have been met.

³⁸ 'Certification' means the process by which a national authority certifies that the product, component or technology complies with the applicable regulations.

- Mature and implement Integrated Modular Avionics technology with reconfiguration capabilities, also exploiting the use of civilian technologies for aircraft functions and military missions' systems in order to maximise shared computing resources, return of investments, portability and maintenance throughout the life cycle, operational effectiveness and military standards compliance at lower life cycle cost;
- Mature and implement wireless interfaces technology for interconnection of avionics equipment.
- Smart Aircraft flight control for enabling eco-friendly wing functions:
 - Optimising fuel consumption, e.g., with improved electrically powered actuator system, but not limited to them.
 - Optimising tactical capabilities through aerodynamics optimisation.
 - Loads alleviation functions to reduce aircraft structure weight.
- Propulsion and Energy streams:
 - Assess propulsion architectures, including new concepts (e.g., open rotor, low speed propeller);
 - Mature 100% Sustainable Aviation Fuel propulsion compatible technologies;
 - Assess the portability of less bleed and more electrical Aircraft and alternative Propulsion System technologies to military applications, complying with the peculiar missions and requirements;
 - Implement Propulsion contemplated technology, fulfilling the flight and mission performance requirements, while meeting Life Cycle Cost sustainability and affordability criteria;
 - As an option to refine the identification of boundaries between low and high voltage architectures to optimise energy needs, considering design constraints, certification and maintenance aspects;
 - The solution for the engine should be tested in simulation independently of the platform.
- Aerostructure stream:
 - Mature material technologies (light materials and based on full life cycle environment impact analysis), meeting sustainability and affordability criteria;
 - Improve Virtual Structure Testing capabilities to limit physical testing of new technologies to minimise waste for required physical tests.
- Eco friendly Cockpit & Cargo streams:
 - Develop virtual mock-ups for Cockpit and Cargo;
 - Implement Enhanced Human Machine Interface concepts.

- Multi-mission and Connectivity streams:
 - Mature technologies and product architecture enabling flexible and quick aircraft reconfiguration for multi-mission capabilities beyond pure Cargo mission (according to the multi-mission capabilities requirements provided by the supporting Member States, for example, but not limited to: Self Protection, Air-to-Air Refuelling, Medevac, Signal Intelligence, Maritime Patrol, Antisubmarine warfare, Intelligence, Surveillance and Reconnaissance, Airborne Early Warning and Control, Command and Control Centre) and connectivity and interoperability of FMTC in a sovereign and multinational network, preparing it for collaborative and cloud based operations.

B-Implementation of new trends in Data management and In-Service support:

- Implement New Data Management Technology (Combat Cloud readiness to improve interoperability, Improved Data Analytics, Digital Twin for design and manufacturing or other equivalent technologies).
- Implement New In-Service Support Technology (Advance maintenance, Fleet monitoring and Availability enhancement).
- Autonomy, Digitisation and Artificial Intelligence streams:
 - Collaborative Autonomy. Mature technologies for an enhanced flight control, management autonomy and crew decision making (for instance Manned-Unmanned Teaming and Increased Tactical situation awareness, Single Pilot Operation, Automatic Take-off and Landing);
 - Enhanced Autonomy in aircraft subsystems. Improve the use of AI/ML in mission critical and safety critical systems; as well as during the flight checks and fault-detection procedures for instances; in order to increase the overall effectiveness.

In order to ensure no duplication of efforts, the proposals must substantiate synergies and complementarities with foreseen, ongoing or completed activities in the field of transport aircraft, notably those described in the call topic EDF-2022-RA-PROTMOB-FMTC³⁹ related to *Future mid-size tactical cargo aircraft*.

Functional requirements

The proposed product and technologies should meet the following functional requirements:

- Main missions:
 - Should provide tactical air mobility for armed forces by tactical airlift or aerial delivery;
 - Should perform medical evacuation, refuelling on ground (ALARP⁴⁰ and FARP⁴¹) and air-to-air refuelling.

³⁹ [Funding & tenders \(europa.eu\)](https://european-council.europa.eu/media/en/press-communications/infographic/infographic_funding_tenders_europa_eu)

⁴⁰ As Low As Reasonably Practicable.

⁴¹ Forward arming and refuelling point.

- Additional missions:
 - May be able to perform (with modifications/additions) some additional missions.
- Main specifications:
 - Should be able to fly at a very low level, in both visual and instrument meteorological conditions, day and night, through hostile or contested environment in semi or non-permissive environment, worldwide;
 - Should use a wide spectrum of airfields, non-prepared and unpaved runways without significant runway damage and short take-off and landings qualities;
 - Should have performances not significantly altered in severe environment: dust, sand, humidity, maritime environment, extreme temperature conditions (arctic and desert environment) and mountainous areas, hot and high, CBRN⁴².
- Main qualities:
 - Should have Economic favourable operating costs;
 - Should promote interoperability with other strategic and tactical transports that are operated by the supporting Member States and EDF Associated Countries at the time the FMTC enters into service;
 - Should allow incremental and frequent updates including cockpit interface and connectivity, and offer growth potential with Modular Open System Architecture (MOSA) type;
 - Should have a maintenance-oriented design to favour a high level of serviceability.
- Cargo specifications:
 - Should be able to load and unload freight with a maximum autonomy on ground, including engine running on/offload operations (ERO);
 - Should have the ability to perform a large variety of drop (material and personal).
- Support and deployment ability:
 - Should have maintenance scheduled and unscheduled inspections reduced to a minimum in order to optimise the fleet availability;
 - Military operations in any environment should not significantly increase the maintenance burden or accelerate the ageing of parts.
- Airspace management compliance:
 - Must be compliant with all current regulations to operate worldwide according to general and operational air traffic rules and allow easy adaptation to upcoming regulations.

⁴² Chemical, Biological, Radiological, and Nuclear.

- Environmental protection and sustainability:
 - Should implement state-of-the-art solution in terms of environmental protection and sustainability and keep carbon dioxide emissions as low as possible.

Expected impact

This outcome should contribute to:

- Foster a multi-national European footprint.
- The European Technological growth, connecting FMTC to existing Air Systems and future civil programmes.
- Close capability gaps in line with the EU Member States and EDF Associated Countries' operational needs, providing an alternative to aged fleets.
- Ensure technology maturity and insertion for a mid-2030's tactical mid-sized cargo aircraft solution.
- Reinforce the European strategic autonomy in the military transport segment.
- Develop vital military capabilities in highly contested environments (e.g., tactical transport, airdrop, air assault) against technologically advanced adversaries.
- Develop EU MEDEVAC capabilities and EU disaster relief, and sanitary crisis response capabilities.
- Promote and secure the European technological and industrial ecosystem, based on a potential new aircraft development.
- Enhance cross-border collaboration (from large industrial groups to SMEs) through the opportunities offered by the several elements of the platform and its architecture.

EDF-2024-RA-UWW-SACOM-STEP: Secured and adaptive underwater communications for uncrewed underwater systems

Objectives

Efficient, robust, and secured underwater communication is a key enabler for maritime uncrewed systems (MUS), including the use of uncrewed underwater systems (UUS). There is a need for exchange of classified information in MUS. Identification, authentication and authorisation are important functionalities in the field of digital trusted gateways. Further research needs to be done to overcome the physical characteristics of the underwater environment that limits the possibility of having wireless communication systems with sufficient robustness and bandwidth required by many underwater warfare functions.

The specific objective is to design and demonstrate feasibility of secured (communications security COMSEC and transmission security TRANSEC) underwater (network) communication solutions (acoustic, optical, or other modalities) for UUSs designed for military needs.

Scope and types of activities

Scope

The proposals must address research of secure underwater communication, with focus on **acoustic** technologies, including networked solutions, that contribute to the improvement of current performance, through the creation of new low-distortion modulation techniques, interference avoidance/suppression mechanisms, recovery from fading, etc. This requires the communication to be highly adaptive and self-reconfigurable. To improve the performance of the acoustic underwater communication channel, the environmental conditions in situ, such as noise, depth, sound velocity profile, etc., must be considered.

Furthermore, research in underwater communication, with focus on **optical** technologies, must be addressed, with the aim of improving bandwidth and transmission distance, reducing signal distortion, in order to improve communication within and between platforms, networks and infrastructures.

The security aspects should be included in the underwater communication systems. The challenging communication conditions (low data rate, long latency, delay and Doppler spread effects, highly varying channel conditions and high noise levels, etc), which may result in unreliable and low-bandwidth communication links, also give special challenges for security mechanisms. This should be taken into account in the design of the complete communication system (modulations, network protocols, etc), carefully balancing modular/layered approaches and cross-layer approaches⁴³. During the design, performance metrics describing efficiency and robustness should always be assessed, to avoid that this gets too much compromised by the security measures. Also, encryption methods should be considered in order to obtain metrics about its efficiency. Different encryption methods can be used depending on the mission state, data classification level, etc.

The suggested design solutions should be tested in a realistic environment in salt water.

Types of activities

The following table lists the types of activities which are eligible for this topic, and whether they are mandatory or optional (*see Article 10(3) EDF Regulation*):

Types of activities (art 10(3) EDF Regulation)		Eligible?
(a)	Activities that aim to create, underpin and improve knowledge, products and technologies, including disruptive technologies, which can achieve significant effects in the area of defence (generating knowledge)	Yes (optional)
(b)	Activities that aim to increase interoperability and resilience, including secured production and exchange of data, to master critical defence technologies, to strengthen the security of supply or to enable the effective exploitation of results for defence products and technologies (integrating knowledge)	Yes (mandatory)

⁴³ The proposed solutions and design should have a view of inclusion of communication security in (candidate) military standards, e.g., future updates of [NATO STANAG 4748](#) (JANUS) and upcoming NATO STANAG 4817 (MDCS/CATL), where NATO STANAG 4748 is planned to be extended with the EDA-SALSA stack for robust adaptive underwater acoustic network communication.

Types of activities (art 10(3) EDF Regulation)		Eligible?
(c)	Studies , such as feasibility studies to explore the feasibility of new or upgraded products, technologies, processes, services and solutions	Yes (mandatory)
(d)	Design of a defence product, tangible or intangible component or technology as well as the definition of the technical specifications on which such a design has been developed, including any partial test for risk reduction in an industrial or representative environment	Yes (mandatory)
(e)	System prototyping ⁴⁴ of a defence product, tangible or intangible component or technology	No
(f)	Testing of a defence product, tangible or intangible component or technology	No
(g)	Qualification ⁴⁵ of a defence product, tangible or intangible component or technology	No
(h)	Certification ⁴⁶ of a defence product, tangible or intangible component or technology	No
(i)	Development of technologies or assets increasing efficiency across the life cycle of defence products and technologies	No

Accordingly, the proposals must cover at least the following tasks as part of mandatory activities:

- Integrating knowledge:
 - Security techniques integrated or working in tandem with the underwater communication systems, through encryption and/or other methods. The techniques must take into consideration specific challenges in underwater communications, including short block lengths in many scenarios.
 - Integrate knowledge on suitable key distribution techniques, which may include quantum key distribution and resilience to quantum computer enhanced counterparts (post-quantum cryptography).
 - Authentication and integrity protection for autonomous underwater communication systems (including tampering).
 - Application interfaces between MUSs and their embedded secured underwater communication systems.
 - Definition and assessment of suitable performance metrics for secured underwater communication systems.

