



Connecting Europe Facility (CEF)

Call for proposals

CEF 2 Transport - Projects related to smart and
interoperable mobility

(CEF-T-2024-SIMOBGEN)

Version 1.0
24 September 2024



HISTORY OF CHANGES			
Version	Publication Date	Change	Page
1.0	24.09.2024	▪ Initial version.	
		▪	
		▪	
		▪	



EUROPEAN CLIMATE, INFRASTRUCTURE AND ENVIRONMENT EXECUTIVE AGENCY (CINEA)

CINEA.B – Sustainable networks and investments
CINEA.B.B1 – CEF Transport : Northern Europe, Austria + MOS and ERTMS

CALL FOR PROPOSALS

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0. Introduction

This is a call for proposals for EU action grants in the field of Transport under the Connecting Europe Facility (CEF).

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

- Regulation 2018/1046 ([EU Financial Regulation](#))
- the basic act (CEF Regulation [2021/1153](#)¹).

The call is launched in accordance with the 2021-2027 Work Programme² and will be managed by the **European Climate, Infrastructure and Environment Executive Agency (CINEA)** ('Agency').

The call covers the following **topics**:

- CEF-T-2024-SIMOBGEN-ERTMS-UNITS: ERTMS – unit contribution
- CEF-T-2024-SIMOBGEN-ITS-WORKS: ITS – studies, works or mixed
- CEF-T-2024-SIMOBGEN-RIS-WORKS: RIS – studies, works or mixed
- CEF-T-2024-SIMOBGEN-EMSWe-WORKS: EMSWe – studies, works or mixed
- CEF-T-2024-SIMOBGEN-VTMIS-WORKS: VTMIS – studies, works or mixed
- CEF-T-2024-SIMOBGEN-eFTI-WORKS: eFTI – studies, works or mixed
- CEF-T-2024-SIMOBGEN-REMIB-WORKS: Removing rail interoperability barriers - studies, works or mixed
- CEF-T-2024-SIMOBGEN-SESAR-DSDU-WORKS: SESAR digital sky demonstrators for a greener, more scalable and resilient ATM – works
- CEF-T-2024-SIMOBGEN-SESAR-CP-WORKS: SESAR Common Project One implementation projects – works
- CEF-T-2024-SIMOBGEN-SESAR-OP-WORKS: Other ATM Projects – works

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. Furthermore, the same application can only be submitted to one call and one topic.

¹ Regulation (EU) 2021/1153 of the European Parliament and of the Council of 7 July 2021 establishing the Connecting Europe Facility (OJ L 249, 14.7.2021, p. 38).

² Commission Implementing Decision C(2021)5763 final of 5.8.2021 concerning the adoption of the work programme for 2021-2027 and the financing decision for the implementation of the Connecting Europe Facility (CEF).

Transfer of applications between calls and/or topics will not be made.

Topics under this call are linked³ to other CEF Transport calls: (CEF-T-2024-CORECOEN, CEF-T-2024-COMPCOEN, CEF-T-2024-SAFEMOBOEN, CEF-T-2024-SIMOBOEN, CEF-T-2024-SUSTMOBGEN and CEF-T-2024-SAFEMOBGEN). The grants under both calls will be managed as linked actions.

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, objectives, scope, activities that can be funded and the expected results (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 [CINEA website](#) to consult the list of projects funded previously.

³ Twinned proposals concern the same project submitted under different calls and/or topics. Each proposal will be evaluated on its own merits – and based on the award criteria detailed in the Call document while taking into account the twinning with other applications. This means that when submitting twinned proposals, the applicant must cross-reference the twinned proposal(s) in Parts A and B of the application form.

1. Background

This call resorts under the Connecting Europe Facility 2021-2027⁴ – multiannual work programme for the transport sector⁵. The programme has the general objective to build, develop, modernise and complete the trans-European networks, taking into account the Union long-term decarbonisation commitments, and thus to contribute to smart, sustainable and inclusive growth and to enhance territorial, social and economic cohesion. It shall contribute to the development of projects of common interest relating to efficient, interconnected, and multimodal networks and infrastructure for sustainable, smart, interoperable, inclusive, accessible, resilient, safe and secure mobility. It shall contribute to more sustainable modal composition of the transport system, in order to meet EU climate neutrality and zero pollution ambitions by 2050.

CEF contributes to the EU goal of climate-related spending and decarbonising transport. In accordance with the European Green Deal, CEF 2021-2027 will target a contribution of 60% of its overall financial envelope to co-financing projects supporting climate objectives and moving fast towards zero-emission mobility. A methodology to track climate expenditures against the targets set has been developed by the Commission and will be applied to all projects under CEF⁶.

The implementation of the multiannual work programme aims at contributing to the completion of the Trans-European Networks - Transport (TEN-T), thereby further enhancing sustainable and smart mobility. It is expected that granting of support on the basis of this multiannual work programme will contribute to the timely and efficient development of the TEN-T Core Network, support the realisation of a robust and resource-efficient European transport system and address climate change in accordance with the European Green Deal.

In accordance with section 12 of the work programme, this call takes into account the newly applicable EU legislation, notably the revised TEN-T Regulation⁷ (EU) (2024)1679 of 13 June 2024.

As specified in the revised TEN-T Regulation, the Trans-European Transport Network should be gradually developed in three steps: completion of a core network by 2030, of an extended core network by 2040 and the comprehensive network by 2050. In accordance with Article 10.2 of this Regulation, references to the core network in the CEF Regulation must be construed as including the extended core network. Hence, in these 2024 calls, project proposals related to the completion of the TEN-T network and located on the extended core network must be submitted under the CORECOEN topic.

⁴ Regulation (EU) 2021/1153 of the European Parliament and of the Council of 7 July 2021 establishing the Connecting Europe Facility and repealing Regulations (EU) No 1316/2013 and (EU) No 283/2014 (OJ L 249, 14.7.2021, p. 38).

⁵ Commission Implementing Decision C(2021)5763 final of 5 August 2021 on the financing of the Connecting Europe Facility - Transport sector and the adoption of the work programme for 2021-2027, amended by Implementing Decision C(2023)4886 final of 25 July 2023.

⁶ Annex I to Regulation (EU) 2021/1060 of the European Parliament and of the Council of 24 June 2021 laying down common provisions on the European Regional Development Fund, the European Social Fund Plus, the Cohesion Fund, the Just Transition Fund and the European Maritime, Fisheries and Aquaculture Fund and financial rules for those and for the Asylum, Migration and Integration Fund, the Internal Security Fund and the Instrument for Financial Support for Border Management and Visa Policy (OJ L 231, 30.6.2021, p. 159).

⁷ Regulation (EU) 2024/1679 of the European Parliament and of the Council of 13 June 2024 on Union guidelines for the development of the trans-European transport network, amending Regulations (EU) 2021/1153 and (EU) No 913/2010 and repealing Regulation (EU) No 1315/2013

Priority will be given to support works projects for the completion of the core network by 2030.

Projects containing infrastructure components for railway, inland waterways, maritime, air and road transport, as well as for multimodal freight terminals, should align with the transport infrastructure requirements specified in the revised TEN-T Regulation.

The granted support will directly contribute, inter alia, to the achievement of important transport policy objectives, such as establishing major interoperable transport axes interconnecting national networks and facilitating the functioning of the internal market, the optimal use of existing infrastructure capacities, improving the safety and reliability of the network, fostering cohesion and cross-border mobility, enhancing accessibility of peripheral areas of the Union, enhancing an integrated multimodal approach aiming at shifting a considerable part of transport that currently takes place by road towards more sustainable transport modes, increasing the capacity and performance of rail, inland waterways and short sea shipping infrastructure, contributing to a more balanced modal distribution, and reducing the negative environmental impacts of transport, in particular as regards GHG emissions.

In developing a resource-efficient and resilient network, as specified in article 5 (g) of the revised TEN-T Regulation, projects should also take into account the decarbonisation of infrastructure construction⁸ as part of the exercise for climate proofing of infrastructure. The type of measures (if any) taken to decarbonise the project's implementation should be described under the award criterion "Impact".

In the context of the evaluation and selection of proposals, the assessment of the award criterion "Priority and urgency" will, where relevant, also take into account:

- the situation created by Russia's war of aggression against Ukraine;
- the Commission communication on Solidarity Lanes (COM/2022/217/Final);
- the "100 Climate Neutral and Smart Cities" announced by the Commission on 28 April 2022;
- the action plan on military mobility 2.0 (JOIN/2022/48/Final) of 10 November 2022.

In addition, under this call, the improvement of the transport infrastructure resilience, in particular the additional investments to adapt/upgrade the intended infrastructure to climate change, natural disasters and/or cyber security threats, can also be part of the project proposal, if relevant for the project.

Background specific to SESAR Common Project One, Other Projects and Digital Sky Demonstrator topics:

Air traffic Management (ATM) is a central component of the air transport ecosystem. It ensures that passengers and goods fly safely and efficiently with the lowest impact on the environment and climate change, no matter what types of aircraft are employed and anywhere in the airspace. ATM relies on a complex organisation of procedures, planning and technologies that, because of the safety and security implications and the cross-regional nature of air transport, requires high levels of coordination, harmonisation and interoperability of air/ground systems and operations.

⁸ [Decarbonisation of the Transport Infrastructure Construction Report](#)

The Single European Sky

To de-fragment and modernise ATM in Europe, the EU established the Single European Sky (SES) initiative. SES builds on five pillars: Economic regulation, airspace organisation/network management, technological innovation, safety and Human Dimension. These pillars are interrelated and interdependent.

The SESAR project

The SESAR (Single European Sky ATM Research and Development) project is the technological pillar of the SES. It aims to modernise ATM and to bundle technological and operational innovation in support of the SES. The SESAR project comprises three interrelated, continuous and evolving collaborative phases that define, develop and deploy innovative technological systems and operational procedures underlying the **Digital European Sky** (DES) defined in the European ATM Master Plan⁽⁹⁾. These phases, processes, their implementing and funding mechanisms and the participating stakeholders constitute the **ATM Innovation Cycle**. The topics under this call for proposals address the deployment phase of the cycle and the technological and operational enablers for its implementation: Digital Sky Demonstrators; Common Project One(CP1)¹⁰ ATM functionalities and; Communication, Navigation and Surveillance enablers.

The SESAR Digital Sky Demonstrators (DSD)

SESAR's Digital European Sky Programme is structured into three main Research & Innovation (R&I) phases (Exploratory Research, Industrial Research and Validation, and Digital Sky Demonstrators) underlying the SESAR projects development phase. Its objective is to deliver air traffic management (ATM) solutions through a pipeline of innovation addressing the thematic defined in the Strategic Research and Innovation Agenda (SRIA)¹¹. This pipeline aims to achieve readiness for deployment in operations of operational and technological solutions through the Technology Readiness Levels (TRL).

The establishment of large-scale Digital Sky Demonstrators (DSD) offers a viable means to build confidence and a bridge from research, through industrialisation, to implementation. As such, the DSDs will be closely connected to the standardisation and regulatory activities and will provide a platform for a critical mass of "early movers". DSDs will take place in live operational and cross-border environments (when required) demonstrating services, technologies and standards necessary to deliver the Digital European sky. This should help create buy-in from the supervisory authorities and operational staff, providing tangible evidence of the performance benefits in terms of environment, capacity, safety, security and efficiency. Typically, these activities will target **TRL-8** with actual systems completed and "mission qualified" through test and demonstration in an operational environment (ground or airborne). The DSDs shall identify the potential need for synchronised deployment involving different stakeholder groups.

The DSDs contribute to establishing Europe as the most efficient and environmentally friendly sky to fly in the world. The demonstrators will contribute to achieving the objective of net-zero greenhouse gas emissions by 2050 set by the European Green Deal, in line with the EU's commitment to global climate action under the Paris Agreement. To this end, the demonstrators shall aim at putting in place a set of

⁹ [SESAR | eATM Portal \(atmmasterplan.eu\)](https://www.sesarju.eu/eatm-portal)

¹⁰ Common Project One, Commission Implementing Regulation (EU) 2021/116.

