Air Traffic Management modernisation

SESAR and Communications, Navigation, Surveillance ground and airborne infrastructure, routes and procedures

European Commission

sesar

Single European Sky Air Traffic Management Research project

The single European sky

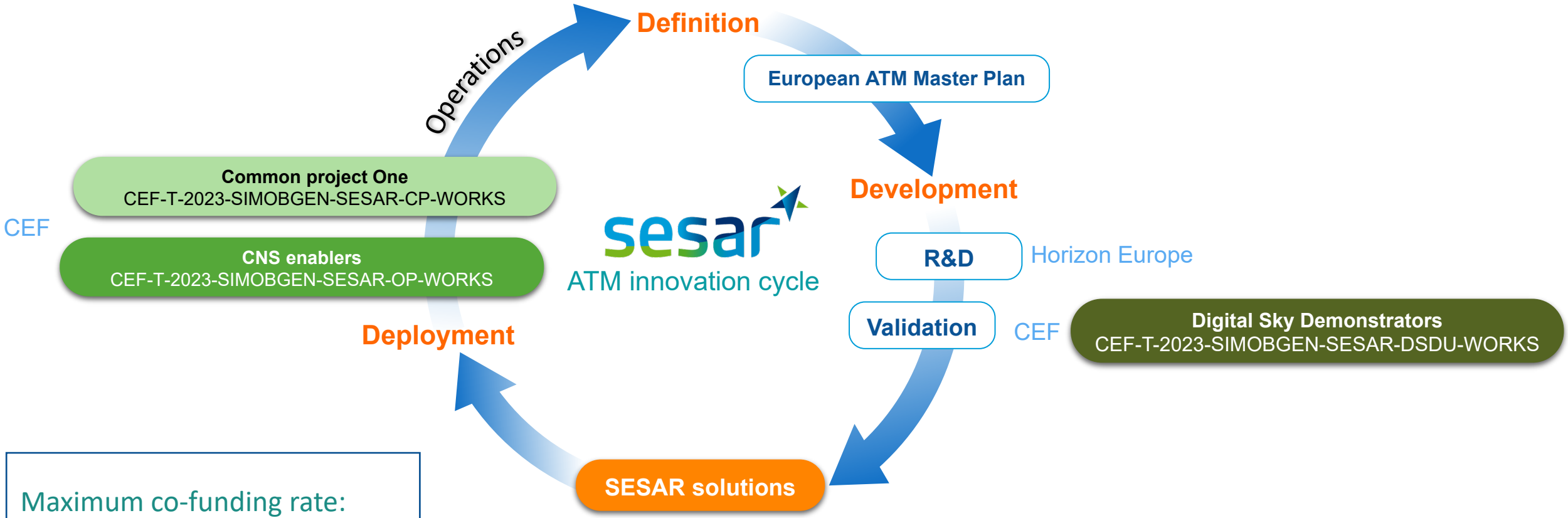
- **Economic regulation** → Performance & charging schemes
- **Airspace organisation & use** → Network management; Air trafic flow management; Flexible use of airspace
- **Technological innovation** → sesar

sesar

- Definition phase: **European ATM Master Plan**
- Development phase: SESAR 3 Joint Undertaking > **SESAR Solutions**
- Deployment phase: Voluntary; **Common Projects >** SESAR Deployment Manager ⇩ SESAR Deployment Programme ⇩ **Implementation projects**

SUSTAINABLE & SMART
MOBILITY STRATEGY
CEF-T-2023-SIMOBGEN

Single European Sky Air Traffic Management Research project



Maximum co-funding rate:

General envelope: 50%

European Commission | Mobility and Transport

sesar JOINT UNDERTAKING

SESAR Digital Sky Demonstrators

for a greener, more scalable and resilient ATM

Digital Sky Demonstrators
CEF-T-2023-SIMOBGEN-SESAR-DSDU-WORKS

What is a Digital Sky Demonstrator?