⁴⁴ 'System prototype' means a model of a product or technology that can demonstrate performance in an operational environment.

⁴⁵ 'Qualification' means the entire process of demonstrating that the design of the product, component or technology meets the specified requirements, providing objective evidence by which particular requirements of a design are demonstrated to have been met.

⁴⁶ 'Certification' means the process by which a national authority certifies that the product, component or technology complies with the applicable regulations.

- A simulator-based benchmark test to certify that the given concepts of this proposal are realistic and feasible.
- Studies:
 - In-depth research that addresses the most critical technology gaps to enable capabilities for efficient, robust, and secured underwater communication.
 - The research must be supported by experimentation.
 - Studies must address methods, systems and devices for efficient, robust, and secured underwater communications for MUS.
 - The communication architecture, design and solution-space must include networking capabilities. Gateway to allow links between underwater communication networks and surface/terrestrial and satellite networks.
 - Studies must include wireless underwater communication systems (including modulations and network protocols) suitable for MUS, based on at least acoustic and optical modalities (using e.g., generic propagation models).
 - Studies must include suggestions for optimal technologies for different underwater environmental conditions (taking into account features such as noise, depth, sound velocity, etc.).
- Design:
 - Integration of secured underwater communication systems on MUS.
 - A final comprehensive System-of-systems (SoS) demonstration involving MUS with embedded secured underwater communication.
 - The design must respect an open (non-proprietary) architecture approach and interoperability standards.

In addition, the proposals should cover at least the following tasks:

- Studies:
 - A supply chain analysis addressing critical dependencies for the EDTIB.
- Design:
 - Security multilevel mechanisms, designed specifically for underwater communication systems and their challenging communication conditions, including analysis of the possible hurdles for obtaining official accreditation for handling classified information.
 - The proposals should address secure underwater communications for areas with a wide variety of conditions, such as deep water, harbours and fjords.
 - The proposals should address both LPI (low probability of intercept) and LPD (low probability of detections) communications.

- The proposals should include solutions suitable for vehicle-to-vehicle communications in a heterogeneous system-of-systems, including MUS-MUS, MUS-nodes and C2⁴⁷-nodes.
- The proposals should explore solutions for high bandwidth and short-range acoustic communication, low bandwidth and long-range acoustic communication, covert acoustic communication and very short range and very high bandwidth optical communication.
- The proposals should explore solutions for both horizontal, slant, and vertical communications.
- The solutions should be tested in a realistic environment in salt water.

A final test should demonstrate results of the research activities, present potential military value and identify technology shortfalls that need to be addressed in subsequent activities in the EU.

Functional requirements

The proposed design and technologies should meet the following functional requirements in support of secured underwater communication, including TRANSEC and COMSEC:

- Monitoring the network with intuitive and ergonomic graphical user interface (GUI) while the UxVs are performing the mission.
- Sending of tasks and commands, either inter-vehicle or from an operator through an ad hoc underwater communication network consisting of USVs, UUVs and sensor nodes.
- Exchange of data such as
 - Lists of targets or anomalies detected by a survey UUV, sent to an UUV with equipment for identification in e.g., mine countermeasures (MCM) or seabed warfare (SBW) operations;
 - Target, tracks or data packets from active or passive sonars, to improve the performance in an unmanned system-of-systems ASW operation⁴⁸;
 - Recorded data from stationary sensor nodes on the sea floor to UUVs,
 - Recorded data from specific sensor mounted on board the UUVs (for instance, conductivity temperature and depth, CTD, probe),
 - UxV critical data (such as battery level, mission status, speed).
- Multi-sensor data fusion for underwater positioning.
- Adaptivity of the system depending on the number of nodes in the network and the conditions of the underwater channel(s).
- Key distribution for the applied security mechanisms.

⁴⁷ Command and control.

⁴⁸ Complementarity with the call EDF-2023-DA-UWW-ASW could be considered in the scope of exchange of data.

Expected impact

The outcomes should contribute to:

- Reduce dependencies on non-European suppliers by boosting the EDTIB and promoting the development of a European solution.
- The strategic autonomy of EDTIB in the area of secured underwater communication.
- The interoperability of EU Member States' and EDF Associated Countries' Armed Forces.
- The improvement of protocols and standardisation of underwater communications.
- The improvement of range and bandwidth of underwater communications.
- The improvement of command-and-control systems for unmanned platforms.
- The improvement of safety and security of underwater communications.

EDF-2024-RA-SIMTRAIN-BRG-STEP: Methods for bridging reality gaps

Objectives

General objective

Mission planning and execution in the present and future multi-domain operation environment (MDO) employing manned and unmanned force elements demand that the human decision makers are very well supported to be able to handle the complexity and dynamics of the battlespace and make decisions faster and better than the adversary.

In mission planning different types of operational capabilities need to be carefully coordinated in time and space to achieve mission goals and counter expected threats. Labour intensive manual planning is infeasible within the constraints of available time and resources. The general objective is to develop advanced automated support tools for the generation and evaluation of courses of action (COAs) in an MDO context. The toolset is expected to support wargaming⁴⁹ of the candidate COAs to ensure that commanders and staff can assess the plan and options in detail before final decision making.

Specific objective

This call aims to explore technologies, concepts, products, processes and services towards a common simulation framework for wargames/combat simulations with the potential to facilitate reinforcement learning for mission planning and execution support.

Re-planning and decision-making during mission execution are likely to be challenged in the interconnected, manned-unmanned, automated and high-speed battlespace. In the future, the clear distinction between mission planning and execution is expected to be challenged by exploiting battlespace information and predictive capabilities. Proper support is needed to speed up the OODA⁵⁰-loop to outpace the adversary in the planning phase as well as in the execution phase.

⁴⁹ In digital format.

⁵⁰ Observe, Orient, Decide, Act.

The development and use of a computer-based decision support system that leverages AI, machine learning, wargames/combat simulations and digital twins of the battlespace has the potential to change the military planning and decision-making concept of operations (CONOPS).

Reinforcement Learning (RL) in Artificial Intelligence (AI) has shown a huge potential for solving planning problems in civilian applications. However, despite its headline success in video games, strategy games and other planning domains over the last few years, RL is not making similar progresses in the realm of wargames/combat simulations for military operations planning. Videogames leave a lot of margin when it comes to critical (life or death) simulation. Nevertheless, if access to classified data from the field is not possible, videogames data may be used for a proof of concept.

Simulation frameworks tailored to particular domains have played a major role in facilitating reinforcement learning in those domains, as witnessed by the impact of e.g., OpenAI Gym and the Arcade Learning Environment (ALE).

A common simulation framework for wargames/combat simulations has the potential of similarly facilitating reinforcement learning–support in mission planning and execution.

As it is related to EUDIS⁵¹, this topic aims to support, in addition to the research activities, the creation of an innovation test hub in the field of simulation and training. To achieve this objective, financial support to third parties (cascade funding) (FSTP) is included as part of the grant. This should increase the opportunities for various smaller actors, including those not previously active in the defence sector, to adapt innovative simulation technologies for defence applications and to identify potential business opportunities in the defence sector.

Scope and types of activities

Scope

Proposals must address studies and design of a reinforcement learning environment/testbed or framework for training of AI agents to develop courses of actions in mission planning, including a flexible and open combat simulation framework fit for RL. It must address the need for rapid and user-friendly creation of scenarios, considering commander's objectives and intent, rules of engagement and other mission constraints (e.g., speed, resources, attrition). It must also include studies and design of a combat simulation system (not necessarily the same used for AI agent training) including trained AI agents to support mission planning. For the support to mission execution the scope includes studies and design of a digital twin of the ongoing mission for prediction and decision-making support. The proposal must establish a proof-of-concept demonstrator for verification, validation and demonstration.

The learning environment, including the combat simulation framework must be flexible and adaptive for different scenarios and domains. It must take advantage of open standards and open-source frameworks both within AI, simulation technologies (including C2⁵²-Simulation interoperability) and mission sensor and mission data to the digital twin.

Types of activities

The following table lists the types of activities which are eligible for this topic, and

⁵¹ EU Defense Innovation Scheme, <https://eudis.europa.eu/>

⁵² Command and control.

whether they are mandatory or optional (see Article 10(3) EDF Regulation):

Types of activities (art 10(3) EDF Regulation)		Eligible?
(a)	Activities that aim to create, underpin and improve knowledge, products and technologies, including disruptive technologies, which can achieve significant effects in the area of defence (generating knowledge)	Yes (optional)
(b)	Activities that aim to increase interoperability and resilience, including secured production and exchange of data, to master critical defence technologies, to strengthen the security of supply or to enable the effective exploitation of results for defence products and technologies (integrating knowledge)	Yes (optional)
(c)	Studies , such as feasibility studies to explore the feasibility of new or upgraded products, technologies, processes, services and solutions	Yes (mandatory)
(d)	Design of a defence product, tangible or intangible component or technology as well as the definition of the technical specifications on which such a design has been developed, including any partial test for risk reduction in an industrial or representative environment	Yes (mandatory)
(e)	System prototyping ⁵³ of a defence product, tangible or intangible component or technology	No
(f)	Testing of a defence product, tangible or intangible component or technology	No
(g)	Qualification ⁵⁴ of a defence product, tangible or intangible component or technology	No
(h)	Certification ⁵⁵ of a defence product, tangible or intangible component or technology	No
(i)	Development of technologies or assets increasing efficiency across the life cycle of defence products and technologies	No

Accordingly, the proposals must cover at least the following tasks as part of mandatory activities:

- Studies:
 - Define scenarios and use cases;
 - Identify general operational needs and requirements, and more specifically, needs and requirements for simulation support in COA development, evaluation and wargaming. Needs and requirements for simulation support during mission execution, such as calibration⁵⁶ of

⁵³ 'System prototype' means a model of a product or technology that can demonstrate performance in an operational environment.

⁵⁴ 'Qualification' means the entire process of demonstrating that the design of the product, component or technology meets the specified requirements, providing objective evidence by which particular requirements of a design are demonstrated to have been met.

⁵⁵ 'Certification' means the process by which a national authority certifies that the product, component or technology complies with the applicable regulations.

⁵⁶ Calibration of models so these models will "copy" the operational reality / status (like a Digital Twin of the ongoing operation).