¹¹ The SRIA details the research and innovation roadmaps to achieve the Digital European Sky. The document is available on the SESAR JU website (<https://www.sesarju.eu/sria>)

operational measures and technological innovations to improve the fuel efficiency of flights, reduce CO₂ and non-CO₂ emissions, reduce aircraft noise impact and improve air quality at and around the airports.

Furthermore, they enable a more flexible, scalable, resilient, safe and secure ATM that can withstand disruptions in the aviation system through a phased but substantial progress on the deployment of the future European airspace architecture (according to the AAS TP) and contribute to the digital transformation of air navigation service provision. This requires changes on the way services are provided, with a view to delivering the capacity needed by airspace users and building a state-of-the-art, scalable and resilient system that will remain at least as safe as today.

To achieve the Digital European Sky (Phase D of the European ATM Master Plan¹²), nine research and innovation flagships have been identified in the SRIA with their underlying R & I needs/challenges. The SRIA presents the strategic R&I roadmaps for the years 2021 to 2027 to deliver on the implementation of the Digital European Sky (i.e. fully scalable ATM/ANS services supported by a digital ecosystem minimising the environmental footprint of aviation), including the gradual transition towards higher levels of automation and virtual centres and ATM data service providers. The activities outlined in the SRIA to build a digitalised infrastructure are also critical for a post-COVID recovery, enabling ATM/ANS to become more scalable, economically sustainable, environmentally efficient and predictable.

The DSD under this call contribute to five SRIA research and innovation flagships, namely: **aviation green deal, connected and automated ATM** (e.g. SESAR solutions aiming at a gradual transition towards higher levels of automation), **Air-ground integration and autonomy, Capacity on demand and dynamic airspace** and **virtualisation and cybersecure data-sharing** (e.g., virtual centres and ATM data service providers). They also contribute to completing key objectives under the Airspace Architecture Study Transition Plan (AAS TP)¹³. The DSDs may address the following elements:

- GBAS deployment leading to environmental benefits for airports and TMA
- Trajectory based operations (TBO) enabling aviation green deal
- Long-haul flights SWIM-enabled in-flight trajectory optimisation
- Greener ATM operations at European airports
- Scalable and resilient network management operations

With the aim of ensuring a common approach across all projects contributing to deliver the Digital European Sky, a programme execution framework has been defined by the SESAR 3 JU and is available on the SESAR 3 JU website (<https://sesarju.eu/sites/default/files/documents/projects/SESAR3ProjectHandbook.pdf>). The document provides guidance to project coordinators and their teams on how to conduct their project and comply with the needs defined by the SESAR 3 JU for its programme execution. This guidance is applicable to all SESAR 3 Digital Sky Demonstrators projects.

¹² [SESAR Joint Undertaking | European ATM Master Plan 2020 \(sesarju.eu\)](https://sesarju.eu/sites/default/files/documents/projects/SESAR3ProjectHandbook.pdf)

¹³ [SESAR Joint Undertaking | Airspace Architecture Study - Transition Plan \(sesarju.eu\)](https://sesarju.eu/sites/default/files/documents/projects/SESAR3ProjectHandbook.pdf)

2. Objectives — Themes and priorities — Activities that can be funded — Expected impact

CEF-T-2024-SIMOBGEN-ERTMS-UNITS: ERTMS – unit contribution

Objective: The objective is to increase the interoperability of rail transport by deploying European Rail Traffic Management System (ERTMS).

Scope: The following works can be supported:

- European Rail Traffic Management Systems (ERTMS) on-board and track-side deployment with a priority given to on-board equipment.

The projects must be compliant with Commission Implementing Regulation (EU) 2023/1695¹⁴, and with Directive (EU) 2016/797¹⁵ and Directive (EU) 2016/798¹⁶ of the European Parliament and of the Council or subsequent versions.

CEF support is granted in the form of unit contributions as defined in the Commission Decision authorising the use of unit costs to support the deployment of ERTMS under the Connecting Europe Facility (CEF) – Transport¹⁷.

For **ERTMS on-board** proposals:

- Support for retrofitting and upgrade will be limited to vehicles put into operation before 31/12/2020.
- Support will not be given to fitment of new vehicles.
- "International" unit contribution is granted to vehicles planned for authorisation to operate with ERTMS in more than one Member State.
- "Software + Hardware" unit contribution is granted to vehicles demonstrating a necessity for hardware modification(s).

For **ERTMS track-side** proposals:

- Priority will be given to cross-border sections.
- For proposals addressing Class A radio communication systems priority will be given to "advanced" Class A radio communication systems, i.e. 5G/FRMCS.
- Proposals covering electronic interlocking and/or Class A radio communication as a stand-alone project shall demonstrate a link with ETCS deployment on the railway line(s) in subject.
- "Urban Node" unit contribution is granted to lines subject to ERTMS deployment located within the administrative borders of a city referred to in the Annex II of the revised TEN-T Regulation.

¹⁴ Commission Implementing Regulation (EU) 2023/1695 of 10 August 2023 on the technical specification for interoperability relating to the control-command and signalling subsystems of the rail system in the European Union and repealing Regulation (EU) 2016/919

¹⁵ Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union (*OJ L 138, 26.5.2016, p. 44*).

¹⁶ Directive (EU) 2016/798 of the European Parliament and of the Council of 11 May 2016 on railway safety (recast) (*OJ L 138, 26.5.2016, p. 102*).

¹⁷ Decision authorising the use of unit contributions to support the deployment of ERTMS, electric vehicles recharging infrastructure and the retrofitting of noisy wagons under CEF Transport – 22 July 2021, <https://transport.ec.europa.eu/system/files/2021-07/2021-07-22-ertms-af-noise.pdf>

CEF-T-2024-SIMOBGEN-ITS-WORKS: ITS – studies, works or mixed

Objective: The objective is to modernise transport infrastructure and to facilitate road traffic on the TEN-T network, including urban nodes.

Scope: Studies and / or works related to the following projects addressing Intelligent Transport Systems for road (ITS), as well as interfaces with other modes of transport:

- projects related to the deployment and/or upgrade of ITS infrastructure and services in compliance with the priority areas of Directive 2010/40/EU¹⁸, as amended by Directive (EU) 2023/2661¹⁹, on the deployment of ITS. This also includes the upgrade of eCall Public safety answering points for receiving and handling eCall, and the upgrade of National Access Points taking into account the recommendations of the CEF projects NAPCORE and Data4PT.
- projects related to deployment of cooperative ITS (C-ITS). Projects must deploy C-ITS stations to provide C-ITS services based on the hybrid communication approach defined in the European C-ITS Strategy²⁰. In addition:
 - C-ITS deployments should ensure compatibility with the specifications developed by the C-ROADS platform and interoperability with existing C-ITS stations deployed in accordance with those specifications;
 - C-ITS deployments should be in line with Security Certificate Policy for deployment and Operation of European C-ITS;
 - The project should demonstrate cooperation with the C-Roads Platform.

Priority may be given to proposals that involve implementation in several EU Member States.

Where relevant, ITS projects should seek synergies with 5G corridors deployment.

Where relevant, projects should take into account the innovative new technologies and solutions in the fields of smart applications for transport resulting from Horizon Europe activities as well as the re-use of the European Digital Building Blocks²¹.

Intelligent Transport Systems supported under CEF must be accessible for use by all operators on a non-discriminatory basis.

This topic focuses on the deployment or upgrade of ITS infrastructure and services. It may include data collection and dissemination that are necessary for these objectives, including the digitalisation of processes needed for this purpose. It also includes

¹⁸ Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport

¹⁹ Directive (EU) 2023/2661 of the European Parliament and of the Council of 22 November 2023 amending Directive 2010/40/EU on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport

²⁰ COM (2016) 766: "A European strategy on Cooperative Intelligent Transport Systems, a milestone towards cooperative, connected and automated mobility".

²¹ <https://ec.europa.eu/digital-building-blocks/wikis/display/DIGITAL/Digital+Homepage>

projects that address specifically the requirements of Article 6a of Directive 2010/40/EU, as amended by Directive (EU) 2023/2661, on the availability of data and deployment of ITS services, corresponding to data types and ITS services listed in Annexes III and IV of that Directive, and related geographical scope, including when indicated in Annex III for roads in cities at the centre of urban nodes.

ITS projects can be located on the core, extended core and/or comprehensive network as well as in urban nodes of the TEN-T network. In case the application covers certain road sections outside the TEN-T network, applicants have to justify their need and demonstrate their positive effects for the TEN-T network.

CEF-T-2024-SIMOBGEN-RIS-WORKS: RIS – studies, works or mixed

Objective: The objective is to modernise inland waterway transport infrastructure and facilitate the traffic, safety and transport management in the inland waterways of the TEN-T network.

Scope: Studies and / or works related to:

- Projects supporting the implementation of River Information Services (RIS)²², inland single window, inland port community systems, and other relevant vessel traffic management systems, including automation and smart shipping.

The projects should primarily address inland waterway transport and/or port services targeted at inland waterway vessels.

Where relevant, the projects should take into account the innovative new technologies and solutions in the fields of smart applications for transport resulting from Horizon Europe activities as well as the re-use of the European Digital Building Blocks²³.

Digital platforms supported under CEF must be accessible for use by all operators on a non-discriminatory basis.

CEF-T-2024-SIMOBGEN-EMSWe-WORKS: EMSWe – studies, works or mixed

Objective: The objective is to modernise maritime transport infrastructure and facilitate maritime traffic on the TEN-T network.

Scope: Studies and/or works related to:

- Projects supporting the implementation of the European Maritime Single Window environment (EMSWe)²⁴.

²² Directive 2005/44/EC of the European Parliament and of the Council of 7 September 2005 on harmonised river information services (RIS) on inland waterways in the Community (*OJ L 255, 30.9.2005, p. 152*).

²³ <https://ec.europa.eu/digital-building-blocks/wikis/display/DIGITAL/Digital+Homepage>

²⁴ As defined in the Regulation (EU) 2019/1239 establishing a European Maritime Single Window environment (*OJ L 198, 25.7.2019, p. 64*).

Where relevant, the projects should take into account the innovative new technologies and solutions in the fields of smart applications for transport resulting from Horizon Europe activities as well as the re-use of the European Digital Building Blocks²⁵.

Digital platforms supported under CEF must be accessible for use by all operators on a non-discriminatory basis.

CEF-T-2024-SIMOBGEN-VTMIS-WORKS: VTMIS – studies, works or mixed

Objective: The objective is to modernise maritime transport infrastructure and facilitate maritime traffic on the TEN-T network.

Scope: Studies and / or works related to:

- Projects supporting the implementation of Vessel Traffic Monitoring and Information Systems (VTMIS) for maritime transport, maritime port community systems, and relevant customs information systems.

Priority will be given to projects supporting the implementation of VHF Data Exchange Systems (VDES), Vessel traffic services for future monitoring of Maritime Autonomous Surface Ships (MASS) and Mandatory Ship Reporting Systems (MRS).

Investments in automation of port superstructure, e.g. automated gates, will not be supported.

Where relevant, the projects should take into account the innovative new technologies and solutions in the fields of smart applications for transport resulting from Horizon Europe activities as well as the re-use of the European Digital Building Blocks²⁶.

Digital platforms supported under CEF must be accessible for use by all operators on a non-discriminatory basis.

CEF-T-2024-SIMOBGEN-eFTI-WORKS: eFTI – studies, works or mixed

Objective: The objective is to modernise freight transport infrastructure on the TEN-T network.

Scope: Studies and / or works related to:

- Projects supporting Member States to develop and implement IT platforms and processes in accordance with the eFTI Regulation²⁷, and
- Projects supporting further interoperability and interconnectivity between the eFTI environment and the different ICT systems and platforms used for recording and processing regulatory information as provided for in other Union transport legislation.