- Demonstrate the SESAR Solutions required to deliver the **Digital European Sky**:
  - Involving ground and airborne industry (when required)
  - Executed by operational ATM actors (e.g. air navigation service providers, airports, airlines, Network Manager, etc.)
  - Executed across European airspace
  - Closely connected to standardisation and regulatory activities
- Provide a platform for “early movers”
- Accelerate market uptake
- Target maturity level: TRL 8

European Commission | Mobility and Transport

sesar JOINT UNDERTAKING

SESAR Digital Sky Demonstrators
for a greener, more scalable and resilient ATM

Digital Sky Demonstrators
CEF-T-2023-SIMOBGEN-SESAR-DSDU-WORKS

Call topics

GBAS demonstrations leading to environmental benefits for airports and TMAs

- GBAS GAST-D ground stations including processing signals from European Navigation Satellite capabilities (Galileo / EGNOS V2) enabling Cat III landings along with sufficient consideration of reversion scenarios to Cat II
- A minimum number of 100+ GBAS Cat III landings
- Equipage of sufficient aircraft (minimum 20) with GBAS GAST-D
- Enhanced green approach procedures supported by GBAS
- Minimum 6 European airports in different States
- Target: Cat III GNSS capability & re-use towards future DFMC GBAS Galileo / EGNOS V3 Operation Implementations

Trajectory based operations enabling the aviation green deal

- Operational benefits of ATS-B2 beyond CP1 scope (e.g. ED-228 rev. B), focus on environmental benefits
- Operational and technical capabilities described in FF-ICE release 2, which focuses on strategic operations of the execution phase of flight
- Uplink of closed trajectory revisions instead of using a vector and resume voice instruction in en-route airspace
- ICAO descend-via procedures, in combination with the re-cruise flight management system (FMS) function and the Extended Projected Profile (EPP) downlink

sesar JOINT UNDERTAKING

SESAR Digital Sky Demonstrators
for a greener, more scalable and resilient ATM

Digital Sky Demonstrators
CEF-T-2023-SIMOBGEN-SESAR-DSDU-WORKS

Call topics

Long-haul flights SWIM-enabled in-flight trajectory optimisation

- Opportunity to design more flexible and efficient flight trajectories: strategic revision of the trajectory requested by airspace users of an airborne flight aiming at reducing the environmental impact of the flight
- Leverage available satellite networks for oceanic flights
- Opportunity to bring to TRL8 (including certification) the airborne capabilities (station-keeping avionics and/or the aircraft-to-aircraft communications) required to support the wake energy retrieval ATM concept
- New airborne capabilities to be demonstrated in one or more airliners representative of long-haul operations
- Oceanic flights require coordination with partners across the Atlantic

Greener ATM operations at European airports

- Introduction of a series of environmental indicators in the daily operation of an airport in the execution phase, triggering and influencing operational decisions
- Potential solutions to reduce the airport impact on noise and emissions at and near the airport

sesar JOINT UNDERTAKING

SESAR Digital Sky Demonstrators
for a greener, more scalable and resilient ATM

Digital Sky Demonstrators
CEF-T-2023-SIMOBGEN-SESAR-DSDU-WORKS

Call topics

Scalable and resilient network management operations

- Integration of dynamic airspace configurations and integrated network management ATC planning (INAP)
- Integration of mission trajectory in the planning phase
- Airspace Users' priorities considered during the resolution of capacity constrained situation on arrivals
- Protection hotspots and pro-active flight delay criticality indicator (FDCI)
- Anticipation of exchange of airport departure planning information (DPI) messages with the Network Manager (NM)
- Connection of regional airports with Network Manager (NM)
- Delegation of ATC services based on Virtual Centre i.e. inter-ATM Data Service Providers (ADSP) use cases
- New ADSP service delivery model e.g. automatic speech recognition

sesar JOINT UNDERTAKING

SESAR Digital Sky Demonstrators

for a greener, more scalable and resilient ATM

Digital Sky Demonstrators
CEF-T-2023-SIMOBGEN-SESAR-DSDU-WORKS

Call specificities

- Applicants are free to select certain elements within the areas described before
- Grant duration: **36 months**
- Execution framework for technical activities as in the SESAR project handbook (available via the link provided by CINEA)

SESAR 3 JU Website
https://www.sesarju.eu/

European Commission | Mobility and Transport

Other SESAR projects

Communication, Navigation & surveillance (CNS)

CNS enablers
CEF-T-2023-SIMOBGEN-SESAR-OP-WORKS

Call topics

Datalink Services (DLS Regulation)

Activities

- Upgrades in aircraft equipped with avionics compliant with the regulation to resolve identified interoperability issues.
- Avionics or ground systems upgrades to optimise/reduce the use VDL-2 link (offloading AOC traffic)

Funding

- Up to 50% for the costs of studies and works to equip aircraft.
- 70% for the costs in outermost regions.
- Deployment of new datalink technologies is not eligible for funding in this call.