- simulation models⁵⁷ and the combination of the extensive flow of battlespace information in the future and the simulation results;
- Describe how to use knowledge as constraints for AI models and how to (quickly) update/retrain models for specific missions.
 - Include research and identification of an appropriate Simulation Framework for wargames/combat simulations for mission planning and execution.
 - Explore the availability of data; real and/or synthetic data; validation of data.
 - Contribute to the definition of a concept of operations (CONOPS) for the mission planning and execution support framework, with special emphasis on the human-machine collaboration between the AI-enabled planning and decision-making support functions and the operators. Explore how the CONOPS could change the military decision-making process (MDMP).
 - Further explore existing open standards (e.g., NATO, NATO Modelling and Simulation Group (NMSG)⁵⁸, SISO⁵⁹) and the need for new standards for simulation support in defence mission planning and execution applications.
 - Explore means of verification, validation and acceptance (i.e., trust building) of the AI models for mission planning and execution support.
 - Explore how the planning and decision-making support can explain proposed COAs and changes of plans during mission execution.
 - Prepare activities for FSTP in the field of simulation and training and in accordance with guidance described previously in the call text under “Conditions related to FSTP”.
- Design:
- Propose an architecture design, comprising of both a Reference Architecture and proposed Solution Architecture.
 - Fulfil the requirements for simulation situations at least at the level of EU ambition (concerning number of battlegroups, concurrent operations and missions, potential opponents, etc.).
 - Design AI agents with analytics and predictive capabilities, by studying the three framework components (a testbed of simulation environments from a particular domain, a base line of general-purpose agents for that domain, and, finally, a generic interface between agents and simulation environments) to the level of a proof-of-concept, with particular emphasis on the first component, simulation environments.
 - Propose a design for a baseline of general-purpose agents. AI/RL-enabled modelling of battlespace agent behaviour, by designing and

⁵⁷ Calibration of models in relation to the mission-context: knowledge of friendly forces behaviour (operating procedures, mission planning information) and of enemy forces (expected doctrine behaviour reduced or given by intelligence information).

⁵⁸ [NATO M&S | NATO Simulation Standards](#)

⁵⁹ [Simulation Interoperability Standards Organization \(sisostandards.org\)](https://www.sisostandards.org)

employing simulation approaches to comply with the requirements for AI-supported mission planning and execution, including Modelling and Simulation as a Service (MSaaS), simulation control, speed and parallelism.

- Provide a clear design for verification, validation and acceptance of the AI models.
- Organise at least one hackathon through an innovation test hub in the field of simulation and training (cascade funding).
- Establish a proof-of-concept demonstrator, including a use-case identified in the studies, addressing its operational needs and requirements.
- Design and execute activities for FSTP in the field of simulation and training and in accordance with guidance described previously in the call text under “Conditions related to FSTP”.

In addition, the proposals should address the following tasks:

- Studies:
 - Explore current and foreseen technologies, for future needs;
 - Study how the AI agents capabilities can be enhanced by a hybrid AI approach combining the symbolic and non-symbolic AI methods and possibly data farming.

Beneficiaries should provide Financial Support to Third Parties (FSTP)⁶⁰ in accordance with the following conditions:

- Up to EUR 2 400 000 of the total call topic budget may be allocated as FSTP. The FSTP in the proposals should target but not exceed 16% of the requested EU contribution.
- The FSTP can NOT be provided through services offered by the consortium directly.
- The support to third parties can only be provided in the form of lump sum grants.
- The maximum grant amount per third party is EUR 60 000 (see section 10 *Budget categories and cost eligibility rules*).
- Third parties must be established in the EU or in EDF Associated Countries.
- Third parties must not be subject to control by non-associated third countries or non-associated third-country entities.
- FSTP must target in priority SMEs, including start-ups. Applicants for FSTP must have self-assessed their SME status. The consortium should perform checks on the basis of random sampling in accordance with the criteria as defined in Article 2 of the Annex to Commission Recommendation 2003/361/EC. Participation of entities other than SMEs can only be accepted

⁶⁰ The cascade funding, formally known as financial support to third parties (FSTP), is an agile instrument that allows small and medium enterprises (SMEs), including start-ups, receive support and guidance to advance in their product and/or technology development.

where no SMEs are available to demonstrate the capacity or expertise needed for the project during its lifetime.

- Should include a range of entities from different Member States and EDF Associated Countries and different sectors, including those not active in the defence sector.
- Certification at company level or approval as production organisation is not mandatory, but specific business coaching should be provided to non-certified companies. FSTP calls should aim to ensure a balance between experienced SMEs and newcomers.
- Financial support to third parties should be issued in up to two distinct calls with a target from minimum 10 and up to 20 beneficiaries per call, with a view to:
 - give the third parties the opportunity to demonstrate their knowledge, technologies, capabilities and products;
 - foster the possibilities for future involvement of these third parties in the European defence community.
- The following activities, but not limited to this list, may be considered for cascade funding:
 - Boot camps; customised trainings; coaching; technical and business mentoring;
 - Investor pitching events; matchmaking;
 - Hackathons; peer-to-peer evaluation by entrepreneurs;
 - Dedicated business mentors with public and private capital expertise;
 - Organising online training courses, webinars, virtual matchmaking platforms and marketplaces;
 - Technology showcase; internationalisation;
 - Customised support for specific challenges; proof of concept; validation; first client search; innovation management support.
- The beneficiaries may be involved in any type of task within the proposal. Possible tasks at the level of the call for third parties may include, but not limited to:
 - Feasibility studies on alternative solutions;
 - Preparation of sample technologies to be tested;
 - Analysis support;
 - Support the testing or the sample preparation;
 - The use of metaverse for defence applications;
 - Synthetic population in the area of operation/missions; Scenarios for area evacuation;
 - UxVs swarms and/or simulation of remoted pilot/ammunition;

- Future scenarios and tactics;
- Algorithms;
- The weather effect on the area of operations (flooding, fires etc).

Functional requirements

The proposed product and technologies should meet the following functional requirements:

- Frameworks for reinforcement learning, containing three main components:
 - A testbed of (fast executing) simulation environments from a particular domain (here: battlespace simulations for wargames);
 - A base line of general-purpose agents (in the form of reinforcement learning algorithms) for that domain;
 - A generic interface between agents and simulation environments;
- Simulate support for synthetic and realistic data generation for the development of AI models/agent behaviours.
- Collect realistic data and explore potential data sources from the field, pending availability and classification.
- Role for generative AI: Generate simulation environments, models and agent behaviour(s).
- Use MSaaS.
- Support for multi-domain simulation (and as a minimum land, air, maritime).
- Address electronic warfare as a domain.
- Include the weather element.
- The AI agents interface must be agnostic with respect to combat simulations/computer generated forces.
- Use open, commonly applicable standards (as recommended by NMSG, that could include IEEE⁶¹, SISO, etc.).
- Include an easy-to-use human-machine interface.
- Meet the representation of mission and operations for example as the number of EU battle groups in accordance with the EU level of ambition, at the time of implementation.
- Include in the scenarios the role of UxVs.
- Have the capability for counter play.
- Be tailored for simulation for military operations.
- Consider a decentralised, service-based, architecture for military planning and decision-making support.

⁶¹ [IEEE - IEEE Standards](#)

- Consider the need for human in the loop for the relevant cases of AI.

Expected impact

The outcomes should contribute to:

- Reduce dependencies on non-European suppliers by boosting the EDTIB and promoting the development of a European solution.
- Faster and better planning and decision making (with less personnel) during mission planning and execution, resulting in higher mission success.
- Leverage Reinforcement Learning towards largely automating the modelling and implementation of expert-level (or beyond) competent battlespace agents, thereby greatly reducing the time and cost of course of action (COA) development and wargaming.
- Deliver a proof-of-concept demonstrator at least of TRL 5.
- Increase the opportunities for various smaller actors, including those not previously active in the defence sector, to adapt and apply innovative simulation technologies for defence applications.
- Increase business opportunities in the defence sector for EU and Associated Countries companies and promote technological edge in the field.
- Increasing the interoperability between EU armed forces and with NATO Allies.
- Increase opportunities and future involvement for third parties participating in FSTP in the field of simulation and training within tasks described previously in the call text under “Conditions related to FSTP”.

3. Available budget

The estimated available call budget is **EUR 199 000 000**.

Specific budget information per topic can be found in the table below:

Topic	Topic budget	Fixed maximum number of projects
EDF-2024-RA-SENS-ART: Advanced radar technologies	EUR 35 000 000	No (but normally 1 expected)
EDF-2024-RA-DIGIT-ASMEP: Automated structural modelling for effect prediction	EUR 15 000 000	No
EDF-2024-RA-AIR-AAM: Concept study on advanced air-to-air missiles	EUR 35 000 000	No
EDF-2024-RA-AIR-UCCAS-STEP: Unmanned collaborative combat aircraft systems	EUR 15 000 000	No
EDF-2024-RA-GROUND-IWAS: Intelligent weaponry and ammunition systems	EUR 30 000 000	No

EDF-2024-RA-PROTMOB-FMTC: Future mid-size tactical cargo aircraft	EUR 30 000 000	No (but normally 1 expected)
EDF-2024-RA-UWW-SACOM-STEP: Secured and adaptive underwater communications for uncrewed underwater systems	EUR 24 000 000	No
EDF-2024-RA-SIMTRAIN-BRG-STEP: Methods for bridging reality gaps	EUR 15 000 000	No

The availability of the call budget still depends on the adoption of the budget 2025 by the EU budgetary authority.

We reserve the right not to award all available funds or to redistribute them between the call priorities (i.e. topics), depending on the proposals received and the results of the evaluation.

4. Timetable and deadlines

Timetable and deadlines (indicative)	
Call opening:	20 June 2024
Deadline for submission:	<u>5 November 2024 – 17:00:00 CET (Brussels)</u>
Evaluation:	November 2024 - May 2025
Information on evaluation results:	May 2025
GA signature ⁶² :	May - December 2025

5. Admissibility and documents

Proposals must be submitted before the **call deadline** (see *timetable section 4*).

Proposals must be submitted **electronically** via the Funding & Tenders Portal Electronic Submission System (accessible via the Topic page in the [Search Funding & Tenders](#) section). Paper submissions are NOT possible.

Proposals (including annexes and supporting documents) must be submitted using the forms provided *inside* the Submission System (⚠ NOT the documents available on the Topic page — they are only for information).

Proposals must be **complete** and contain all the requested information and all required annexes and supporting documents:

- Application Form Part A — contains administrative information about the participants (future coordinator, beneficiaries and affiliated entities), the ethics issues table and the summarised budget for the project (*to be filled in directly online*)
- Application Form Part B — contains the technical description of the project (*to be downloaded from the Portal Submission System, completed and then assembled and re-uploaded*)

⁶² In case of management by an entrusted entity, this timeframe may be different.

- mandatory annexes and supporting documents (*templates available to be downloaded from the Portal Submission System, completed, assembled and re-uploaded together with Application Form Part B*):
 - detailed budget table (EDF RA)
 - participant information (including previous projects, if any)
 - list of infrastructure, facilities, assets and resources
 - actual indirect cost methodology declarations (if actual indirect costs used)
 - ownership control declarations (including for associated partners and subcontractors involved in the action)
 - PRS declaration (if the project requires access to Galileo PRS information).


Please note that the amounts entered into the summarised budget table (filled in directly online) must correspond to the amounts calculated in the detailed budget table. In case of discrepancies, the amounts in the online summarised budget table will prevail.

At proposal submission, you will have to confirm that you have the **mandate to act** for all applicants. Moreover, you will have to confirm that the information in the application is correct and complete and that the participants comply with the conditions for receiving EU funding (especially eligibility, financial and operational capacity, exclusion, etc.). Before signing the grant, each beneficiary and affiliated entity will have to confirm this again by signing a declaration of honour (DoH). Proposals without full support will be rejected.

Your application must be **readable, accessible and printable**.

Proposals (Part B) are limited to maximum **100 pages**, counting the work package descriptions. Evaluators will not consider any additional pages.

You may be asked at a later stage for further documents (*for legal entity validation, financial capacity check, bank account validation, etc.*).

 For more information about the submission process (including IT aspects), consult the [Online Manual](#).