²⁵ <https://ec.europa.eu/digital-building-blocks/wikis/display/DIGITAL/Digital+Homepage>

²⁶ <https://ec.europa.eu/digital-building-blocks/wikis/display/DIGITAL/Digital+Homepage>

²⁷ Regulation (EU) 2020/1056 of the European Parliament and of the Council of 15 July 2020 on electronic freight transport information (OJ L 249, 31.7.2020, p. 33).

Where relevant, the projects should take into account the innovative new technologies and solutions in the fields of smart applications for transport resulting from Horizon Europe activities as well as the re-use of the European Digital Building Blocks²⁸.

Digital platforms supported under CEF must be accessible for use by all operators on a non-discriminatory basis.

CEF-T-2024-SIMOBGEN-REMIB-WORKS: Removing rail interoperability barriers - studies, works or mixed

Objective: The objective is to increase the interoperability of the rail system in EU.

Scope: Studies and / or works related to:

- Projects removing interoperability barriers in compliance with the Technical Specifications for Interoperability (TSI) adopted by Directive (EU) 2016/797²⁹ except for TSI control-command signalling, which is covered under the ERTMS topics.
- Deployment of telematics applications or upgrade/renewal of existing ones to seek compliance with Technical Specifications for Interoperability relating to Telematics Applications for Freight/Passenger Services in the railway sector. Project applicants must be prepared to collaborate with the European Union Agency for Railways (ERA), for compliance assessment and with a view to implement rail ontology for telematics applications. Priority will be given to support the Telematics applications relating to the following processes:
 - Capacity management and traffic management of rail infrastructure (TAP/TAF TSIs),
 - Train preparation (TAP/TAF TSIs),
 - Management of freight wagons and their shipments (TAP/TAF TSI),
 - Rail ticketing services (TAP TSI).
- Automatic gauge change facilities in rail freight traffic in accordance with Article 9(2), point (b)(v) of the CEF Regulation.
- Studies concerning Digital Automatic Coupling (DAC) for rail freight operations (including validating the system in commercial operations). Projects must involve relevant stakeholder groups from at least 4 Member States and include testing in cross border and shunting yards operations. The studies can cover all phases/tasks necessary for collecting data on the system reliability and availability in commercial operations (technical, administrative, legal, certification/authorisation, procedures, etc.). The studies/technical reports shall contribute to a wider deployment of DAC in the EU and therefore be publicly available.

Investments concerning rolling stock, notably the installation of sensors or other devices on wagons, are not supported, except as regards DAC studies.

²⁸ <https://ec.europa.eu/digital-building-blocks/wikis/display/DIGITAL/Digital+Homepage>

²⁹ Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on the interoperability of the rail system within the European Union (recast) (OJ L 138, 26.5.2016, p. 44).

CEF-T-2024-SIMOBGEN-SESAR-DSDU-WORKS: SESAR digital sky demonstrators for a greener, more scalable and resilient ATM – works

Objective: The objective is to modernise air transport infrastructure on the TEN-T network.

Scope:

In accordance with the Article 9(2)(b)(ii) of the CEF Regulation, this priority will support works related to DSDs addressing the areas listed below.

SESAR's DES aims at delivering innovative, interoperable, and sustainable ATM solutions (SESAR solutions)³⁰ through an R&I innovation pipeline that brings new operational and technological ATM solutions up to the Technology Readiness Level (TRL) 6³¹.

The programme also aims at accelerating the deployment (industrialisation and implementation activities³²) of SESAR solutions by establishing **Digital Sky Demonstrators** (DSD), which offer a viable means to accelerate market uptake of SESAR solutions.

DSDs take place in live operational and, when required, cross-border ground and airborne environments, thus providing tangible evidence of the environmental, capacity, safety, security, and efficiency performance benefits of the services, technologies and standards resulting from the relevant SESAR solutions. They also bridge research with industrialisation and implementation activities for which DSD shall provide recommendations. The DSDs are, therefore, closely connected to standardisation and regulatory activities and will provide a platform for a critical mass of 'early movers' (at least 20%³³ of the targeted operating environment).

The DSDs contribute to achieving a climate neutral aviation and to making Europe the most efficient and environmentally friendly sky to fly in the world, by accelerating implementation of operational measures and technological innovations to improve the fuel efficiency of flights, reduce CO₂ emissions, reduce aircraft noise impact, and improve air quality at and around the airports.

Furthermore, the DSDs enable a more flexible, scalable, resilient, safe, and secure ATM that can withstand disruptions in the aviation system based on the future European airspace architecture underlying the DES and contributing to the digital transformation of air navigation service provision. This requires changes in the way these services are provided, with a view to delivering the capacity needed by airspace users and building a state-of-the-art, scalable, and resilient system that will remain at least as safe as today.

³⁰ SESAR Solutions catalogue: [SESAR Joint Undertaking | Solutions dashboard \(sesarju.eu\)](https://sesarju.eu)

³¹ TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)

³² Article 2(5) and (6) of Commission Implementing Regulation (EU) No 409/2013.

³³ SESAR 3 JU Multiannual Work Programme: [SESAR Joint Undertaking | Multi-annual work programme \(sesarju.eu\)](https://sesarju.eu)

DSDs aim to bring to TRL-8³⁴ the SESAR solutions that contribute to the following areas that are critical for achieving the DES and the related performance ambitions:

1. Alerts for reduction of collision risks on taxiways and runways.
2. Optimising airport and TMA environmental footprint.
3. Dynamic airspace configuration.
4. Increased automation support.
5. Transformation to trajectory-based operations (TBO).
6. Virtualisation of operations.
7. Transition towards high performance of air-ground connectivity (multilink).
8. Service-oriented delivery model (data driven and cloud based).
9. CNS optimisation, modernisation and resilience.
10. Implement innovative air mobility (IAM) & drone operations.

Proposals may address one or more of the areas listed above, which are described in the following sections, and are not required to address all of the underlying SESAR solutions and elements.

The details on the relevant on-going projects referred to in following areas are available on the SESAR 3 JU website (www.sesarju.eu).

1. Alerts for reduction of collision risks on taxiways & runways

1.1 Airport ground safety nets

Airport safety nets require the A-SMGCS planning and routing function. This function is not mandated by CP1. Moreover, the CP1 mandate is limited to runways.

This DSD shall demonstrate the safety benefits delivered thanks to the implementation of support tools for controllers at A-SMGCS equipped airports to detect (and provide appropriate alerts on) potential and actual conflicting situations, incursions and non-conformance to procedures or ATC clearances, involving mobiles (and stationary traffic) as well as unauthorised/unidentified traffic on runways.

The proposed demonstrators shall implement these elements:

- a) Conflicting ATC clearances (CATC) including. This may support the safety case for the application of the ICAO 'reasonable assurance' principle.
- b) Conformance monitoring (CMAC) alerting functions for controllers and new information regarding the operational status of a runway, which increases ATCO situation awareness.

The demonstration area may be extended to the complete aerodrome movement area (i.e., taxiways and in the apron/stand/gate area).

The proposed demonstrators shall implement the following SESAR solution:

- a) PJ.02-W2-21.1 'Enhanced Airport Safety Networks for Controllers at A-SMGCS Airports' (<https://www.sesarju.eu/sesar-solutions/extended-airport-safety-nets-controllers-smgcs-airports>)

To demonstrate the benefits of this SESAR solution, the proposed demonstrators shall be implemented in at least 3 airports (either medium, large or very large airports) in at least 2 different EU Member States.

2. Optimising airport and TMA environmental footprint

³⁴ TRL 8 – system complete and qualified

2.1 Integration of regional airports with the Network Manager³⁵

Increased connectivity between EU regional airports and the Network Manager is done via the provision of departure planning information (DPI) messages from airports to the Network Manager based on target times and a reduced set of CDM milestones implemented and calculated in a quasi-automatic fashion.

This DSD aims at demonstrating that by increasing the connectivity between regional EU airports and the Network Manager and by a better and earlier alignment between network predicted and last planned/before airborne trajectories, the predictability of the European network will be improved. The demonstrator shall also give evidence of improvements in the Airspace Users flight planning processes (e.g., improving fuel prediction), thanks to the distribution by the Network Manager of the departure planning information received from the airports. The proposed demonstrator shall provide an estimation of the network capacity gains and their corresponding environmental benefits (due to avoided vertical and/or horizontal re-routing).

The proposed demonstrators must include at least five regional airports in at least three different EU Member States.

The proposed demonstrators shall implement the following SESAR solutions:

- a) PJ.04-W2-28.1 'Connected regional airports' (<https://www.sesarju.eu/sesar-solutions/collaborative-management-regional-airports>)
- b) PJ.09-03-02: 'AOP/NOP departure information integrated in eFPL' (<https://www.sesarju.eu/sesar-solutions/aopnop-departure-information-integrated-efpl>)

2.2 Better managing arrival constraints

Planning arrivals into a busy airport an hour or more before touchdown cuts down holding time, reduces noise and saves fuel. Extended-AMAN (E-AMAN) allows for the sequencing of arrival traffic much earlier than is currently the case, by extending the AMAN horizon from the airspace close to the airport to further upstream and so allowing more smooth traffic management.

This DSD aims at demonstrating the reduction of vectoring, holding and fuel consumption thanks to the implementation of arrival management enhancements on top of the Extended AMAN (E-AMAN) required under CP1.

The proposed demonstrators shall include at least one of the following elements:

- a) The demonstration of a coordination mechanism (and required system support) to facilitate cross-border management between ATS units of arrival constraints originating from different E-AMAN (SESAR solution PJ.25-01).
- b) The demonstration of the benefits of providing arrival sequence time information and associated advisories by the E-AMAN into ATS units responsible for inbound traffic originating from airports affected by the E-AMAN horizon and by apportionment of delay on the ground, between time to lose at the gate (in case of

³⁵ Eurocontrol was appointed as the Network Manager for the period 1 January 2020-31 December 2029 by Commission Implementing Decision (EU) 2019/709. See also: <https://eur-lex.europa.eu/legal-content/EN/AUTO/?uri=CELEX:32019R0123>

large delays) and at the runway holding point (for shorter delays) at the departure airport to achieve the required time-to-lose (SESAR solution PJ.25-01).

- c) The demonstration of the time and fuel efficiency benefits thanks to the provision of target times of arrivals (TTA) to traffic departing outside the European Regulation Area. This is aiming at smoothing the arrival traffic at an airport, avoiding a situation where many long-haul flights arrive at the same time and must absorb a significant amount of delay in a holding pattern (SESAR solution PJ.25-02).

The demonstrators may address Flexible Use of Airspace (FUA) aspects, in particular the better use of airspace released by military, which could possibly result in aircraft reaching the arrival destination to early.

Based on the elements chosen, the proposed demonstrators shall implement the corresponding SESAR solutions:

- a) PJ.25-01: 'Collaborative Decision Making (CDM) between airports, TMAs and ACCs for Overlapping AMANs' (<https://www.sesarju.eu/sesar-solutions/collaborative-decision-making-cdm-between-airports-tmas-and-accs-overlapping-amans>)
- b) PJ.25-02: 'Target Time of Arrival (TTA) management for seamless integration of out-of-area arrival flights' (<https://www.sesarju.eu/sesar-solutions/target-time-arrival-tta-management-seamless-integration-out-area-arrival-flights>).

2.3 Increasing runway throughput

The expected rapid growth in air traffic will lead to an increasing number of capacity constrained airports. Therefore, airports must significantly improve the runway throughput while maintaining or increasing runway safety levels.