Other SESAR projects

Communication, Navigation & surveillance (CNS)

CNS enablers
CEF-T-2023-SIMOBGEN-SESAR-OP-WORKS

Call topics

Performance Based Navigation (PBN regulation)

Activities

- TMA airspace optimisation, implementing SIDS and STARS to improve capacity, safety, cost efficiency or environment
- Equipment of aircraft with SBAS/EGNOS avionics
- Avionics able to make operational use of RNP1/RNAV 1 SIDs and STARs.

Funding rates

Works on TMA airspace optimization:

- up to 30%,
- up to 40%, if the project includes the decommissioning
- Up to 40%, if the project includes the synchronization with aircraft equipage;
- Up to 50%, if the project includes decommissioning and synchronization with aircraft equipage

Aircraft equipage: Up to 50%.
Up to 70% for the costs in outermost regions
Up to 50 % for studies
Deployment of ground navigation infrastructure and costs for decommissioning are not eligible for funding

Other SESAR projects

Communication, Navigation & surveillance (CNS)

CNS enablers
CEF-T-2022-SIMOBGEN-SESAR-OP-WORKS

Call topics

ADS-B (SPI Regulation)

Activities

- Operational use of ADS-B data **AND**
- Equipping aircraft that are exempted from the regulation (e.g. military or general aviation)

Funding

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

Deployment of radars and WAM, and costs for decommissioning are not eligible for funding

Common project one

Commission Implementing Regulation (EU) 2021/116

Common projects
CEF-T-2023-SIMOBGEN-SESAR-CP-WORKS

CP1 includes 6 ATM functionalities & 20 Sub-functionalities

defining 'What', 'Where', 'When' & 'Who'

- **AF1** Extended AMAN and Integrated AMA/DMAN in the high-density TMA
- **AF2** Airport Integration and Throughput
- **AF3** Flexible Airspace Management and Free Route Airspace
- **AF4** Network Collaborative Management
- **AF5** System Wide Information Management (SWIM)
- **AF6** Initial Trajectory Information Sharing

The SESAR Deployment Programme

defines 'How' to deploy

+

Supporting material

25 'Families'
local implementation activities

European Commission | Mobility and Transport

Common project one

Commission Implementing Regulation (EU) 2021/116

Common projects
CEF-T-2023-SIMOBGEN-SESAR-CP-WORKS

Call topics

		Related **SESAR Deployment Programme** families
AF1	Sub-AF AMAN/DMAN integration	Family 1.2.1 – AMAN/DMAN integration
AF2	Sub-AF airport operations plan limited to the Extended Airport Operations Plan	Family 2.2.2 – Extended AOP
AF3	◂◂ **Not eligible under this call**	
AF4	Sub-AF AOP/NOP integration	Family 4.4.1 – AOP/NOP integration
AF5	Sub-AF Meteorological Information Exchange Sub-AF Cooperative Network Information Exchange Sub-AF Flight Information Exchange (Yellow profile)	Family 5.4.1 – Meteorological Information Exchange Family 5.5.1 – Cooperative Network Information Exchange Family 5.6.1 – Flight Information Exchange
AF6	◂◂ **Not eligible under this call**	

Common project one

Commission Implementing Regulation (EU) 2021/116

Common projects
CEF-T-2023-SIMOBGEN-SESAR-CP-WORKS

Call specificities

- All implementation projects aligned with SESAR Deployment Programme 2022
- The SESAR Deployment Manager = coordinator of all implementation projects:
- Projects must fully implement the Sub-AFs and must include: Milestones based on a strict timeframe; certification/approval of new infrastructure and functional systems' changes
- Failure to deliver Milestones may entail financial /administrative penalties
- 'Last chance for funding' approach to encourage 'First Movers'
- Set up large cross-border / multi-stakeholder synchronisation projects
- Common project investments must be declared in the MS 'Performance Plans'

sesar DEPLOYMENT MANAGER
https://www.sesardeploymentmanager.eu/