6. Eligibility

Eligible participants (eligible countries)


In order to be eligible, the applicants (beneficiaries and affiliated entities) must:

- be legal entities (public or private bodies)
- be established in one of the eligible countries, i.e.:
 - EU Member States (including overseas countries and territories (OCTs))
 - non-EU countries :
 - listed EEA countries ('EDF associated countries', see [list of participating countries](#))
- have their executive management structure established in eligible countries
- must not be subject to control by a non-associated third country or non-associated third-country entity (unless they can provide guarantees – see *Annex 2* - approved by the Member State or EDF associated country where

they are established)

Beneficiaries and affiliated entities must register in the [Participant Register](#) — before submitting the proposal — and will have to be validated by the Central Validation Service (REA Validation). For the validation, they will be requested to upload documents showing legal status and origin.

Other entities may participate in other roles, such as associated partners, subcontractors, third parties giving in-kind contributions, etc. (*see section 13*).

 Please note that, in EDF, subcontractors involved in the action⁶³ and associated partners must also comply with the above-listed conditions concerning establishment and control.


Associated partners which are not established in one of the eligible countries (or which are subject to control by a non-associated third country or non-associated third-country entity) may however participate exceptionally if certain conditions are fulfilled (*not contravene EU and MS security and defence interests; consistent with EDF objectives; results not subject to control or restriction by non-associated third countries or non-associated third-country entities; no unauthorised access to classified information; no potential negative effects over security of supply of inputs which are critical for the project*), subject to agreement by the granting authority and without any funding under the grant.

Specific cases

Natural persons — Natural persons are NOT eligible (with the exception of self-employed persons, i.e. sole traders, where the company does not have legal personality separate from that of the natural person).

International organisations — International organisations are not eligible, unless they are international organisations whose members are only Member States or EDF associated countries and whose executive management structure is in a Member State or EDF associated country.

Entities without legal personality — Entities which do not have legal personality under their national law may exceptionally participate, provided that their representatives have the capacity to undertake legal obligations on their behalf, and offer guarantees for the protection of the EU financial interests equivalent to that offered by legal persons⁶⁴.

Associations and interest groupings — Entities composed of members may participate as 'sole beneficiaries' or 'beneficiaries without legal personality'⁶⁵.  Please note that if the action will be implemented by the members, they should also participate (either as beneficiaries or as affiliated entities, otherwise their costs will NOT be eligible).

Subcontractors involved in the action — Subcontractors with a direct contractual relationship to a recipient (*i.e. beneficiary or affiliated entity*), other subcontractors to which at least 10% of the total eligible costs of the action is allocated, and subcontractors which may need access to classified information in order to carry out the action.

⁶³ 'Subcontractors involved in the action' means subcontractors with a direct contractual relationship to a beneficiary or affiliated entity, other subcontractors to which at least 10% of the total eligible costs of the action are allocated, and subcontractors which may need access to classified information in order to carry out the project.

⁶⁴ See Article 197(2)(c) EU Financial Regulation [2018/1046](#).

⁶⁵ For the definitions, see Articles 187(2) and 197(2)(c) EU Financial Regulation [2018/1046](#).

Following the [Council Implementing Decision \(EU\) 2022/2506](#), as of 16th December 2022, no legal commitments (including the grant agreement itself as well as subcontracts, purchase contracts, financial support to third parties, etc.) can be signed with Hungarian public interest trusts established under Hungarian Act IX of 2021 or any entity they maintain. Affected entities may continue to apply to calls for proposals. However, in case the Council measures are not lifted, such entities are not eligible to participate in any funded role (beneficiaries, affiliated entities, subcontractors, recipients of financial support to third parties). In this case, co-applicants will be invited to remove or replace that entity and/or to change its status into associated partner. Tasks and budget may be redistributed accordingly.

EU restrictive measures — Special rules apply for certain entities (e.g. entities subject to [EU restrictive measures](#) under Article 29 of the Treaty on the European Union (TEU) and Article 215 of the Treaty on the Functioning of the EU (TFEU)⁶⁶ and entities covered by Commission Guidelines No [2013/C 205/05](#)⁶⁷). Such entities are not eligible to participate in any capacity, including as beneficiaries, affiliated entities, associated partners, subcontractors or recipients of financial support to third parties (if any).

 For more information, see [Rules for Legal Entity Validation, LEAR Appointment and Financial Capacity Assessment](#).

Consortium composition


For all topics under this call, including EDF-2023-RA-DIS-LDEW, proposals must be submitted by:

- minimum 3 independent applicants (beneficiaries; not affiliated entities) from 3 different eligible countries.

Eligible actions and activities

Applications will only be considered eligible if their content corresponds wholly (or at least in part) to the topic description for which it is submitted.

Eligible actions and activities are the ones set out in section 2 above.

 Please note that the evaluation will also take into account how the proposals address the 'must', 'should' and 'may' requirements included in the subsections 'Scope and types of activities' and 'Functional requirements'. Failing to address a 'must' may give grounds to consider the proposal out of scope; failing to address a 'should' may give grounds for impacting the scoring negatively; addressing a 'may' may give grounds for impacting the scoring positively.

The following actions and activities are not considered as eligible for funding under this call:

- projects that do not implement the objectives set out in Article 3 of the EDF Regulation
- projects that do not concern new defence products or technologies or the upgrade of existing defence products or technologies
- projects that do not relate to at least one of the types of activities set out in

⁶⁶ Please note that the EU Official Journal contains the official list and, in case of conflict, its content prevails over that of the [EU Sanctions Map](#).

⁶⁷ Commission guidelines No [2013/C 205/05](#) on the eligibility of Israeli entities and their activities in the territories occupied by Israel since June 1967 for grants, prizes and financial instruments funded by the EU from 2014 onwards (OJEU C 205 of 19.07.2013, pp. 9-11).

Article 10(3) of the EDF Regulation

- projects that do not cover the mandatory types of activities set out in section 2
- projects that concern products and technologies whose use, development or production is prohibited by international law
- projects that concern the development of lethal autonomous weapons without the possibility for meaningful human control over selection and engagement decisions when carrying out strikes against humans (with the exception of the development of early warning systems and countermeasures for defensive purposes).
- projects where background or results:
 - would be subject to control or restriction by a non-associated third country or non-associated third-country entity, directly, or indirectly through one or more intermediate legal entities, including in terms of technology transfer
 - and, for pre-existing information (background), this would impact the results.

Projects should take into account the results of projects supported by other EU funding programmes. The complementarities must be described in the project proposals (Part B of the Application Form).


Projects must comply with EU policy interests and priorities (*such as environment, social, security, industrial and trade policy, etc.*).

Financial support to third parties:

- is mandatory for the topic EDF-2024-RA-SIMTRAIN-BRG-STEP. For the conditions, *see section 2*.
- is not allowed in all other topics under this call.

Geographic location (target countries)

Proposals must relate to activities taking place in the eligible countries (*see above*).

 Please note that moreover, in EDF, only infrastructure, facilities, assets and resources which are located or held in an eligible country may be used. Other assets, infrastructure, facilities or resources may be used only exceptionally if certain conditions are fulfilled (*no competitive substitutes are readily available; not contravene EU and MS security and defence interests; consistent with EDF objectives; results not subject to control or restriction by non-associated third countries or non-associated third-country entities*), subject to agreement by the granting authority and without any funding under the grant.

Duration

Project duration:

- for all topics: between 12 and 48 months

Projects of longer duration may be accepted in duly justified cases. Extensions are possible, if duly justified and through an amendment.

Project budget

Project budgets (maximum grant amount):

- for all topics under this call: **must not exceed the budget available for the topic** (see table in section 3)

This does not however preclude the submission/selection of proposals requesting other amounts. The grant awarded may be lower than the amount requested.

Ethics

Projects must comply with:

- highest ethical standards (including highest standards of research integrity) and
- applicable EU, international and national law.

Proposals under this call will have to undergo an ethics review to authorise funding and may be made subject to specific ethics rules (which become part of the Grant Agreement in the form of ethics deliverables, e.g. *ethics committee opinions/notifications/authorisations required under national or EU law*).

For completing the ethics issues table in the Submission System, see [How to complete your ethics self-assessment](#).

Security

Projects involving classified information must undergo security scrutiny to authorise *funding* and may be made subject to specific security rules (detailed in a security aspects letter (SAL) which is annexed to the Grant Agreement).

Projects where the Member States of the participating beneficiaries and affiliated entities decide to establish a specific security framework under Article 27(4) of the EDF Regulation, will be subject to this specific security framework and classified foreground information (results) generated by the project will be under the originatorship of these Member States.

If no such specific security framework is set up by the signature of the grant agreement, the security rules will be governed by Commission Decision [2015/444](#)⁶⁸ and its implementing rules⁶⁹.

These rules provide for instance that:

- projects involving information classified TRES SECRET UE/EU TOP SECRET (or equivalent) can NOT be funded
- classified information must be marked in accordance with the applicable security instructions in the SAL
- information with classification levels CONFIDENTIEL UE/EU CONFIDENTIAL or above (and RESTREINT UE/ EU RESTRICTED, if required by national rules) may be:
 - created or accessed only on premises with facility security clearing (FSC) from the competent national security authority (NSA), in accordance with the national rules

⁶⁸ See Commission Decision 2015/544/EU, Euratom of 13 March 2015 on the security rules for protecting EU classified information (OJ L 72, 17.3.2015, p. 53).


⁶⁹ See Article 27(4) EDF Regulation.

- handled only in a secured area accredited by the competent NSA
- accessed and handled only by persons with valid personnel security clearance (PSC) and a need-to-know
- at the end of the grant, the classified information must either be returned or continue to be protected in accordance with the applicable rules
- action tasks involving classified information may be subcontracted only with prior written approval from the granting authority and only to entities established in an EU Member State or in a non-EU country with a security of information agreement with the EU (or an administrative arrangement with the Commission)
- disclosure of classified information to third parties is subject to prior written approval from the granting authority.

Please note that facility security clearing may have to be provided before grant signature. The granting authority will assess the need for clearing in each case and will establish their delivery date during grant preparation. Please note that in no circumstances can we sign any grant agreement until at least one of the beneficiaries in a consortium has facility security clearing.

Further security recommendations may be added to the Grant Agreement in the form of security deliverables (*e.g. create security advisory group, limit level of detail, use fake scenario, exclude use of classified information, etc.*).

Beneficiaries must ensure that their projects are not subject to third-country/international organisation security requirements that could affect implementation or put into question the award of the grant (*e.g. technology restrictions, national security classification, etc.*). The granting authority must be notified immediately of any potential security issues.

 More information on security aspects can be found in Annex 3.

7. Financial and operational capacity and exclusion

Financial capacity

Applicants must have **stable and sufficient resources** to successfully implement the projects and contribute their share. Organisations participating in several projects must have sufficient capacity to implement all these projects.

The financial capacity check will be carried out on the basis of the documents you will be requested to upload in the [Participant Register](#) during grant preparation (*e.g. profit and loss account and balance sheet, business plan, audit report produced by an approved external auditor, certifying the accounts for the last closed financial year, etc.*). The analysis will be based on neutral financial indicators, but will also take into account other aspects, such as dependency on EU funding and deficit and revenue in previous years.