This DSD aims at demonstrating the runway throughput improvements and the resilience and efficiency benefits at capacity constrained airports for both arrival and departure operations generated by implementing at least one of the following elements:

- a) Optimised runway delivery on final approach enables safe, consistent, and efficient delivery of the required separation or spacing between arrival pairs on final approach to the runway landing threshold, supported by the optimised runway delivery (ORD) tool (SESAR solution PJ.02-01-01).
- b) Optimised separation delivery for departures, introducing an optimised separation delivery (OSD) tool and its associated procedures to support safe and reliable handling of aircraft departures (SESAR solution PJ.02-02-02).
- c) Wake turbulence pairwise separations for arrivals (PWS-A) and for departures (PWS-D) based on static aircraft characteristics (SESAR solutions PJ.02-01-04 and PJ.02-01-06).
- d) Minimum radar separations (MRS) on final approach (in-trail minimum radar separation from 2.5 NM to 2 NM) based on required surveillance performance (RSP) and supported by the optimised runway delivery (ORD) tool (SESAR Solution PJ.02-03).
- e) Reduced separation based on local runway occupancy time characterisation (ROCAT) for different aircraft is considered together with wake categorisation separation and MRS, for computing a new separation minimum based on these factors and defines separation sub-categories (SESAR Solution PJ.02-08-03).

Based on the elements chosen, the proposed demonstrators shall implement the corresponding SESAR solutions:

- a) PJ.02-01-01: 'Optimised Runway Delivery on Final Approach' (<https://www.sesarju.eu/sesar-solutions/optimised-runway-delivery-final-approach>)
- b) PJ.02-01-02: 'Optimised separation delivery for departure' (<https://www.sesarju.eu/sesar-solutions/optimised-separation-delivery-departure>)
- c) PJ.02-01-04: 'Wake turbulence separations (for arrivals) based on static aircraft characteristics' (<https://www.sesarju.eu/sesar-solutions/wake-turbulence-separations-arrivals-based-static-aircraft-characteristics>)
- d) PJ.02-01-06: 'Wake turbulence separations (for departures) based on static aircraft characteristics' (<https://www.sesarju.eu/sesar-solutions/wake-turbulence-separations-departures-based-static-aircraft-characteristics>)
- e) PJ.02-03: 'Minimum-pair separations based on required surveillance performance (RSP)' (<https://www.sesarju.eu/sesar-solutions/minimum-pair-separations-based-required-surveillance-performance-rsp>)
- f) PJ.02-08-03: 'Reduced separation based on local runway occupancy time characterisation (ROCAT)' (<https://www.sesarju.eu/sesar-solutions/reduced-separation-based-local-runway-occupancy-time-characterisation-rocat>).

To demonstrate the benefits of the above-mentioned SESAR solutions, the proposed demonstrators shall be implemented in at least 3 different airports in at least 2 different EU Member States.

The work under the proposed demonstrators shall be complementary to the scope/approach of the on-going DSD project HERON concerning solutions PJ.02-01-01 and PJ.02-08-03.

3. Dynamic Airspace Configuration

3.1 Dynamic airspace configurations

Dynamic airspace configurations (DAC) allow air navigation service providers (ANSPs) to organise, plan, and manage airspace configurations with enough flexibility to respond to changes in traffic demand. Higher granularity and flexibility in the airspace configurations, dynamically adjusting them in response to changes on demand will lead to increased flexibility and airspace capacity for both civil and military users.

This DSD aims at demonstrating the capacity and efficiency benefits generated by the seamless integration of dynamic airspace configurations and integrated network management ATC planning (INAP).

The demonstrators may address Flexible Use of Airspace (FUA) aspects, in particular to test benefits of dynamic configuration on capacity provision in shared airspace.

The proposed demonstrators shall include capabilities such as: enhanced traffic prediction; spots detection; integration of different types of spots in network DCB processes; traffic analysis and measures monitoring; improved catalogue of demand and capacity balancing (DCB) measures; 'what-if/what-else' and the integration of complexity / ATCO workload assessment and ATCO availability within the sector configuration optimisation process.

The proposed demonstrators shall implement the following SESAR solution:

- a) PJ.09-W2-44: 'Dynamic airspace configurations (DAC)' (<https://www.sesarju.eu/sesar-solutions/dynamic-airspace-configurations-dac>).

3.2 Mission trajectory management and dynamic mobile areas

To accommodate military flights, the airspace is often closed, sometimes at short notice, to civil traffic. Mission trajectory management and dynamic mobile areas are operational and technical solutions that allow more flexible civil-military cooperation to maximise the use of airspace.

This DSD aims at demonstrating improvements on the use of airspace capacity for both civil and military AUs leading to better use of airspace and an increased flexibility in civil–military coordination. The scope includes new operating methods for mission trajectory management (MTM) in the context of dynamic airspace configurations (DAC), the integration of dynamic mobile areas (DMA) of type 1 and type 2 design principles for airspace reservation (ARES) into both the MT development and DAC processes and the dynamic coordination between wing operation centre (WOC) and local DAC actors. The demonstrator shall involve at least one representative from civil stakeholders and one representative from military stakeholder.

The proposed demonstrators shall include the following elements:

- a) The management of mission trajectory (MT) as shared via iOAT FPL in network planning processes.
- b) The B2B services for iOAT FPL filing from wing operations centre (WOC) to the Network Manager as well as for the iOAT FPL distribution from the Network Manager to ATC.
- c) Airspace management (ASM) including dynamic mobiles areas type 1 and 2.
- d) WOC integration into ASM.
- e) CDM process between the WOC and ASM.
- f) ATCO support systems.

The proposed demonstrators shall implement the following SESAR solutions:

- a) PJ.07-W2-40: 'Initial 4D MT development with integrated DMA types 1 and 2 supported by automation and dynamic civil-military CDM' (<https://www.sesarju.eu/sesar-solutions/mission-trajectories-management-integrated-dmas-type-1-and-type-2>);
- b) PJ.07-03: 'Improved OAT Flight Plan (iOAT FPL) in IFPS and its distribution to concerned ATC units' (<https://cordis.europa.eu/project/id/733020/results>).

4. Increased automation support

4.1 Sector team configurations

Traditionally ATC operations have been based on a team composed of two air traffic controllers, who undertake the roles of planning controller (PC) and executive controller (EC). SESAR has developed new sector team configurations (e.g., multi-sector planner) where a multi section planner responsible for airspace controlled by up to two executive controllers (2ECs) for En-Route / eTMA environments.

This DSD aims at demonstrating the benefits, in terms of flight predictability, reduced fuel burn, a better distribution of human resources and improved task sharing, that result from implementing the combination of one planning ATCO to two tactical/executive ATCOs. This requires the adaptation of the automation support tools.

The proposed demonstrators shall implement the following SESAR solution:

- a) PJ.10-01a1: 'High productivity controller team organisation in en-route (including eTMA)' (<https://www.sesarju.eu/sesar-solutions/high-productivity-controller-team-organisation-en-route-including-etma>).

4.2 New HMI interaction modes

New methods of controller interaction with the human machine interface (HMI), applying mature technologies will lead to increased controller productivity, reduced workload, stress level and improve safety.

This DSD aims at demonstrating the benefits in terms of reduced workload and mental strain on controllers by implementing new HMI interaction modes and technologies for air traffic service unit (ATSU)

The proposed demonstrators shall include at least one of the following elements:

- a) User-profile management systems (SESAR Solution PJ.10-W2-96 UPMS).
- b) Automatic speech recognition application, which can be deployed as new cloud-based service (SESAR Solution PJ.10-W2-96 ASR).
- c) A 'fade-out' algorithm, which, at the initiative of the controller in a first step and the system in a second step, places in the background (by means of colour) flights where controller intervention on spacing is not required (e.g., if they are separated with 'wide margins'), while drawing the controllers' attention to the flights which may possibly interact with one another. The automation system requests controller intervention when the conditions are anticipated to be outside the automation domain of operation (e.g., separation is anticipated to be outside the "wide margins" condition). Transfer of separation responsibility between humans and automation and approval request type coordination between human controllers and automation must be addressed, together with the associated liability and legal aspects (SESAR Solution PJ.10-W2-96 AG).

Based on the elements chosen above, the proposed demonstrators shall implement the corresponding SESAR solutions:

- a) PJ.10-W2-96 AG: 'Attention guidance – 'fade-out' algorithm' (<https://www.sesarju.eu/sesar-solutions/attention-guidance>)
- b) PJ.10-W2-96 ASR: 'Automatic speech recognition' (<https://www.sesarju.eu/sesar-solutions/automatic-speech-recognition>)
- c) PJ.10-W2-96 UPMS: 'user profile management system' (<https://www.sesarju.eu/sesar-solutions/user-profile-management-system>)

5. Transformation to trajectory-based operations (TBO)

5.1 Enhanced conflict detection and resolution support tools by using aircraft derived data

Reliable and accurate conflict detection and resolution services lead to better decision making and fewer tactical interventions by controllers.

This DSD aims at demonstrating the operational benefits in terms of capacity and efficiency resulting from reducing trajectory prediction uncertainty by implementing conflict detection and resolution (CD&R) support tools improved via the use of ADS-C data (using Revision A or Revision B of the ATS B2 standards) and high-resolution wind models, reducing the trajectory prediction uncertainty.

The proposed demonstrators may optionally include:

- a) The prediction of ATC intent through different techniques (e.g., machine learning), and conflict detection using trajectories calculated using this predicted intent.
- b) The potential use of EPP to measure inefficiencies due to early descent, which are not captured by CDO/CCO metric time-in-level-segments, potentially considering the difference between the actual and FMS TOD, EPP variability, etc.
- c) Use of higher granularity of wind data.
- d) Use of SSR-downlinked parameters (e.g., rate of climb/rate of descent) in combination with ADS-C data.

The proposed demonstrators shall implement the following SESAR solution:

- a) PJ.18-W2-53B: 'Improved Performance of CD/R tools enabled by reduced trajectory prediction uncertainty' (<https://www.sesarju.eu/sesar-solutions/improved-performance-cdr-tools-enabled-reduced-trajectory-prediction-uncertainty>)

Applicants must demonstrate how their proposals build on the work of project PJ.38 ADSCENSIO and the on-going DSD project HERON on the use of ADS-C data on the ground.

5.2 Dynamic route availability (RAD)

The route availability document (RAD) is a common reference document containing the policies and procedures for route and traffic orientation. Currently RAD measures are static and pre-determined.

This DSD aims at demonstrating the benefits on fuel efficiency generated by implementing a Dynamic RAD solution, which applies restrictions only when needed through a daily collaborative decision making (CDM) process. A temporary relaxation of restrictions allows airspace users to file more efficient trajectories whenever the opportunity arises.

The proposed demonstrators shall implement the following SESAR solution:

- a) #201: 'Dynamic Route Availability Document (RAD)' (<https://www.sesarju.eu/sesar-solutions/dynamic-route-availability-document-rad>).

The applicant shall duly demonstrate that the work performed through the demonstration is complementary to the scope/approach of the ALBATROSS project and of the on-going DSD HERON project.

5.3 Users driven prioritisation process

The airspace users' driven prioritisation process (UDPP) sees the extension of airspace user capabilities, allowing them to recommend a priority order request to the Network Manager and appropriate airport authorities for flights affected by delays on departure and on arrival, and to share preferences with other ATM stakeholders in capacity-constrained situations (CCS).

The DSD aims at demonstrating the benefits in terms of flexibility for the airspace users to reschedule their flights and to keep their business-driven schedule priorities on track when facing capacity constraints and delays. This includes the extension of the AUs' ability to influence the regulation of arrivals whilst the flights are in pre-departure phase.

The proposed demonstrators shall implement the following SESAR solution:

- a) PJ.07-W2-39: 'Collaborative framework managing delay constraints on arrivals' (<https://www.sesarju.eu/sesar-solutions/collaborative-framework-managing-delay-constraints-arrivals>).

5.4 Flight Operations Centre integration into the ATM network

The full integration of the FOC into the ATM network process through improved interaction tools and the use of enriched demand–capacity balancing (DCB) information and enhanced what-ifs to improve flight planning, including the Network Manager flight plan approval process will improve network predictability.