The check will normally be done for all beneficiaries, except:

- public bodies (entities established as public body under national law, including local, regional or national authorities) or international organisations
- if the individual requested grant amount is not more than EUR 60 000.

If needed, it may also be done for affiliated entities.

If we consider that your financial capacity is not satisfactory, we may require:

- further information
 - an enhanced financial responsibility regime, i.e. joint and several responsibility for all beneficiaries or joint and several liability of affiliated entities (*see below, section 10*)
 - prefinancing paid in instalments
 - (one or more) prefinancing guarantees (*see below, section 10*)
- or
- propose no prefinancing
 - request that you are replaced or, if needed, reject the entire proposal.

 For more information, see [Rules for Legal Entity Validation, LEAR Appointment and Financial Capacity Assessment](#).

Operational capacity

Applicants must have the **know-how, qualifications** and **resources** to successfully implement the projects and contribute their share (including sufficient experience in projects of comparable size and nature).

This capacity will be assessed together with the 'Implementation' award criterion, on the basis of the competence and experience of the applicants and their project teams, including operational resources (human, technical and other) or, exceptionally, the measures proposed to obtain it by the time the task implementation starts.

If the evaluation of the award criterion is positive, the applicants are considered to have sufficient operational capacity.

Applicants will have to show their capacity via the following information:

- general profiles (qualifications and experiences) of the staff responsible for managing and implementing the project.
- description of the consortium participants (including previous projects, if any).

Additional supporting documents may be requested, if needed to confirm the operational capacity of any applicant.

Public bodies, Member State organisations and international organisations are exempted from the operational capacity check.

Exclusion

Applicants which are subject to an **EU exclusion decision** or in one of the following **exclusion situations** that bar them from receiving EU funding can NOT participate⁷⁰:

- bankruptcy, winding up, affairs administered by the courts, arrangement with creditors, suspended business activities or other similar procedures (including procedures for persons with unlimited liability for the applicant's debts)
- in breach of social security or tax obligations (including if done by persons with unlimited liability for the applicant's debts)
- guilty of grave professional misconduct⁷¹ (including if done by persons having powers of representation, decision-making or control, beneficial owners or persons who are essential for the award/implementation of the grant)

⁷⁰ See Articles 136 and 141 of EU Financial Regulation [2018/1046](#).

- committed fraud, corruption, links to a criminal organisation, money laundering, terrorism-related crimes (including terrorism financing), child labour or human trafficking (including if done by persons having powers of representation, decision-making or control, beneficial owners or persons who are essential for the award/implementation of the grant)
- shown significant deficiencies in complying with main obligations under an EU procurement contract, grant agreement, prize, expert contract, or similar (including if done by persons having powers of representation, decision-making or control, beneficial owners or persons who are essential for the award/implementation of the grant)
- guilty of irregularities within the meaning of Article 1(2) of EU Regulation [2988/95](#) (including if done by persons having powers of representation, decision-making or control, beneficial owners or persons who are essential for the award/implementation of the grant)
- created under a different jurisdiction with the intent to circumvent fiscal, social or other legal obligations in the country of origin or created another entity with this purpose (including if done by persons having powers of representation, decision-making or control, beneficial owners or persons who are essential for the award/implementation of the grant).

Applicants will also be rejected if it turns out that⁷²:

- during the award procedure they misrepresented information required as a condition for participating or failed to supply that information
- they were previously involved in the preparation of the call and this entails a distortion of competition that cannot be remedied otherwise (conflict of interest).

8. Evaluation and award procedure

The proposals will have to follow the **standard submission and evaluation procedure** (one-stage submission + one-step evaluation).

An **evaluation committee** (assisted by independent outside experts) will assess all applications. Proposals will first be checked for formal requirements (admissibility, and eligibility, *see sections 5 and 6*). Proposals found admissible and eligible will be evaluated (for each budget envelope; *see section 3*) against the operational capacity and award criteria (*see sections 7 and 9*) and then ranked according to their scores.

Priority order for proposals with same scores

For proposals with the same score (within a budget envelope) a **priority order** will be determined according to the following approach:

Successively for every group of *ex aequo* proposals, starting with the highest scored group, and continuing in descending order:

- 1) Proposals will be prioritised according to the scores they have been awarded for the criterion 'Excellence and potential of disruption'. When these scores are equal, priority will be based on scores for the criterion 'Innovation and

⁷¹ Professional misconduct includes: violation of ethical standards of the profession, wrongful conduct with impact on professional credibility, false declarations/misrepresentation of information, participation in a cartel or other agreement distorting competition, violation of IPR, attempting to influence decision-making processes or obtain confidential information from public authorities to gain advantage.


⁷² See Article 141 EU Financial Regulation [2018/1046](#).

technological development'. When these scores are equal, priority will be based on scores for the criterion 'Competitiveness'. When these scores are equal, priority will be based on scores for the criterion 'Creation of new cross-border cooperation'

- 2) If necessary, any further prioritisation will be based on the number of Member States or EDF associated countries, in which applicants involved in the proposal are established


Evaluation result and grant preparation

All proposals will be informed about the evaluation result (**evaluation result letter**). Successful proposals will be invited for grant preparation; the other ones will be put on the reserve list or rejected. Proposals under topics EDF-2024-RA-AIR-UCCAS-STEP, EDF-2024-RA-UWW-SACOM-STEP and EDF-2024-RA-SIMTRAIN-BRG-STEP that are eligible and exceed the evaluation thresholds will be awarded a [Sovereignty Seal](#).

 No commitment for funding — Invitation to grant preparation does NOT constitute a formal commitment for funding. We will still need to make various legal checks before grant award: *legal entity validation, financial capacity, exclusion check, etc.*

Grant preparation will involve a dialogue in order to fine-tune technical or financial aspects of the project and may require extra information from your side. It may also include adjustments to the proposal to address recommendations of the evaluation committee or other concerns. Compliance will be a pre-condition for signing the grant.

If you believe that the evaluation procedure was flawed, you can submit a **complaint** (following the deadlines and procedures set out in the evaluation result letter). Please note that notifications which have not been opened within 10 days after sending will be considered to have been accessed and that deadlines will be counted from opening/access (see also [Funding & Tenders Portal Terms and Conditions](#)). Please also be aware that for complaints submitted electronically, there may be character limitations.

 For projects where the Commission decides on management by the European Defence Agency (EDA), the Organisation Conjointe de Coopération en Matière d'Armement/Organisation for Joint Armament Co-operation (OCCAR) or another entrusted entity, you will receive the evaluation result letter by us and then be invited to sign the grant with the relevant entrusted entity.

Business coaching

The EDF also has a business coaching component. Successful SME beneficiaries will be offered business coaching, to accelerate their growth and guide them in their business challenges to reach the defence market.

9. Award criteria

The **award criteria** for this call are as follows:

1. Excellence and potential of disruption (5 points)

- Excellence of the overall concept and soundness of the proposed approach for the solution, including main ideas, technologies and methodology
- Compliance of the proposal with the objectives, scope and types of activities, functional requirements and expected impact of the topic as set out in section 2

- Extent to which the objective and expected outcome of the proposed project differs from (and represents an advantage at strategic, technological or defence operational level over) existing defence products or technologies, or has a potential of disruption in the defence domain

2. Innovation and technological development (5 points)

- Extent to which the proposal demonstrates innovation potential and contains ground-breaking or novel concepts and approaches (*e.g. new products, services or business and organizational models*), new promising technological improvements, or the application of technologies or concepts previously not applied in the defence sector
- Integration of existing knowledge and previous or ongoing R&D activities in the defence and/or civil sectors, while avoiding unnecessary duplication
- Extent to which the innovations or technologies developed under the proposal could spin-off to other defence applications and products

3. Competitiveness (5 points)

- Foreseen competitive advantage of the product/technology/solution vis-a-vis existing or planned products/technologies/solutions across the EU and beyond, including consideration given to the balance between performance and cost-efficiency of the solution
- Potential to accelerate the growth of companies throughout the EU, based on an analysis of the EU internal market and the global market place, indicating, to the extent possible, the size and the growth potential of the market it addresses, as well as expected volumes of sales both within and outside of the EU.
- Strength of the IP strategy (*e.g. patents*) associated with the solution to support the competitiveness and growth of the applicant companies

4. EDTIB autonomy (5 points)

- Extent to which the proposed project will contribute to the autonomy of the European Defence Technological and Industrial Base (EDTIB) by increasing the EU's industrial and technological non-dependency from third countries
- Beneficial impact that the proposed activities will have on the strength of the European security of supply, including the creation of a new supply chain
- Extent to which the project outcome will contribute to the defence capability priorities agreed by Member States within the framework of the Common Foreign and Security Policy (CFSP), and in particular in the context of the [Capability Development Plan](#) (EDA version releasable to the industry); where appropriate, extent to which the proposal addresses regional or an international priorities which serve the security and defence interests of the EU as determined under the CFSP and do not exclude the possibility of participation of Member States or EDF associated countries

5. Creation of new cross-border cooperation⁷³ (5 points)

- Extent to which the proposed project will create new cross-border cooperation between legal entities established in Member States or EDF associated countries, in particular SMEs and mid-caps, especially compared to former activities in the technological area of the call topic and taking into account the specificity of the market
- Planned future cross-border cooperation between legal entities established in Member States or EDF associated countries and cooperation opportunities created by the proposed activities
- Extent to which SMEs and mid-caps which cooperate cross-border participate substantially, and industrial or technological added value brought by them

6. Implementation (5 points)

- Effectiveness and practicality of the structure of the work plan (work breakdown structure), including timing and inter-relation of the different work packages and their components (illustrated by a Gantt chart, Pert chart or similar)
- Usefulness and comprehensiveness of the milestones and deliverables of the project; coherence and clarity of the criteria for reaching the milestones, which should be measurable, realistic and achievable within the proposed duration
- Appropriateness of the management structures and procedures, including decision-making mechanisms, to the complexity and scale of the project; quality of the risk management, including identification and assessment of the project specific critical risks, which could compromise the achievement of the stated project's objectives and detail of proposed risk treatments (*e.g. mitigation measures*)
- Appropriateness of the allocation of tasks and resources between consortium members, ensuring that all participants have a valid and complementary role; allocation of the work share that ensures a high level of effectiveness and efficiency for carrying out the project.

Award criteria	Minimum pass score	Maximum score	Weighting
Excellence and potential of disruption	n/a	5	2
Innovation and technological development	n/a	5	2
Competitiveness	n/a	5	1
EDTIB autonomy	n/a	5	1
Creation of new cross-border cooperation	n/a	5	2

⁷³ In this section, 'cross-border SMEs or mid-caps' refer to SMEs or mid-caps which are established in Member States or EDF associated countries other than those where the legal entities cooperating within the consortium which are not SMEs or mid-caps are established.

Implementation	n/a	5	1
Overall weighted (pass) scores	30	45	N/A

Each award criterion will be scored from 0 to 5 (half-points will be allowed) using the following scale:

- 0** — The proposal fails to address the criterion or cannot be assessed due to missing or incomplete information.
- 1** — Poor. The criterion is inadequately addressed, or there are serious inherent weaknesses.
- 2** — Fair. The proposal broadly addresses the criterion, but there are significant weaknesses.
- 3** — Good. The proposal addresses the criterion well, but a number of shortcomings are present.
- 4** — Very Good. The proposal addresses the criterion very well, but a small number of shortcomings are present.
- 5** — Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.