This DSD aims at demonstrating the benefits that an enhanced collaborative decision making between providers and users will bring in terms of better adherence to the agreed trajectory during execution, hence better predictability. This includes the demonstration of protection hotspots (to protect an airspace from undesired rerouted flights) and pro-active flight delay criticality indicator (FDCI) (Airspace Users inform the Network Manager about critical flights before any DCB measure is allocated and for which DCB delay is particularly costly and should be avoided).

The proposed demonstrators must also address how operators without an FOC are not detrimentally affected.

The proposed demonstrators shall implement the following SESAR solution:

- a) PJ.07-W2-38: 'Enhanced integration of AU trajectory definition and network management processes' (<https://www.sesarju.eu/sesar-solutions/enhanced-integration-au-trajectory-definition-and-network-management-processes>)

6. Virtualization of Operations

6.1 Delegation of ATS services

The delegation of airspace in expected and planned and a more flexible use of external data services, would allow the infrastructure to be rationalised, reducing the related costs and enable data-sharing. Operationally, it will foster a more dynamic airspace management and ATM service provision, improving the resilience of ATM service provision.

This DSD aims at demonstrating the benefits of a new operating model of delegation of airspace and the related provision of air traffic services (ATS) based on new technical infrastructure characterised by virtual centre (VC) architectural models (e.g., Y architecture). The demonstration should help to overcome the challenges associated with regulatory and certification issues. Close cooperation with European Union Aviation Safety Agency and/or national regulators is therefore essential to the success of the demonstration.

The proposed demonstrators shall include the following elements:

- a) The delegation of ATS among ATSUs belonging to different cross-border FIRs intra-ANSP and inter-ANSP based on: traffic/organisation needs (either static on fixed-time transfer schedule (e.g. day/night) or dynamic (e.g. when the traffic density is below/above a certain level) or on contingency needs.
- b) ATFCM aspects as per the new DAC/DCB concept application, including the interaction with the Network Manager on dynamic sectorisation and flow allocation.

This may include the dynamic delegation of ATS provision for load balancing (ATFCM), cross-border rostering concepts, etc. The delegation of the ATFCM service provision between ATSUs should also be considered.

- c) Intra-ANSP and inter-ANSP use cases, with same or different ATM Data Service Providers (between alliances).
- d) Civil–military aspects of delegation of ATS provision (e.g. between civil ATSUs when military activities are in place or planned as well as delegation of ATS provision between civil and military ATSUs). Operational, sovereignty, data access and cybersecurity aspects should be considered.
- e) The consideration of the impact/changes on ATSEP role.

Demonstrations may include complementary concepts supporting increased flexibility in ATCO validations, standardisation of procedures and performance support tools to reduce the number of hours required to be current in a sector, etc.

The proposed demonstrators shall implement the following SESAR solution:

- a) PJ.10-W2-93: 'Delegation of ATM services provision amongst ATSUs (<https://www.sesarju.eu/sesar-solutions/delegation-atm-services-provision-among-atsus>).

The applicant shall demonstrate that the work performed through the proposed demonstration is complementary to and not duplicating the scope/approach of the ongoing DSD projects DEVICE and EXODUS.

6.2 Multiple remote tower module

A remote tower centre (RTC) equipped with a number of remote tower modules can provide services to one or more airports from each module.

This DSD aims at demonstrating the benefits in terms of cost-efficiency resulting from the flexible and dynamic allocation of remote tower modules within the RTC that can increase the number of airports and traffic volume that can be safely controlled from a RTC.

The demonstrator shall cover the cross-border dimension aspect with at least two different remote tower centers in two different EU Member States states, each providing service to two or more aerodromes.

The proposed demonstrators shall include at least one of the following elements (SESAR Solutions PJ.05-02 and PJ.05-W2-35):

- a) Provision of FIS for more than one aerodrome by a single AFISO from a remote location (i.e., not from a control tower local of any of the aerodromes), and/or the provision of simultaneous remote ATC service two or more aerodromes.
- b) Simultaneous provision of AFISO to one aerodrome and ATC service at another aerodrome by a single person (holding both an ATC and AFISO licence). The demonstration may include the dynamic alternation of the ATC/AFISO service provision between the two aerodromes based on traffic demand.
- c) Simultaneous provision of ATC service to two or more aerodromes by a single ATCO holding a valid unit endorsement for both aerodromes. In this case, the demonstration may or be restricted to runway operations at one airport only, so that if there are ongoing runway operations at one airport, the ATCO only delivers clearances for manoeuvring/apron are operations or address simultaneous runway operations at both airports.

The proposed demonstrators may also include the following elements:

- a) Implementation of harmonised procedures across all the remote tower modules in the RTC to facilitate controllers to hold endorsements for two or more airports.
- b) Demonstration of a low-cost composite ground-based surveillance infrastructure to increase the situational awareness for the multi remote tower controller or AFISO in a cost-effective way (SESAR Solution PJ.14-W2-84b).
- c) Remote tower planning tools for the remote tower centre to dynamically allocate remote tower operations at remote airports to different positions over time to reduce cost through a more efficient usage of all human/technological resources.
- d) Remote tower centre rostering concepts.

For new remote tower installations, if the regulatory certification and operational approval is obtained while conducting the demonstration, the demonstration can be conducted in shadow mode. However, the applicant must document that the regulatory certification and operational approval processes have made sufficient progress so that the planned entry into service in live operations can occur within one year of the closing of the project.

The proposed demonstrators shall implement the following SESAR solutions:

- a) PJ.05-02: 'Multiple remote tower module' (<https://www.sesarju.eu/sesar-solutions/multiple-remote-tower-module>)
- b) PJ.05-W2-35: 'Multiple remote tower and remote tower centre' (<https://www.sesarju.eu/sesar-solutions/multiple-remote-tower-and-remote-tower-centre>)

The demonstrators may also implement the following SESAR solution:

- c) PJ.14-W2-84b: 'Multi remote tower surveillance module' (<https://www.sesarju.eu/sesar-solutions/multi-remote-tower-surveillance-module>).

To demonstrate the benefits of these SESAR solutions, the demonstrators shall include at least 2 different remote tower centres in 2 different EU member states each providing service to 2 or more aerodromes.

7. Transition towards high performance of air-ground connectivity (multilink)

7.1 Multilink future communications infrastructure (FCI) and satellite communication (SatCom) class B

The future communications network infrastructure, supporting ATN/IPS multilink capability and the complete mobility between different datalink, meeting civil-military interoperability requirements for ground/ground network interfaces, safety, and security requirements is a cornerstone of the DES. The objective of this multilink environment is to migrate to IPS based datalinks and to replace existing technologies including terrestrial VDL2.

This DSD shall aim to operate a multilink communications infrastructure and to demonstrate the following elements:

- a) Enhanced air-ground datalink capabilities beyond controller–pilot datalink communications service. Airborne users are connected to the ground by different means to support ATS B1 and ATS B2 communication services in an operational environment with representative traffic scenarios, hence demonstrating a seamless and automatic switch between different technologies in the air and in ground, considering system outages based on availability, service provision aspects and

performance needs. Projects should demonstrate the switching from VDL-2 to SATCOM and vice-versa when crossing airspace managed by ANSPs with/without service contracts with SATCOM providers. The demonstration shall address the prioritisation of air traffic service (ATS) messages over any other data traffic over the same link, which is not possible via VDL2.

- b) Ensure multilink future communication infrastructure (FCI) backbone remains compliant with the on-going developments on L-band Digital Aeronautical Communications System (LDACS) under project FCDI to facilitate a seamless future integration of LDACS.
- c) Demonstrate a multilink environment including the consideration of satellite technologies including the transition from Satcom class B (aeronautical telecommunications network (ATN) open systems interconnection (OSI)) to Satcom class A (ATN internet protocol suite (IPS))³⁶.

The end-to-end multilink interoperability demonstration should collect evidence and assess results of theoretical studies, simulations results (e.g. maximum capacity of SATCOM link for ATC and ATM data in core area), laboratory tests and flight demonstrations.

The proposed demonstrators shall demonstrate the capability of SATCOM technology to respond to security threats (e.g., cyber-attacks) and evaluate the effectiveness of different mitigations (e.g., authentication techniques).

The proposed demonstrators may include test bed platforms to appropriately stress-test avionics equipment, space and ground systems and support validation of standards as well as certification of equipment. The end-to-end demonstration must include the ground component, the space component, the aircraft component and the interface with pilots and controllers. The demonstrations should be implemented in an operational multilink environment to ensure that links are properly connected and provide full confidence to ANSPs and Airspace Users that the technology and multilink concept works as envisaged.

The applicants shall ensure that their demonstrators are coordinated with EASA for the execution of the end-to-end demonstration.

The proposed demonstrators shall implement the following SESAR solutions:

- a) PJ.14-W2-77: 'Future communication infrastructure' (<https://www.sesarju.eu/sesar-solutions/fci-services>)
- b) #109: 'Air Traffic Services datalink using SatCom Class B' (<https://www.sesarju.eu/sesar-solutions/air-traffic-services-datalink-using-satcom-class-b>).

The proposed demonstrators shall consider the work performed by the on-going DSD project ESMA and the on-going project FCDI ensuring complementarity of scope / approach.

8. Service-oriented delivery model (Data driven & Cloud based)

8.1 Service-oriented delivery model (data driven and cloud based)

³⁶ Further matured after SESAR 2020 by IRIS programme.

A new ATS data provision business operating model based on the ATM Data Service Providers (ADSPs) concept has been outlined in the airspace architecture study (AAS)³⁷ and later complemented by a European Commission study³⁸.

This DSD aims at demonstrating the benefits resulting from the implementation of a new ATS data provision service delivery model for existing or new services. The scope includes the demonstration of new ATS data provision operating models based on the opportunities opened up by the new service delivery model (consolidation of flight data processing systems (FDPSs)) and/or the deployment of new services using the new model (e.g., cloud-based 'automatic speech recognition' applications, conflict detection and resolution (CD&R) applications using virtual centre architectures, provision of surveillance data processing and integration services, services for remote technical monitoring of distributed systems, etc.). This DSD is an opportunity to address the military concerns (e.g., access to information, confidentiality, and cyber-security) on the ADSP concept.

The DSD shall demonstrate the feasibility and benefits (e.g., cost efficiency) of the new core ATC service delivery model (infrastructure and service layers) for operations in all phases of flight, which should enable:

- a) Open ATM integration patterns enabling participation of third-party system providers.
- b) Enables decoupling of service and infrastructure layers as defined in the ATM Master Plan through cloud computing (including flight data processing (FDP), human machine interface (HMI) and the relation between FDP and HMI).
- c) New service agreements governing the delivery of core services (common to all ANSPs in Europe) vs additional services (specific to one ANSP).

The proposed demonstrators must be aligned with the scope of ATM data services in each of the data categories and consider standard interfaces and services (ADSP-ATSU and ADSP-ADSP) with other services or functions and the actors feeding into or consuming the ATM data services. These demonstrations should help to overcome the challenges associated with regulatory and certification issues. Close cooperation with European Union Aviation Safety Agency and/or national regulators is essential to the success of the demonstration.

The proposed demonstrators shall implement the following SESAR solutions:

- a) PJ.16-03: 'Enabling rationalisation of infrastructure using virtual centre-based technology' (<https://www.sesarju.eu/sesar-solutions/enabling-rationalisation-infrastructure-using-virtual-centre-based-technology>)
- b) PJ.10-W2-93A: 'Y-Architecture supporting delegation of ATM services provision amongst ATSU's' (<https://www.sesarju.eu/sesar-solutions/y-architecture-supporting-delegation-atm-services-provision-amongst-atsus>).

9. CNS optimisation, modernisation and resilience

9.1 GBAS

GBAS uses local augmented satellite signals to support precision approach operations for aircraft equipped with satellite navigation. Deploying GBAS for CAT II and III operations in airports and TMAs can unlock substantial environmental benefits such as reduced noise and CO₂ emissions by improving precision approach, landing and

³⁷ [SESAR Joint Undertaking | Airspace Architecture Study - Full \(sesarju.eu\)](#)

³⁸ European Commission study number MOVE/E3/SER/2018-580/SI2.813340

departure in all-weather operations conditions, thereby increasing operational efficiency and capacity.

This DSD aims at demonstrating the operational benefits defined above by integrating processing signals from European Navigation Satellite capabilities (Galileo and/or EGNOS) beyond GPS augmentation, enabling Cat III landings along with sufficient consideration of reversion scenarios to Cat II. These demonstrations shall bring valuable operational experience for future dual frequency multi-constellation (DFMC) GBAS Galileo operational implementation in terms of procedures, design, safety case, training, and ops approval.

The proposed demonstrators shall include the following elements:

- a) GBAS Ground stations Cat III processing according to GAST D standards, with use of signals from the European Satellite Systems for additional robustness and for Cat II Reversion Scenarios.
- b) An appropriate number of GBAS Cat III landings using GBAS Cat III Ground Stations processing GAST D and signals from the European Satellite Systems (EGNOS and/or Galileo) shall be demonstrated with GAST-D equipped aircraft to satisfy airborne and ground certification requirements (with reversion to Cat II) for at least one aircraft type.
- c) The demonstration of the potential benefits of GAST-C already equipped aircraft (for Cat. II operations supported by a GAST-D ground station), as reversion scenario for Cat. III.
- d) Incite the accelerated deployment of sufficient installations to constitute a critical mass for successful certification of GBAS GAST-D station also processing signals from the European Satellite Systems at selected airports.
- e) Appropriate engagement with the European Union Aviation Safety Agency (EASA) on the certification aspects shall be duly considered.

The proposed demonstrators shall include a sufficient number of installations to constitute a critical mass for successful certification in different Member States and representing city-pairs to leverage the use of equipped aircraft. The scope includes the system certification for GBAS GAST D Ground Stations processing signals from the European Satellite Systems.

This DSD requires the participation of ANSPs and Airspace Users, the equipage of sufficient number of aircraft for successful demonstration of operational feasibility with GBAS GAST-D to enable periods of runway allocation for this service and the installation of an GBAS GAST D ground station processing signals from the European Satellite Systems at the selected airports. Indicatively, this would require more than 100 flights, equipping over 20 aircraft and involving 4 to 6 airports within the European Union.

The proposed demonstrators shall implement the following SESAR solutions:

- a) #55: 'Precision approaches using GBAS CAT II/III' (<https://www.sesarju.eu/sesar-solutions/precision-approaches-using-gbas-cat-iiiii>)
- b) PJ.14-W2-79a: 'GBAS – GAST-D extended scope' (<https://www.sesarju.eu/sesar-solutions/gbas-gast-d-extended-scope>).

10.Enable Innovative Air Mobility (AIM) & Drone Operations

10.1 IFR RPAS accommodation in airspace classes A to C

Remotely piloted unmanned aerial systems (RPAS) are used under specific restrictions and segregations, for example flying predefined reserved corridors to their mission zones. SESAR has delivered solutions that allow IFR RPAS to operate in non-segregated airspace.

This DSD aims at demonstrating the feasibility of accommodating, in non-segregated airspace, IFR RPAS in airspaces A to C as general air traffic (GAT) under instrument flight rules (IFR), following established harmonized procedural improvements on flight planning and RPAS management.

The DSD shall also demonstrate the feasibility and reliability of a backup voice communication between the remote pilot and ATC (e.g., via phone or internet voice over internet protocol (VoIP)) fully integrated into the ATC communications system to avoid prolonged loss of communication (PLOC). The demonstration may include the retransmission of backup with party-line voice communications over the very high frequency (VHF) channel and may also address ground-ground backup CPDLC communications.

Flight planning aspects must be addressed.

The demonstrator shall include scenarios in low to medium complexity and/or density operating environments within the European airspace. The demonstration may include more complex/dense airspaces under certain conditions (i.e., low levels of traffic) with the necessary adaptations (e.g., complexity metrics).

The demonstrator may include military and civil IFR RPAS. The demonstration with civil aircraft will only be possible if the RPAS has received IFR certification from EASA or has planned to receive it during the project. Once certified, civil IFR RPAS will operate the same as state IFR aircraft under general air traffic. The certification of IFR RPAS vehicles for civil operations may require a detect and avoid (DAA) system. While the full IFR certification process is not in the scope of the DSD, the certification of the ACAS Xu or EUDASS system in support of the IFR certification is included in its scope.

The proposed demonstrators shall implement the following SESAR solution:

- a) PJ.13-W2-115: 'IFR RPAS accommodation in Airspace Class A to C' (<https://www.sesarju.eu/sesar-solutions/ifr-rpas-accommodation-airspace-class-c>)

10.2 Simultaneous non-interfering (SNI) operations for IAM users

Simultaneous non-interfering (SNI) operations facilitate the safe operation of innovative air mobility (IAM) users in constrained terminal or urban areas improving operational efficiency, access and equity, capacity and safety.

This DSD aims at demonstrating the operational benefits described above and the safe integration of IAM with manned aviation and air traffic control while contributing to the definition of the required standards and regulations (e.g., recommendations for associated means of compliance).

The proposed demonstrators shall include the following elements:

- a) The deployment in an operational environment of simultaneous non-interfering (SNI) operations allowing rotorcraft or innovative air mobility (IAM) users (i.e., VCA) to operate to and from airports and/or vertiports without conflicting with fixed-wing traffic or requiring runway slots.
- b) The deployment of low level IFR routes for VCA to transition between airports.

- c) The deployment of specific IFR procedures, based on GNSS and the RNP navigation specification to reach a point-in-space (PinS) to access the final approach and take-off area (FATO)/vertiport, help not only avoiding the interaction of rotorcraft/VCA with other traffic, but also optimising operations in obstacle-rich urban environments and noise sensitive areas.

The proposed demonstrators shall perform at least 50 flights, in coordination with relevant stakeholders; they could use one or more vertical take-off and landing capable aircraft (VCA) (or advanced prototypes), potentially including vehicles with fully autonomous capabilities, or could be limited to manned helicopters or non VCA drones subject to IAM (in the event VCA are not mature). Close coordination with EASA is required to ensure complementarity and consistency with EASA activities.

The proposed demonstrators shall implement the following SESAR solutions:

- a) PJ.01-06: 'Enhanced rotorcraft operations in the TMA' (<https://www.sesarju.eu/sesar-solutions/enhanced-rotorcraft-operations-tma>)
- b) PJ.02-05: 'Independent rotorcraft operations at airports' (<https://www.sesarju.eu/sesar-solutions/independent-rotorcraft-operations-airports>)

Important information for preparing DSD proposals

- a) The proposed demonstrators shall aim to bring SESAR solutions, which have already completed TRL6, to TRL8.
- b) With the aim of ensuring a common approach across all projects contributing to deliver the DES, a programme execution framework has been defined by the SESAR 3 Joint Undertaking (SESAR 3 JU) and is available on the SESAR 3 JU website (<https://sesarju.eu/sites/default/files/documents/projects/SESAR3ProjectHandbook.pdf>). The document provides guidance to project coordinators and their teams on how to conduct their project and comply with the needs defined by the SESAR 3 JU for its programme execution. This guidance is applicable to all DSD projects.
- c) The proposals for the DSDs shall describe how they intend to secure the required regulatory approvals for the execution of the demonstration activities in the relevant operational environment. For this purpose, proposals must define clear milestones (e.g., achievement of higher TRL), that allow a close follow-up of the progress of the projects. Where appropriate, proposals must include a milestone requiring the submission of requests to the competent authorities for the certification/approval of the infrastructure and the submission of the change of the functional system resulting from the implementation of the above-mentioned functionalities that are necessary for operational implementation.
- d) Applicants shall ensure and demonstrate that, where relevant, the work carried out under their projects is complementary to the 6 ATM functionalities of CP1. While the CP1 ATM functionalities can constitute enablers for the demonstrators, the later shall not overlap or duplicate those functionalities or aim to validate any part of CP1.
- e) The performance benefits shall be expressed, when applicable, in terms of existing KPIs under the SES performance scheme.

CEF-T-2024-SIMOBGEN-SESAR-CP-WORKS: SESAR Common Project One implementation projects – works

Objective: The objective is to modernise air transport infrastructure on the TEN-T

Network.

Scope: In accordance with the Article 9(2)(b)(ii) of the CEF Regulation, works related to the timely and synchronised implementation of **Common Project One** (Commission Implementing Regulation (EU) 2021/116 of 1/02/2021) in accordance with the deployment approach defined in the SESAR Deployment Programme⁽³⁹⁾ will be supported.

This Call for Proposals addresses the short-term implementation needs stemming from the SESAR Deployment Programme (SDP). These needs are defined considering: technical aspects, which make the related sub-functionalities essential to advance in the implementation of the overarching ATM functionality; the implementation status of the relevant ATM functionalities or sub-functionalities, aiming to fill any current implementation gaps; and the contribution to network performance, focussing on the SESAR Deployment Programme 'Families' that mostly contribute to network performance improvements, to digitalisation and to the objectives of the European Green Deal.

Implementation projects (Article 10 of Commission Implementing Regulation (EU) No 409/2013) related to any of the following sub-functionalities defined in the Annex of the Commission Implementing Regulation (EU) 2021/116 of 1/02/2021 will be supported under this topic:

- 1) ATM sub-functionality on AMAN/DMAN Integration (SDP Family 1.2.1). Projects should implement as a minimum: coupling AMAN and DMAN systems and integrate the sequence building processes;
- 2) ATM sub-functionality on Extended AOP (SDP Family 2.2.2). Projects should implement as a minimum: extended AOP Data/Operational elements implementation and Airport Performance Services implementation;
- 3) ATM sub-functionality on AOP/NOP Integration (SDP Family 4.4.1). Projects should implement as a minimum: Integration of Airport systems with NOP;
- 4) ATM sub-functionality on Initial A/G Trajectory Information Sharing (airborne) (SDP Family 6.1.1). Projects should implement as a minimum: avionics upgrades;
- 5) ATM sub-functionality on Initial A/G Trajectory Information Sharing (ground) (SDP Family 6.1.2). Projects should implement as a minimum: local system upgrades and data integration;
- 6) ATM sub-functionality on Initial Trajectory Information Sharing Ground Distribution (SDP Family 6.3.1). Projects should implement as a minimum: the connection to the ADS-C Common Service and its ground infrastructure deployment.

Important information for preparing common project one proposals

- a) The **SESAR Deployment Manager**⁽⁴⁰⁾ must be the coordinator of each of the projects submitted under this topic. Applicants must coordinate their applications with the SESAR Deployment Manager who will advise them on the relevance and compliance of their proposals with the SESAR Deployment Programme and the priorities of this call for proposals. The SESAR Deployment Manager will also consolidate, as appropriate, the relevant implementation projects into one or more projects to ensure their effective and optimal synchronisation in accordance with the SESAR Deployment Programme.
- b) Proposals for projects that are not planned to be completed before any of the

³⁹ The [SESAR Deployment Programme 2022 edition](#)

⁴⁰ SESAR Deployment Manager: <https://www.sesardeploymentmanager.eu/>

relevant implementation target dates defined in common project one, are not eligible for funding under this call for proposals.

If selected, it is essential that the proposed projects fully implement the above-mentioned sub-functionalities or the mentioned minimum components within the timeframe defined in the grant agreement and in compliance with the respective common project one implementation target dates.