Maximum points: 45 points.

There is no minimum pass score for individual criteria.

Overall threshold: 30 points.

Proposals that pass the overall threshold will be considered for funding within the limits of the available budget (i.e. up to the budget ceiling). Other proposals will be rejected.

10. Legal and financial set-up of the Grant Agreements⁷⁴

If you pass evaluation, your project will be invited for grant preparation, where you will be asked to prepare the Grant Agreement together with the EU Project Officer.

This Grant Agreement will set the framework for your grant and its terms and conditions, in particular concerning deliverables, reporting and payments.

The Model Grant Agreement that will be used (and all other relevant templates and guidance documents) can be found on [Portal Reference Documents](#).

Starting date and project duration

The project starting date and duration will be fixed in the Grant Agreement (*Data Sheet, point 1*). Normally the starting date will be after grant signature. A retroactive starting date can be granted exceptionally for duly justified reasons — but never earlier than the proposal submission date.

Project duration: *see section 6 above*

⁷⁴ In case of management by an entrusted entity, these rules may be different.

Milestones and deliverables

The milestones and deliverables for each project will be managed through the Portal Grant Management System and will be reflected in Annex 1 of the Grant Agreement.

The following deliverables will be mandatory for all projects:

- progress reports (every 6 to 12 months, to be agreed during grant agreement preparation)
- a special report⁷⁵

Form of grant, funding rate and maximum grant amount

The grant parameters (*maximum grant amount, funding rate, total eligible costs, etc.*) will be fixed in the Grant Agreement (*Data Sheet, point 3 and art 5*).

Project budget (maximum grant amount): *see section 6 above*.

The grant will be a budget-based mixed actual cost grant (actual costs, with unit cost and flat-rate elements). This means that it will reimburse ONLY certain types of costs (eligible costs) and costs that were *actually* incurred for your project (NOT the *budgeted* costs). For unit costs and flat-rates, you can charge the amounts calculated as explained in the Grant Agreement (*see art 6 and Annex 2 and 2a*).

The costs will be reimbursed at the funding rate fixed in the Grant Agreement. This rate depends on the type of activities and participants (*see section 2*).

Grants may in principle NOT produce a profit (i.e. surplus of revenues + EU grant over costs). Where the no-profit rule is activated in the Grant Agreement, for-profit organisations must declare their revenues and, if there is a profit, we will deduct it from the final grant amount (*see art 22.3*).

Moreover, please be aware that the final grant amount may be reduced in case of non-compliance with the Grant Agreement (*e.g. improper implementation, breach of obligations, etc.*).

Budget categories and cost eligibility rules

The budget categories and cost eligibility rules are fixed in the Grant Agreement (*Data Sheet, point 3, art 6 and Annex 2*).

Budget categories for this call:

- A. Personnel costs
 - A.1 Employees, A.2 Natural persons under direct contract, A.3 Seconded persons
 - A.4 SME owners and natural person beneficiaries
- B. Subcontracting costs
- C. Purchase costs
 - C.1 Travel and subsistence

⁷⁵ 'Special report' means a specific deliverable of a research action summarising its results, providing extensive information on the basic principles, the aims, the outcomes, the basic properties, the tests performed, the potential benefits, the potential defence applications and the expected exploitation path of the research towards development, including information on the ownership of IPRs but not requiring the inclusion of IPR information (see art 2(23) EDF Regulation).


- C.2 Equipment
- C.3 Other goods, works and services
- D. Other cost categories
 - D.1 Financial support to third parties (allowed only for the topic EDF-2024-RA-SIMTRAIN-BRG-STEP)
 - D.2 Internally invoiced goods and services
- E. Indirect costs

Specific cost eligibility conditions for this call:

- personnel costs:
 - average personnel costs (unit cost according to usual cost accounting practices)⁷⁶: Yes
 - SME owner/natural person unit cost⁷⁷: Yes
- subcontracting costs:
 - country restrictions for subcontracting costs: Yes, subcontracted work must be performed in the eligible countries
- travel and subsistence unit cost⁷⁸: No (only actual costs)
- equipment costs:
 - depreciation only (for all topics)
- other cost categories:
 - costs for financial support to third parties: allowed only for the grants related to the following topic:
 - EDF-2024-RA-SIMTRAIN-BRG-STEP: **maximum amount per third party is EUR 60 000**
 - internally invoiced goods and services (unit cost according to usual cost accounting practices)⁷⁹: Yes
- indirect cost:
 - flat-rate: 25% of the eligible direct costs (categories A-D, except subcontracting costs, financial support to third parties and exempted specific cost categories, i.e. internally invoiced goods and services and PCP procurement costs)

or

- actual costs

 The indirect cost method selected will be fixed for the project and cannot be changed later on.

⁷⁶ [Decision](#) of 27 February 2023 authorising the use of unit costs for staff costs and costs for internally invoiced goods and services for specific actions under the European Defence Programme.

⁷⁷ Commission [Decision](#) of 20 October 2020 authorising the use of unit costs for the personnel costs of the owners of small and medium-sized enterprises and beneficiaries that are natural persons not receiving a salary for the work carried out by themselves under an action or work programme (C(2020)7115).

⁷⁸ Commission [Decision](#) of 12 January 2021 authorising the use of unit costs for travel, accommodation and subsistence costs under an action or work programme under the 2021-2027 multi-annual financial framework (C(2021)35).

⁷⁹ [Decision](#) of 27 February 2023 authorising the use of unit costs for staff costs and costs for internally invoiced goods and services for specific actions under the European Defence Programme.

- VAT: non-deductible VAT is eligible (but please note that since 2013 VAT paid by beneficiaries that are public bodies acting as public authority is NOT eligible)
- other:
 - in-kind contributions for free are allowed, but cost-neutral, i.e. they cannot be declared as cost
 - kick-off meeting: costs for kick-off meeting organised by the granting authority are eligible (travel costs for maximum 2 persons, return ticket to Brussels and accommodation for one night) only if the meeting takes place after the project starting date set out in the Grant Agreement; the starting date can be changed through an amendment, if needed
 - project websites: communication costs for presenting the project on the participants' websites or social media accounts are eligible; costs for *separate* project websites are not eligible
 - eligible cost country restrictions: Yes, only costs for activities carried out in eligible countries are eligible
 - other ineligible costs: Yes, costs related to the use of assets, infrastructure, facilities or resources located or held outside the eligible countries are not eligible (even if their use was authorised, *see section 6*).

Reporting and payment arrangements

The reporting and payment arrangements are fixed in the Grant Agreement (*Data Sheet, point 4 and art 21 and 22*).


After grant signature, you will normally receive a **prefinancing** to start working on the project (float of normally **55%** of the maximum grant amount; exceptionally less or no prefinancing). The prefinancing will be paid 30 days from entry into force/starting date/financial guarantee (if required) — whichever is the latest.

For projects of more than 18 months, there may be one or more **additional prefinancing payments** linked to a prefinancing report and one or more **interim payments** (with detailed cost reporting).

In addition, you will be requested to submit one or more progress reports not linked to payments.

Payment of the balance: At the end of the project, we will calculate your final grant amount. If the total of earlier payments is higher than the final grant amount, we will ask you (your coordinator) to pay back the difference (recovery).

All payments will be made to the coordinator.

 Please be aware that payments will be automatically lowered if one of your consortium members has outstanding debts towards the EU (granting authority or other EU bodies). Such debts will be offset by us — in line with the conditions set out in the Grant Agreement (*see art 22*).

Please also note that you are responsible for keeping records on all the work done and the costs declared.

Prefinancing guarantees

If a prefinancing guarantee is required, it will be fixed in the Grant Agreement (*Data Sheet, point 4*). The amount will be set during grant preparation and it will normally be equal or lower than the prefinancing for your grant.

The guarantee should be in euro and issued by an approved bank/financial institution established in an EU Member State. If you are established in a non-EU country and would like to provide a guarantee from a bank/financial institution in your country, please contact us (this may be exceptionally accepted, if it offers equivalent security).

Amounts blocked in bank accounts will NOT be accepted as financial guarantees.

Prefinancing guarantees are formally NOT linked to individual consortium members, which means that you are free to organise how to provide the guarantee amount (*by one or several beneficiaries, for the overall amount or several guarantees for partial amounts, by the beneficiary concerned or by another beneficiary, etc.*). It is however important that the requested amount is covered and that the guarantee(s) are sent to us in time to make the prefinancing (scanned copy via Portal AND original by post).

If agreed with us, the bank guarantee may be replaced by a guarantee from a third party.

The guarantee will be released at the end of the grant, in accordance with the conditions laid down in the Grant Agreement.

Certificates

Depending on the type of action, size of grant amount and type of beneficiaries, you may be requested to submit different certificates. The types, schedules and thresholds for each certificate are fixed in the Grant Agreement (*Data Sheet, point 4 and art 24*).

Liability regime for recoveries

The liability regime for recoveries will be fixed in the Grant Agreement (*Data Sheet point 4.4 and art 22*).

For beneficiaries, it is normally:

- limited joint and several liability with individual ceilings — *each beneficiary up to their maximum grant amount.*

In addition, the granting authority may require joint and several liability of affiliated entities (with their beneficiary).

Provisions concerning the project implementation

Security rules: *see Model Grant Agreement (art 13 and Annex 5)*

- specific national security framework under Article 27(4) of the EDF Regulation: Yes

Ethics rules: *see Model Grant Agreement (art 14 and Annex 5)*

- specific ethics rules in Annex 5: Yes

IPR rules: *see Model Grant Agreement (art 16 and Annex 5):*

- list of background and background free from restrictions: Yes
- results free from restrictions: Yes
- ownership of results: Yes
- protection of results: Yes
- transfer and licensing of results: Yes

- rights of use on results: Yes
- for EDF Research Actions: access to results for policy purposes: Yes
- for EDF Research Actions: access to special report: Yes
- for EDF Research Actions: access rights to further develop results: Yes

Communication, dissemination and visibility of funding: *see Model Grant Agreement (art 17 and Annex 5)*:

- additional communication and dissemination activities: Yes

Specific rules for carrying out the action: *see Model Grant Agreement (art 18 and Annex 5)*:

- specific rules for EDF actions: Yes
- specific rules for PCP Grants for Procurement: No
- place of performance obligation for PCP Grants for Procurement: No
- specific rules for Grants for Financial Support: No
- specific rules for blending operations: No.

Other specificities

n/a

Non-compliance and breach of contract

The Grant Agreement (chapter 5) provides for the measures we may take in case of breach of contract (and other non-compliance issues).

 For more information, see [AGA — Annotated Grant Agreement](#).

11. How to submit an application

All proposals must be submitted directly online via the Funding & Tenders Portal Electronic Submission System. Paper applications are NOT accepted.

Submission is a **2-step process**:

a) create a user account and register your organisation

To use the Submission System (the only way to apply), all participants need to [create an EU Login user account](#).

Once you have an EULogin account, you can [register your organisation](#) in the Participant Register. When your registration is finalised, you will receive a 9-digit participant identification code (PIC).


b) submit the proposal

Access the Electronic Submission System via the Topic page in the [Search Funding & Tenders](#) section (or, for calls sent by invitation to submit a proposal, through the link provided in the invitation letter).

Submit your proposal in 2 parts, as follows:

- Part A includes administrative information about the applicant organisations (future coordinator, beneficiaries, affiliated entities and associated partners) and the summarised budget for the proposal. Fill it in directly online
- Part B and Annexes through a password-protected single zip archive:
 - Part B (description of the action) covers the technical content of the proposal. Download the mandatory word template from the Submission System, fill it in and add to the zip archive as a PDF
 - Annexes (*see section 5*). Download the templates, and add to zip archive as PDFs (unless other format specified).

The zip archive must be submitted password-protected (using AES-256 encryption method), with a size of less than 100 MB. The password (and any other passwords used in the documents) must be communicated before the deadline for submission to the following email address: DEFIS-EDF-PROPOSALS-PWD@ec.europa.eu (together with the proposal ID and the name of the zip archive).

 If your proposal includes **classified information**, please contact us at DEFIS-EDF-PROPOSALS@ec.europa.eu well in time before the deadline, in order to arrange the delivery of the classified documents. Please be aware that such documents **MUST NOT** under any circumstances be submitted online through the Funding & Tenders Portal.

The proposal must keep to the **page limits** (*see section 5*); excess pages will be disregarded.

Documents must be uploaded to the **right category** in the Submission System otherwise the proposal might be considered incomplete and thus inadmissible.

The proposal must be submitted **before the call deadline** (*see section 4*). After this deadline, the system is closed and proposals can no longer be submitted.

Once the proposal is submitted, you will receive a **confirmation e-mail** (with date and time of your application). If you do not receive this confirmation e-mail, it means your proposal has NOT been submitted. If you believe this is due to a fault in the Submission System, you should immediately file a complaint via the [IT Helpdesk webform](#), explaining the circumstances and attaching a copy of the proposal (and, if possible, screenshots to show what happened).

Details on processes and procedures are described in the [Online Manual](#). The Online Manual also contains the links to FAQs and detailed instructions regarding the Portal Electronic Exchange System.

12. Help

As far as possible, ***please try to find the answers you need yourself***, in this and the other documentation (we have limited resources for handling direct enquiries):

- [Online Manual](#)
- FAQs on the Topic page (for call-specific questions in open calls; not applicable for actions by invitation)
- [Portal FAQ](#) (for general questions).

Please also consult the Topic page regularly, since we will use it to publish call updates. (For invitations, we will contact you directly in case of a call update).

Contact

For individual questions on the Portal Submission System, please contact the [IT Helpdesk](#).

Non-IT related questions should be sent to the following email address: DEFIS-EDF-PROPOSALS@ec.europa.eu.

Please indicate clearly the reference of the call and topic to which your question relates (*see cover page*).

13. Important



IMPORTANT

- **Don't wait until the end** — Complete your application sufficiently in advance of the deadline to avoid any last minute **technical problems**. Problems due to last minute submissions (*e.g. congestion, etc.*) will be entirely at your risk. Call deadlines can NOT be extended.
- **Consult** the Portal Topic page regularly. We will use it to publish updates and additional information on the call (call and topic updates).
- **Funding & Tenders Portal Electronic Exchange System** — By submitting the application, all participants **accept** to use the electronic exchange system in accordance with the [Portal Terms & Conditions](#).
- **Registration** — Before submitting the application, all beneficiaries, affiliated entities, associated partners must be registered in the [Participant Register](#). The draft participant identification code (PIC) (one per participant) is mandatory for the Application Form.

If your project applies for the SME/Mid-cap bonuses, registration (draft PIC and SME self-assessment wizard) is also mandatory for all participants claiming SME/Mid-cap status (beneficiaries, affiliated entities and subcontractors involved in the action; *see section 2*).

Moreover, registration (draft PIC) is required for entities that must submit an ownership control assessment declaration (beneficiaries, affiliated entities, subcontractors involved in the action and associated partners).

- **Consortium roles** — When setting up your consortium, you should think of organisations that help you reach objectives and solve problems.

The roles should be attributed according to the level of participation in the project. Main participants should participate as **beneficiaries** or **affiliated entities**; other entities can participate as associated partners, subcontractors, third parties giving in-kind contributions. **Associated partners** and third parties giving in-kind contributions should bear their own costs (they will not become formal recipients of EU funding). **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 (*see section 10*).

- **Coordinator** — In multi-beneficiary grants, the beneficiaries participate as consortium (group of beneficiaries). They will have to choose a coordinator, who will take care of the project management and coordination and will represent the consortium towards the granting authority. In mono-beneficiary grants, the single beneficiary will automatically be coordinator.
- **Affiliated entities** — Applicants may participate with affiliated entities (i.e. entities linked to a beneficiary which participate in the action with similar rights and obligations as the beneficiaries, but do not sign the grant and therefore do not become beneficiaries themselves). They will get a part of the grant money and must therefore comply with all the call conditions and be validated (just like beneficiaries); but they do not count towards the minimum eligibility criteria for consortium composition (if any).
- **Associated partners** — Applicants may participate with associated partners (i.e. partner organisations which participate in the action but without the right to get grant money). They participate without funding and therefore do not need to be validated.

- **Consortium agreement** — For practical and legal reasons it is recommended to set up internal arrangements that allow you to deal with exceptional or unforeseen circumstances (in all cases, even if not mandatory under the Grant Agreement). The consortium agreement also gives you the possibility to redistribute the grant money according to your own consortium-internal principles and parameters (for instance, one beneficiary can reattribute its grant money to another beneficiary). The consortium agreement thus allows you to customise the EU grant to the needs inside your consortium and can also help to protect you in case of disputes.
- **Balanced project budget** — Grant applications must ensure a balanced project budget and sufficient other resources to implement the project successfully (*e.g. own contributions, income generated by the action, financial contributions from third parties, etc.*). You may be requested to lower your estimated costs, if they are ineligible (including excessive).
- **No-profit rule** — Grants may in principle NOT give a profit (i.e. surplus of revenues + EU grant over costs). Where the no-profit rule is activated in the Grant Agreement, this will be checked by us at the end of the project.
- **No double funding** — There is a strict prohibition of double funding from the EU budget (except under EU Synergies actions). Outside such Synergies actions, any given action may receive only ONE grant from the EU budget and cost items may under NO circumstances be declared to two different EU actions.
- **Completed/ongoing projects** — Proposals for projects that have already been completed will be rejected; proposals for projects that have already started will be assessed on a case-by-case basis (in this case, no costs can be reimbursed for activities that took place before the project starting date/proposal submission).
- **Combination with EU operating grants** — Combination with EU operating grants is possible, if the project remains outside the operating grant work programme and you make sure that cost items are clearly separated in your accounting and NOT declared twice (*see [AGA — Annotated Grant Agreement, art 6.2.E](#)*).
- **Multiple proposals** — Applicants may submit more than one proposal for *different* projects under the same call (and be awarded a funding for them).
Organisations may participate in several proposals.
BUT: if there are several proposals for *very similar* projects, only one application will be accepted and evaluated; the applicants will be asked to withdraw one of them (or it will be rejected).
- **Resubmission** — Proposals may be changed and re-submitted until the deadline for submission.
- **Rejection** — By submitting the application, all applicants accept the call conditions set out in this Call Document (and the documents it refers to). Proposals that do not comply with all the call conditions will be **rejected**. This applies also to applicants: All applicants need to fulfil the criteria; if any one of them doesn't, it must be replaced or the entire proposal will be rejected.
- **Cancellation** — There may be circumstances which may require the cancellation of the call. In this case, you will be informed via a call or topic update. Please note that cancellations are without entitlement to compensation.
- **Language** — You can submit your proposal in any official EU language (project abstract/summary should however always be in English). For reasons of efficiency, we strongly advise you to use English for the entire application. If you need the call documentation in another official EU language, please submit a request within 10 days after call publication (for the contact information, *see section 12*).

- **Transparency** — In accordance with Article 38 of the [EU Financial Regulation](#), information about EU grants awarded is published each year on the [Europa website](#).

This includes:

- beneficiary names
- beneficiary addresses
- the purpose for which the grant was awarded
- the maximum amount awarded.

The publication can exceptionally be waived (on reasoned and duly substantiated request), if there is a risk that the disclosure could jeopardise your rights and freedoms under the EU Charter of Fundamental Rights or harm your commercial interests.

- **Data protection** — The submission of a proposal under this call involves the collection, use and processing of personal data. This data will be processed in accordance with the applicable legal framework. It will be processed solely for the purpose of evaluating your proposal, subsequent management of your grant and, if needed, programme monitoring, evaluation and communication. Details are explained in the [Funding & Tenders Portal Privacy Statement](#).

Annex 1

EDF types of action

EDF uses the following actions to implement grants:

Research Actions

Description: Research Actions (RA) target activities consisting primarily of research activities, in particular applied research and where necessary fundamental research, with the aim of acquiring new knowledge and with an exclusive focus on defence applications.

Funding rate: 100%

Payment model: Prefinancing — (x) additional prefinancing payment(s) — (x) interim payment(s) — final payment

Development Actions

Description: Development Actions (DA) target activities consisting of defence-oriented activities primarily in the development phase, covering new defence products or technologies or the upgrading of existing ones, excluding the production or use of weapon.

Funding rate: variable per activity (rates depend on activity and bonuses for SME and mid-cap participation and PESCO)

Payment model: Prefinancing — (x) additional prefinancing payment(s) — (x) interim payment(s) — final payment

PCP Grants for Procurement

Description: PCP Grants for Procurement (PCP) target activities that aim to help a transnational buyers' group to strengthen the public procurement of research, development, validation and, possibly, the first deployment of new solutions that can significantly improve quality and efficiency in areas of public interest, while opening market opportunities for industry and researchers active in Europe. Eligible activities include the preparation, management and follow-up, under the coordination of a lead procurer, of one joint PCP and additional activities to embed the PCP into a wider set of demand-side activities.

Funding rate: variable (to be defined in the work programme)

Payment model: Prefinancing — (x) additional prefinancing payment(s) — (x) interim payment(s) — payment of the balance

Lump Sum Grants for Research Actions

Description: Lump Sum Grants (LS-RA) reimburse a general lump sum for the entire project and the consortium as a whole. The lump sum is fixed ex-ante (at the latest at grant signature) on the basis of a methodology defined by the granting authority (either on the basis of a detailed project budget or other pre-defined parameters). The lump sum will cover all the beneficiaries' direct and indirect costs for the project. The beneficiaries do not need to report actual costs, they just need to claim the lump sum once the work is done. If the action is not properly implemented, only part of the lump sum will be paid.

Lump Sum Grants for Research Actions cover the same type of activities as Research Actions and follow — where relevant — similar rules (*e.g. for funding rates, etc.*).

Funding rate: 100%

Payment model: Prefinancing — (x) additional prefinancing payment(s) — (x) interim payment(s) — final payment

Lump Sum Grants for Development Actions

Description: Lump Sum Grants (LS-DA) reimburse a general lump sum for the entire project and the consortium as a whole. The lump sum is fixed ex-ante (at the latest at grant signature) on the basis of a methodology defined by the granting authority (either on the basis of a detailed project budget or other pre-defined parameters). The lump sum will cover all the beneficiaries' direct and indirect costs for the project. The beneficiaries do not need to report actual costs, they just need to claim the lump sum once the work is done. If the action is not properly implemented, only part of the lump sum will be paid.