For this purpose, proposals must define clear milestones, consistent with the SESAR Deployment Programme and the relevant implementation target dates, that allow a close follow-up of the progress of the projects. Where appropriate, proposals must include a milestone requiring the submission of requests to the competent authorities for the certification/approval of the infrastructure and the submission of the change of the functional system resulting from the implementation of the above-mentioned functionalities that are necessary for operational implementation. Failure to fully comply with the above-mentioned obligation will entail the cancellation of the project and withdrawal of the entirety of the related CEF funding awarded to the concerned project(s).

- c) For projects addressing ATM sub-functionality on Initial A/G Trajectory Information Sharing (airborne), applicants must be aware that the related costs are eligible only if the equipment is delivered and installed before 31 December 2027.
- d) The Commission encourages and supports operational stakeholders to be 'First movers' in implementing Common Projects. Consequently, the specific subjects that are addressed under this topic might not be included in future calls for proposals or may be proposed with a reduced funding rate.

CEF-T-2024-SIMOBGEN-SESAR-OP-WORKS: Other ATM Projects – works

Objective: The objective is to modernise transport infrastructure on the Core and Comprehensive Networks of the TEN-T.

Scope:

In accordance with the Article 9(2)(b)(ii) of the CEF Regulation, this priority will support projects that implement Communications, Navigation and Surveillance (CNS) ground and airborne infrastructure, routes, procedures and training that are related to the provisions of the EASA Basic Regulation (EU) 2018/1139.

1. Performance Based Navigation (PBN)

(1) Projects in this domain must implement PBN routes and procedures, in accordance with the requirements of the PBN Regulation⁴¹, whose deadline for implementation is 6 June 2030. Projects/actions aiming to implement RNP approaches that were subject to the 2020 or 2024 regulatory deadlines are not eligible.

(2) Projects must implement at least one of the following:

- a) **TMA airspace optimisation**, which shall consist in implementing SIDS and STARS using required PBN specifications as an integral part of an airspace re-design project that contributes to increasing capacity and efficiency or to reducing emissions and noise.

The proposals must describe how they will implement SIDS and STARS using PBN specifications, not only as an additional overlay of existing procedures, but as an integral part of airspace re-design. The proposals should indicate the expected

⁴¹ Commission Implementing Regulation (EU) 2018/1048.

benefits in terms of capacity, safety, cost efficiency, noise abatement, and emissions and fuel reductions.

Airspace optimisation should enable decommissioning of ground navigation infrastructure to improve cost-efficiency without compromising safety and security.

The deployment of ground navigation infrastructure and costs for decommissioning ground infrastructure are not eligible for funding.

b) Retrofitting or forward fitting aircraft with:

- i. SBAS capable avionics able to make operational use LPV procedures;
- ii. Avionics able to make operational use of RNP1/RNAV 1 SIDs and STARs.

2. Datalink infrastructure

Projects in this domain shall support the deployment of avionics upgrades to resolve identified interoperability issues in the datalink domain (e.g., avionics identified in the EASA Safety Information Bulletin). Projects may cover additional avionics updates that enable airspace users, who are already equipped with datalink avionics compliant with regulatory provisions on datalink within the EASA Basic Regulation framework⁴², to take full advantage of the operational datalink service without any restriction (as, for example, the limitations imposed by the log on list). The avionics upgrades should be included in the list of deployment recommendations/implementation projects⁴³ for operators established by the Datalink Support Group⁴⁴.

Applicants must provide evidence that the avionics upgrades are fully interoperable with currently deployed datalink systems by all communication service providers and air navigation service providers.

Projects may include the implementation of avionics or ground systems upgrades to optimise/reduce the use VDL-2 link by AOC traffic by offloading non-time critical data to off-the-shell technologies.

3. Surveillance (ADS-B)

Projects in this domain must support the synchronised evolution of airborne and ground surveillance infrastructure aiming to enhance surveillance services by deploying and using ADS-B technology to improve performance, to reduce costs, to improve spectrum usage and to reduce risk of over interrogations. In order to enable synchronised implementation, these projects must include:

- a) **Operational use of ADS-B data** within its surveillance infrastructure to achieve an optimal combination of ground surveillance infrastructure by air navigation service providers. The projects enable decommissioning existing radar infrastructure and therefore must include a plan for decommissioning the existing surveillance infrastructure, including the cross-border infrastructure, to improve

⁴² Regulation (EU) 2018/1139

⁴³ https://ext.eurocontrol.int/WikiLink/images/8/89/Datalink_Deployment_Actions_-_Recs_for_Operators.pdf

⁴⁴ The Datalink Support Group (DSG) was established jointly by the Network Manager, EASA and SDM. It actively pursues the resolution of technical issues in the European datalink system. The group promotes discussion between affected stakeholders (aircraft operators, ACSPs, ANSPs and manufacturers), analyses technical and operational issues, and proposes technical and/or operational solutions to the relevant stakeholders. The DSG has identified a list of deployment projects for operators to upgrade their avionics with patches that resolved known and verified interoperability issues, including those linked with EASA SIBs. Find DSG on:

https://ext.eurocontrol.int/WikiLink/index.php/Data_link_Support_Group

cost and spectrum efficiency.
and

- b) **Equipping aircraft with 'ADS-B out' avionics** by airspace users that are exempted from complying with the surveillance regulatory requirements within the EASA Basic Regulation framework (e.g., military and General Aviation), when this facilitates air navigation service providers in achieving an optimal combination of surveillance infrastructure (e.g. by decommissioning radars that are maintained to provide service to non-ADS-B equipped aircraft).

These projects must be proposed by consortia grouping service providers and airspace users not mandated under the scope of SPI Regulation, operating within the same local environment.

The projects must include the decommissioning plan, to be implemented within the duration of the action, of legacy infrastructure thus demonstrating the engagement of stakeholders for rationalisation. The deployment or upgrade of radars and WAM systems are not eligible for funding. The costs for decommissioning infrastructure are also not eligible for funding.

4. Surveillance security

Projects aiming to implement security improvements on the surveillance infrastructure by enabling the detection, reporting and, when possible, mitigation of security threats⁴⁵.

5. GNSS interference

Projects in this domain must implement mitigation measures, addressing GNSS interferences that represent a significant safety risk and a cybersecurity threat to civil aviation operations. Such measures must be in line with the following recommendations of the EASA SIB 2022-02R2:

- a) Establishment of contingency procedures and plans;
- b) Update of operational procedures and training activities for ATCOs and flight crew;
- c) Civil-military coordination activities;
- d) Monitoring of airspace and aircraft affected by GNSS interferences, and detection of interference sources;
- e) Implement avionics updates available from manufacturers to improve robustness and resilience;
- f) Operate and maintain avionics as recommended by manufacturers.

6. U-space U1 and U2 services

The implementation of foundational U1 and initial U2 U-space services (Commission IR 2021/664) will enable the safe operation of UAS in the designated U-space airspaces facilitated by the entrance of new stakeholders (e.g., common information service provider (CISP), U-space service provider (USSP), vertiport, drone/UAS operators, etc.). Projects should aim at accelerating the market uptake and implementation of the foundational U1 and initial U2 U-space services.

General Requirements for 'Other ATM Projects'

- a) Applicants are encouraged to team up and submit a single proposal for all CNS

⁴⁵ The SESAR solution reference is PJ.14-W2-84c "Secured Surveillance Systems (Single and Composite Systems)" (<https://www.sesarju.eu/sesar-solutions/secured-surveillance-systems-single-and-composite-systems>).

topics. Consortia are encouraged to include all relevant operational stakeholders and manufacturers under a common coordinator.

- b) Funding could be awarded for projects that implement deployment activities mandated under Union Law - single European sky legislation and EASA legal framework - whose deadline for implementation has not expired by the date on which this call is published.
- c) Costs incurred after the deadlines established in the above-mentioned legislation will not be eligible for funding.
- d) Applicants are encouraged to team up with partners from several States to address common challenges including the rationalisation of cross-border infrastructure.
- e) Decommissioning activities must be included and implemented within the duration of the action. Failure to complete the decommissioning work for PBN and ADS-B projects within the duration of the action will lead to a 10% reduction of the corresponding grant.
- f) Proposals must include a milestone requiring the submission of requests to the competent authorities for the certification/approval of the relevant CNS avionics, infrastructure, route or procedures (e.g., airworthiness approval or publication in AIP) if they are necessary for operational implementation.

3. Available budget

The estimated available call budget is **EUR 640 000 000**.

Depending on the proposals received and the results of the evaluation, we reserve the right:

- To use the flexibility provided in the 2021-2027 Work Programme to exceed the indicative call budget or;
- Not to award the entire indicative call budget.

4. Timetable and deadlines

Timetable and deadlines (indicative)	
Call opening:	24 September 2024
<u>Deadline for submission:</u>	<u>21 January 2025 – 17:00:00 CET</u> <u>(Brussels)</u>
Evaluation:	January – June 2025
Information on evaluation results:	July 2025
GA signature:	September – October 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) 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*)
- **mandatory annexes and supporting documents** (*templates available to be downloaded from the Portal Submission System, completed, assembled and re-uploaded*):
 - detailed budget table per WP/calculator
 - activity reports of last year (unless exempted from operational capacity check; *see section 7*)⁴⁶
 - list of previous projects (key projects for the last 4 years) (*template available in Part B*)⁴⁷
 - timetable/Gantt chart
 - agreement of the concerned⁴⁸ Member State (letter of support)
 - environmental compliance file⁴⁹ (for works, for studies with physical interventions and for studies without physical interventions⁵⁰).

⁴⁶ Public bodies, Member State organisations, and international organisations are exempted from the operational capacity check. Also, beneficiaries of grants under CEF 1 and CEF 2 are not required to submit this annex.

⁴⁷ Public bodies, Member State organisations, and international organisations are exempted from the operational capacity check. Also, beneficiaries of grants under CEF 1 and CEF 2 are not required to submit this annex.

⁴⁸ Letters of support are signed by the Member State benefitting from the project.

⁴⁹ The environmental compliance file (ECF) must be submitted for all applications under this call, with the exception of proposals submitted to the CEF-T-2024-SIMOBGEN-ERTMS-UNITS topic. The ECF contains (i) the cover page, (ii) the Environmental Compliance Questionnaire, consisting of Sections 1. Development Consent, 2. Compliance with the EIA Directive (2011/92/EU), 3. Compliance with the SEA Directive (2001/42/EC), 4. Compliance with the Habitats Directive (92/43/EEC) and 5. Compliance with the Water Framework Directive (2000/60/EC) and the Declaration for the monitoring of the Natura 2000 sites and the Declaration under the Water Framework Directive 2000/60/EC. The declarations accompanying the file must be submitted in addition, when applicable, and do not replace the environmental compliance file.

⁵⁰ For studies projects without physical interventions and works projects that do not affect significantly the environment, the ECF must be uploaded by ticking the box of 'project type', and including in the comments boxes for each question 'not applicable'. The works projects that do not affect significantly the environment concern applications for Single European Sky ATM Research (SESAR), Intelligent

- Other Annexes (if applicable)

For applications concerning projects subject to an EIA⁵¹, you may include a summary of the climate proofing process in the Portal Submission System under “*Other Annexes*”.


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 are limited to maximum **120 pages** (Part B). 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

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

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))
 - Third countries associated to the CEF Programme ([list of participating countries](#))

Transport Systems (ITS), VTMS, RIS, telematics application systems, solutions to improve accessibility for persons with reduced mobility, and vessels and rail rolling stock retrofitting

⁵¹ If the key steps for the EIA (i.e. an environmental impact assessment report prepared by the project promoter and consultations carried out under the EIA Directive) have been completed before 18 January 2023, it is not required to provide information on the climate proofing process of the infrastructure. It is however recommended to use such Guidance where possible.
If the key steps for the EIA have been completed after 18 January 2023, the applications are under the obligation to submit the information on the climate proofing process, taking into account the Commission Notice: [Technical guidance on the climate proofing of infrastructure in the period 2021-2027, C\(2021\)5430 of 29 July 2021](#).