Lump Sum Grants for Development Actions cover the same type of activities as Development Actions and follow — where relevant — similar rules (*e.g. for funding rates, etc.*).

Funding rate: variable per activity (rates depend on activity and bonuses for SME and mid-cap participation and PESCO)

Payment model: Prefinancing — (x) additional prefinancing payment(s) — (x) interim payment(s) — final payment

Framework Partnerships (FPAs) and Specific Grants (SGAs)

FPAs

Description: FPAs establish a long-term cooperation mechanism between the granting authority and the beneficiaries of grants. The FPA specifies the common objectives (action plan) and the procedure for awarding specific grants. The specific grants are awarded via identified beneficiary actions (with or without competition).

Funding rate: no funding for FPA

SGAs

Description: The SGAs are linked to an FPA and implement the action plan (or part of it). They are awarded via an invitation to submit a proposal (identified beneficiary action). The consortium composition should in principle match (meaning that only entities that are part of the FPA can participate in an SGA), but otherwise the implementation is rather flexible. FPAs and SGAs can have different coordinators; other partners of the FPA are free to participate in an SGA or not. There is no limit to the amount of SGAs signed under one FPA.

Funding rate: depending on the type: 100% or variable per activity

Payment model: Prefinancing — (x) additional prefinancing payment(s) — (x) interim payment(s) — final payment

Annex 2

Guarantees pursuant to Article 9(4) of the EDF Regulation

All calls under the EDF Programme are subject to ownership control restrictions, meaning that they exclude the participation of legal entities which are established in the EU territory or in an EDF associated country, but are controlled by a non-associated third country or non-associated third country legal entity.

Thus, for the purposes of participating in EDF actions, beneficiaries, affiliated entities, associated partners and subcontractors involved in the action must not be subject to control by a non-associated third country or non-associated third-country entity and undergo an ownership control assessment procedure before grant signature.

Entities that do not comply with this requirement may however exceptionally nevertheless participate, if they can provide guarantees approved by the Member State/EDF associated country in which they are established. Such guarantees must be provided at the latest by grant signature.


The guarantees must provide assurance to the granting authority that the participation of the entity will not contravene the security and defence interests of the EU and its Member States as established in the framework of the Common Foreign and Security Policy (CFSP) pursuant to Title V of the TEU, or the objectives set out in Article 3 of the EDF Regulation. They must also comply with the provisions on ownership and intellectual property rights (Articles 20 and 23 of the EDF Regulation).

They must in particular substantiate that, for the purposes of the action, measures are in place to ensure that:

- **control** over the legal entity is not exercised in a manner that would restrain or restrict its ability to carry out the action and to deliver results, that would impose restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or knowhow needed for the purposes of the action, or that would undermine its capabilities and standards necessary to carry out the action
- **access** by a non-associated third country or non-associated third-country entity to sensitive information relating to the action is prevented and the employees or other persons involved in the action have national security clearance issued by a Member State or an EDF associated country, where appropriate
- **ownership** of the intellectual property arising from, and the results of, the action remain within the beneficiary or affiliated entity during and after completion of the action, are not subject to control or restriction by a non-associated third country or non-associated third-country entity, and are neither exported outside the EU/EDF associated countries nor accessible from outside the EU/EDF associated countries without the approval of the Member State/EDF associated country in which the legal entity is established and in accordance with the objectives set out in Article 3 of the EDF Regulation.

The guarantees may refer to the fact that the legal entity's executive management structure is established in the EU/EDF associated country or, if considered appropriate, to specific governmental rights in the control over the legal entity.

If considered appropriate by the Member State/EDF associated country, additional guarantees may be provided.

 For more information, see also [Guidance on participation in DEP, HE, EDF and CEF-DIG restricted calls.](#)

Annex 3

Security aspects

Introduction

Pursuant to Article 27(4) of the EDF Regulation, in case the implementation of the grant involves the handling of classified information, Member States on whose territory the beneficiaries and affiliated entities are established must decide on the originatorship of the classified foreground information (results) generated in the performance of the project. For that purpose, those Member States may decide on a specific security framework for the protection and handling of classified information relating to the project and must inform the granting authority. Such a security framework must be without prejudice to the possibility for the granting authority to have access to necessary information for the implementation of the action.

If no such specific security framework is set up by those Member States, the security framework will be put in place by the granting authority in accordance with Decision 2015/444.

In either case, the security framework will be put in place at the latest by the signature of the Grant Agreement.

The applicable security framework will be detailed in the security aspect letter (SAL) which will be annexed to the Grant Agreement.

When you implement a classified grant, please bear in mind the following key rules.

Access to classified information

The creation, handling or access to information classified CONFIDENTIAL or SECRET (or RESTRICTED where required by national rules) on the premises of a participant is only possible if a valid Facility Security Clearance (FSC) at the appropriate level exists for the premises. This FSC must be granted by the National Security Authority (NSA/DSA) of the participant concerned.

The participant must hold a duly confirmed FSC at the appropriate level. Until a secured area is in place and accredited by the national NSA, the handling of classified information above RESTRICTED level on their premises is not allowed.

Access to and handling of classified information for the purposes of the project must be limited to individuals with a need-to-know and which are in possession of a valid personnel security clearance.

At the end of the Grant Agreement when EUCI is no longer required for the performance of the grant, the participant must return any EUCI they hold to the contracting authority immediately. If authorised to retain EUCI after the end of the grant, the EUCI must continue to be protected in accordance with Decision 2015/444.

Marking of classified information

Classified information generated for the performance of the action must be marked in accordance with the applicable security framework, as described in the SAL.

Grants must not involve information classified 'TRES SECRET UE/EU TOP SECRET' or any equivalent classification.

Other provisions

Where a participant has awarded a classified subcontract, the security provisions of the grant agreement must apply *mutatis mutandis* to the subcontractor(s) and their personnel. In such case, it is the responsibility of the participant to ensure that all subcontractors apply these principles to their own subcontracting arrangements.

All security breaches related to classified information will be investigated by the competent security authority and may lead to criminal prosecution under national law.

Table of equivalent security classification markings

	Secret	Confidential	Restricted
EU	SECRET UE/EU SECRET	CONFIDENTIEL UE/EU CONFIDENTIAL	RESTREINT UE/EU RESTRICTED
Austria	GEHEIM	VERTRAULICH	EINGESCHRÄNKT
Belgium	SECRET (Loi du 11 Dec 1998) or GEHEIM (Wet van 11 Dec 1998)	CONFIDENTIEL (Loi du 11 Dec 1998) or VERTROUWELIJK (Wet van 11 Dec 1998)	(Note 1, see below)
Bulgaria	СЕКРЕТНО	ПОВЕРЛИВО	ЗА СЛУЖЕБНО ПОЛЗВАНЕ
Croatia	TAJNO	POVJERLJIVO	OGRANIČENO
Cyprus	ΑΠΟΡΡΗΤΟ ABR:(ΑΠ)	ΕΜΠΙΣΤΕΥΤΙΚΟ ABR:(ΕΜ)	ΠΕΡΙΟΡΙΣΜΕΝΗΣ ΧΡΗΣΗΣ ABR:(ΠΧ)
Czech Republic	TAJNÉ	DŮVĚRNÉ	VYHRAZENÉ
Denmark	HEMMELIGT	FORTROLIGT	TIL TJENESTEBRUG
Estonia	SALAJANE	KONFIDENTSIAALNE	PIIRATUD
Finland	SALAINEN or HEMLIG	LUOTTAMUKSELLINEN or KONFIDENTIELL	KÄYTTÖ RAJOITETTU or BEGRÄNSAD TILLGÅNG

France	SECRET SECRET DÉFENSE <i>(Note 2, see below)</i>	CONFIDENTIEL DÉFENSE <i>(Notes 2 and 3, see below)</i>	<i>(Note 4, see below)</i>
Germany <i>(Note 5, see below)</i>	GEHEIM	VS - VERTRAULICH	VS - NUR FÜR DEN DIENSTGEBRAUCH
Greece	ΑΠΟΡΡΗΤΟ ABR:(ΑΠ)	ΕΜΠΙΣΤΕΥΤΙΚΟ ABR:(ΕΜ)	ΠΕΡΙΟΡΙΣΜΕΝΗΣ ΧΡΗΣΗΣ ABR:(ΠΧ)
Hungary	TITKOS!	BIZALMAS!	KORLÁTOZOTT TERJESZTÉSÚ!
Ireland	SECRET	CONFIDENTIAL	RESTRICTED
Italy	SEGRETO	RISERVATISSIMO	RISERVATO
Latvia	SLEPENI	KONFIDENCIĀLI	DIENESTA VAJADZĪBĀM
Lithuania	SLAPTAI	KONFIDENCIALIAI	RIBOTO NAUDOJIMO
Luxembourg	SECRET LUX	CONFIDENTIEL LUX	RESTREINT LUX
Malta	SIGRIET	KUNFIDENZJALI	RISTRETT
Netherlands	Stg. GEHEIM	Stg. CONFIDENTIEEL	Dep. VERTROUWELIJK
Poland	TAJNE	POUFNE	ZASTRZEŻONE
Portugal	SEGRETO	CONFIDENCIAL	RESERVADO <i>(Note 6, see below)</i>
Romania	STRICT SECRET	SECRET	SECRET DE SERVICIU
Slovakia	TAJNÉ	DÔVERNÉ	VYHRADENÉ
Slovenia	TAJNO	ZAUPNO	INTERNO
Spain	RESERVADO <i>(Note 6, see below)</i>	CONFIDENCIAL	DIFUSIÓN LIMITADA
Sweden	HEMLIG	KONFIDENTIELL	BEGRÄNSAT HEMLIG

Notes:

Note 1 Belgium: 'Diffusion Restreinte/Beperkte Verspreiding' is not a security classification in Belgium. Belgium handles and protects RESTREINT UE/EU RESTRICTED information and classified information bearing the national classification markings of RESTRICTED level in a manner no less stringent than the standards and procedures described in the security rules of the Council of the European Union.

Note 2 France: Information generated by France before 1 July 2021 and classified SECRET DÉFENSE and CONFIDENTIEL DÉFENSE continues to be handled and protected at the equivalent level of SECRET UE/EU SECRET and CONFIDENTIEL UE/EU CONFIDENTIAL respectively.

Note 3 France: France handles and protects CONFIDENTIEL UE/EU CONFIDENTIAL information in accordance with the French security measures for protecting SECRET information.

Note 4 France: France does not use the classification 'RESTREINT' in its national system. France handles and protects RESTREINT UE/EU RESTRICTED information in a manner no less stringent than the standards and procedures described in the security rules of the Council of the European Union. France will handle classified information bearing the national classification markings of RESTRICTED level in accordance with its national rules and regulations in force for 'DIFFUSION RESTREINTE'. The other Participants will handle and protect information marked 'DIFFUSION RESTREINTE' according to their national laws and regulations in force for the level RESTRICTED or equivalent, and according to the standards defined in the present document.

Note 5 Germany: VS = Verschlusssache.

Note 6 Portugal and Spain: Attention is drawn to the fact that the markings RESERVADO used by Portugal and Spain refer to different classifications.