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 consortium roles, such as associated partners, subcontractors, third parties giving in-kind contributions, etc (*see section 13*).

Specific cases

Exceptional funding — Entities from other countries (not listed above) are exceptionally eligible for projects of common interest in the field of transport, energy and digital and for cross-border projects in the field of renewable energy, if the granting authority considers their participation essential for the implementation of the action.

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 eligible. The rules on eligible countries do not apply to them.

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 persons⁵².

EU bodies — EU bodies (with the exception of the European Commission Joint Research Centre) can NOT be part of the consortium.

Countries currently negotiating association agreements — Beneficiaries from countries with ongoing negotiations for participating in the programme (*see list of participating countries above*) may participate in the call and can sign grants if the negotiations are concluded before grant signature and if the association covers the call (i.e. is retroactive and covers both the part of the programme and the year when the call was launched).

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)*⁵³). 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).

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.

⁵² See Article 197(2)(c) EU Financial Regulation [2018/1046](#).

⁵³ 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](#).

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

Consortium composition

n/a

Eligible activities

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

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 not allowed.

Geographic location (target countries)

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

Duration

See section 10.

Project budget

Project budgets (maximum grant amount) of any amount are admitted.

In order to ensure efficiency in EU funding interventions, applicants are strongly encouraged to submit applications for projects with a total requested EU contribution to the eligible costs of no less than EUR 1 000 000. Where possible, related projects should be grouped and submitted as one proposal.

The grant awarded may be lower than the amount requested.

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 'Quality' 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:

- description of the consortium participants
- applicants' activity reports of last year
- list of previous projects (key projects for the last 4 years; *template available in Part B*).

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 check⁵⁴.

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 participate⁵⁵:

⁵⁴ Beneficiaries of grants under CEF 1 and CEF 2 are also exempted from the operational capacity checks under this call.

⁵⁵ See Articles 136 and 141 of EU Financial Regulation [2018/1046](#).

- 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 misconduct⁵⁶ (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)
- 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 that⁵⁷:

- 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 against the operational capacity and award criteria (3 phases: individual evaluation, consensus phase and panel review) and then ranked according to their scores (*see sections 7 and 9*).


⁵⁶ 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.

⁵⁷ See Article 141 EU Financial Regulation [2018/1046](#).

For proposals with the same score a **priority order** will be determined according to the following approach:

1. Score obtained under the 'Priority and urgency' criterion
2. Score obtained under the 'Maturity' criterion
3. Score obtained under the 'Catalytic effect' criterion
4. Score obtained under the 'Impact' criterion
5. Score obtained under the 'Quality' criterion.

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.

 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.

9. Award criteria

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

1. **Priority and urgency:** evaluating correspondence of the proposal with the sectoral policy objectives and priorities, measuring its EU added-value and where applicable assessing the possible synergies with other sectors (5 points)
2. **Maturity:** assessing the maturity of the project in the project development. The criterion will measure, among others: the readiness/ability of the project to start by the proposed start date and to complete by the proposed end date, the status of the contracting procedures and of the necessary permits, and information on the financial availability needed to complement the CEF investment (5 points)
3. **Quality:** evaluating the soundness of the implementation plan proposed, both from the technical and financial point of view, the architecture and design approach, the organisational structures put in place (or foreseen) for the implementation, the risk analysis, the control procedures and quality management and the communication strategy. Moreover, when applicable, it will also assess the information related to the maintenance strategy proposed for the completed project (5 points)
4. **Impact:** assessing, when applicable, the economic, social and environmental impact, including the climate impact, and other relevant externalities. This criterion may be substantiated by a Cost Benefit Analysis (CBA) or, in the absence of such tool, other forecast of end-user take-up, in which case the

evaluation will look at the soundness, comprehensiveness, and transparency of the analysis as well as proposed means to monitor its impact. Moreover, when applicable, the criterion will assess, among others, the innovation and digitalisation, safety and interoperability and accessibility aspects of the proposal, as well as its cross-border dimension effect/contribution to the network territorial accessibility (5 points)

- 5. Catalytic effect:** evaluating the effect of the EU financial assistance on the realisation of the project, for instance by overcoming a financial gap generated by insufficient commercial viability, high upfront costs or the lack of market finance, increasing the capacity to mobilise differentiated investments sources, improving the quality of the project or accelerating the overall investment plan (5 points).

Award criteria	Minimum pass score	Maximum score
Priority and urgency	3	5
Maturity	3	5
Quality	3	5
Impact	3	5
Catalytic effect	3	5
Overall (pass) scores	15	25

Maximum points: 25 points.

Individual thresholds per criterion: 3/5, 3/5, 3/5, 3/5 and 3/5 points.

Overall threshold: 15 points.

Proposals that pass the individual thresholds AND 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 Agreements

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.

The foreseen duration of the works and mixed⁵⁸ projects should be 4-5 years maximum. For studies projects it should be 2-3 years maximum. In both cases, the end date set in the Grant Agreement will not be later than 31.12.2029.

During implementation of the projects, if duly justified, extensions may be granted through an amendment to the Grant Agreement.

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.

Beneficiaries will also be invited to check and update information regarding network allocation and output indicators.

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*.

For all topics, except ERTMS and SESAR Other ATM Projects

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 rates fixed in the Grant Agreement:

- maximum **50%** for the costs of studies (not applicable for the SESAR topics)_
- maximum **50%** for the costs of works
- maximum **70%** for the costs of works in outermost regions (not applicable for the the RIS and REMIB topics).

Grants may NOT produce a profit (i.e. surplus of revenues + EU grant over costs). 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*).

For the SESAR topic related to Other ATM Projects: CEF-T-2024-SIMOBGEN-SESAR-OP-WORKS:

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*).

⁵⁸ The total duration for mixed proposals should not be longer than 4-5 years whilst the study components within these projects should be completed within 2-3 years.

The costs will be reimbursed at the funding rates fixed in the Grant Agreement:

a) PBN projects:

- Maximum **70%** for the costs of works in outermost regions
- Maximum **50%** for the costs of works to equip aircraft
- Works to optimise TMA airspace may be funded up to **30%** of the costs. However, they may be funded up to:
 - **40%**, if the project includes the **decommissioning of the ground infrastructure**;
 - **40%**, if the project includes the **synchronisation with aircraft equipage**;
 - **50%**, if the project includes **decommissioning and synchronisation with aircraft equipage**.

b) Datalink projects:

Maximum **50%** for the costs of works to equip aircraft and **70%** for the costs in outermost regions.

c) ADS-B projects:

Maximum **50%** for the costs of works to deploy and make operational use of ADS-B and **70%** for the costs in outermost regions.

Grants may NOT produce a profit (i.e. surplus of revenues + EU grant over costs). 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*).


For ERTMS topic:

The grant will be a unit grant. This means that it will reimburse a fixed amount per unit, based on unit costs, unit contributions or financing not linked to costs.

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*).

For all topics, except ERTMS:

 Please be aware that project management costs (including related tasks, such as consortium-internal progress meetings, communication and dissemination, project reporting etc) should not exceed 10% of total costs for the project. Costs exceeding this limit will be rejected during grant preparation.

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
- C.2 Equipment
- C.3 Other goods, works and services
- D. Other cost categories
 - D.1 Financial support to third parties
 - D.2 Studies
 - D.3 Synergetic elements
 - D.4 Works in outermost regions
- E. Indirect costs


Specific cost eligibility conditions for this call:


- personnel costs:
 - average personnel costs (unit cost according to usual cost accounting practices): Yes
 - SME owner/natural person unit cost⁵⁹ : Yes
- subcontracting costs:
 - country restrictions for subcontracting costs: Yes, subcontracted work must be performed in the eligible countries or target countries
- travel and subsistence unit cost⁶⁰: No (only actual costs)
- equipment costs: full cost
- other cost categories:
 - costs for financial support to third parties: not allowed
 - studies: Yes
 - synergetic elements: Yes (only for 'works' projects, not for 'studies')
 - works in outermost regions: Yes
 - land purchases: No
- indirect cost flat-rate: 0% of the eligible direct costs (categories A-D, except volunteers costs and exempted specific cost categories, if any)
- VAT: VAT is NOT eligible
- other:
 - in-kind contributions for free are allowed, but cost-neutral, i.e. they cannot be declared as cost
 - 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 or target countries are eligible

⁵⁹ Commission [Decision](#) of 30 July 2024 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).

⁶⁰ Commission [Decision](#) of 31 July 2024 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).

- other ineligible costs: Yes, costs related to purchase of land

 Please be aware that in case of significant changes to the circumstances that have an impact on the project budget, you may be asked to request an amendment to reduce the maximum grant amount. If you do not comply with this request, we may have to terminate the grant and reduce it from our side (*see art 28 and 32*).

-  Similarly, you may be asked to request an amendment to reduce the maximum grant amount, if your project encounters major delays during the project implementation. If you do not comply with this request, we may have to terminate the grant (*see art 28 and 32*).

For ERTMS topic:

Budget categories for this call⁶¹:

- A. Contributions for on-board ERTMS
 - A.1 Retrofitting
 - A.2 Upgrade
 - A.3 Fitment
- B. Contributions for track-side ERTMS
 - B.1 Deployment
 - B.2 Upgrade

Specific cost eligibility rules for this call:

- the unit grant amount must be calculated in accordance with the methodology set out in the unit contribution authorising decision and using the calculator provided (if any)
- eligible cost country restrictions: Yes, only costs/contributions for activities carried out in eligible countries or target countries are eligible

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. The amount will be established based on the grant type or estimated project duration at the time of grant signature and will vary between 25% and 50%. The prefinancing will be paid 30 days from entry into force/financial guarantee (if required – whichever is the latest).


There may be one or more **interim payments** (with detailed cost reporting).

In addition, you will be expected 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.

⁶¹ [Decision](#) of 22 July 2021 authorising the use of unit contributions to support the deployment of ERTMS, electric vehicles recharging infrastructure and the retrofitting of noisy wagons under the Connecting Europe Facility (CEF) – Transport Sector.

 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/units 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 normally requested from the coordinator, for the consortium. They must be provided during grant preparation, 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 (*art 23*).

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 one of the following:

- limited joint and several liability with individual ceilings — *each beneficiary up to their maximum grant amount*
 - unconditional joint and several liability — *each beneficiary up to the maximum grant amount for the action*
- or
- individual financial responsibility — *each beneficiary only for their own debts*.

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)*

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

- rights of use on results: Yes

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

- communication and dissemination plan: No
- additional communication and dissemination activities: Yes
- special logos: No

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

- Member State information: Yes
- specific rules for digital infrastructure projects: No
- specific rules for ATM common projects: No
- durability: Yes
- 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 EU Login 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 3 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 (description of the action) covers the technical content of the proposal. Download the mandatory word template from the Submission System, fill it in and upload it as a PDF file
- Annexes (*see section 5*). Upload them as PDF file (single or multiple depending on the slots). Excel upload is sometimes possible, depending on the file type.

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](#)
- Topic Q&A on the Topic page (for call-specific questions in open calls; not applicable for actions by invitation)
- [Portal FAQ](#) (for general questions)
- call information on the [CINEA website](#).

Please also consult the Topic page regularly, since we will use it to publish call updates.

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: CINEA-CEF-TRANSPORT-CALLS@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 and associated partners must be registered in the [Participant Register](#). The participant identification code (PIC) (one per participant) is mandatory for the Application Form.
- **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).

- **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).
- **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).
- **No-profit rule** — Grants may NOT give a profit (i.e. surplus of revenues + EU grant over costs). This will be checked by us at the end of the project.
- **No cumulation of funding/no double funding** — It is strictly prohibited to cumulate 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 under two EU grants. If you would like to nonetheless benefit from different EU funding opportunities, projects must be designed as different actions, clearly delineated and separated for each grant (without overlaps).
- **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 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 the others (or they 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 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, they 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.

- **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](#).