

# Strategy, vision & common roadmaps

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# How does aviation create impact for Europe?



## Economic impact

**13.5 million jobs**  
**4.4% of EU GDP**



## Strategic impact

**58% market share** of new civil aircraft  
**47% of global aircraft** order book  
**70% of global airspace** managed with European ATM technology



## Sovereignty

Strengthens European **trade** and **strategic autonomy**  
**Advanced technology** driven  
**Security** of European airspace



## Social impact

Enables **mobility, education & research**  
**Connects** regions, supporting EU integration & cohesion

**The EU position will become fragile without bold investments in aviation innovation due to fierce global competition (e.g. US, China)**

# ARIS – six main takeaways

1. Aviation is vital to Europe’s economy and sovereignty
2. Europe’s aviation sector faces fierce global competition and geopolitical shifts
3. Increased investment in R&I needed to stay competitive and meet climate goals
4. Three key areas for investment (full innovation cycle from research to market uptake):
  - Aircraft: up to 19-seater, 50-250-seater, 250+-seater
  - ATM: establishing the Digital European Sky
  - Transforming enablers: industrialisation, supply chain, maintenance, digitalisation, workforce upskilling
5. Collaboration between Europe’s key public and private actors is essential (EU, Member States, regions, private sector)
6. A focused investment of EUR 66 billion needed in the next MFF – of which €22.5 billion at EU level



In EUR billion	Total investment	Estimated EU support
<b>R&amp;I (2028-34) TRL 0-6</b>	<b>18</b>	<b>6</b>
Aircraft technologies	16	5.3
ATM	2	0.7
<b>Support to market uptake including product development and industrialisation (2028-34) TRL 6+</b>	<b>48</b>	<b>16.5</b>
Aircraft technologies	45	15
ATM	3	1.5
<b>ARIS total funding</b>	<b>66</b>	<b>22.5</b>

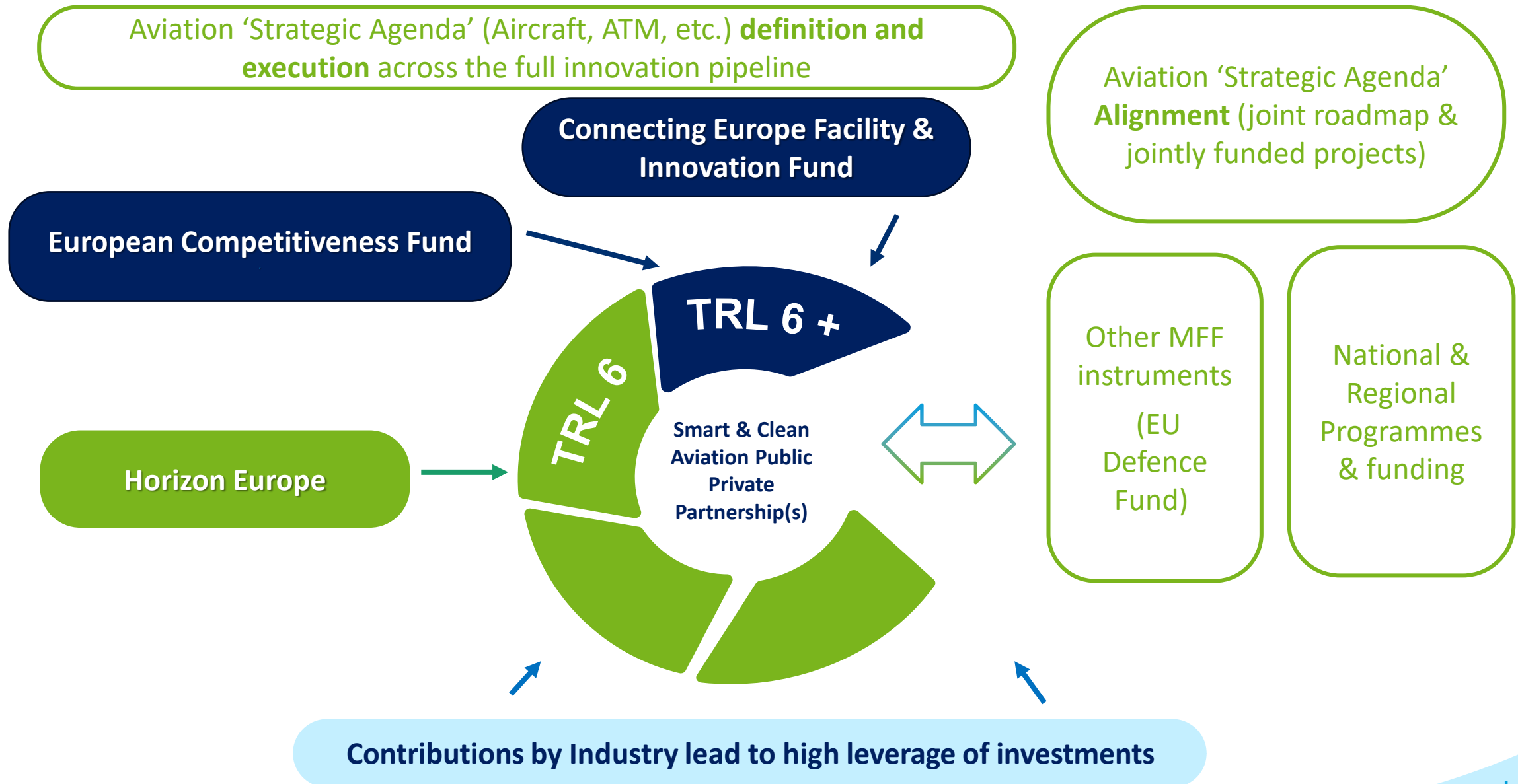
# Horizon Europe proposal for Multi-Annual Financial Framework 2028-2034

## Horizon Europe as a standalone programme with strong links to the European Competitiveness Fund

- **Aviation is one of 11 “moonshots”:**  
“Developing Smart and Clean Aviation and European leadership in the next generation CO2-free aircraft and automated air traffic management”
- “It will require a **partnership with industry**, together with a strong scientific and engineering capacity, supported by Horizon Europe, but also a **robust industrial deployment component from the Competitiveness Fund.**”

Moonshots					
<p><b>Future Circular Collider</b></p> <p><b>What:</b> Sustain Europe's leadership in particle physics by investing in CERN's next-generation collider.</p> <p><b>How:</b> Co-invest with other CERN countries, leveraging Horizon Europe funding.</p>	<p><b>Clean Aviation</b></p> <p><b>What:</b> Lead the world in developing the next generation of CO<sub>2</sub>-free aircraft.</p> <p><b>How:</b> Bring together industry and scientific capacities to achieve breakthroughs in clean aviation.</p>	<p><b>Quantum Computing</b></p> <p><b>What:</b> Make Europe the first continent with fully integrated quantum computing in daily life.</p> <p><b>How:</b> Develop applications from medicine to climate, solving previously impossible problems for 450 million citizens.</p>	<p><b>Next Generation AI</b></p> <p><b>What:</b> Model the new AI on the laws of nature and grounded in physics and biology.</p> <p><b>How:</b> AI developed by, with, and for European scientists and industry, drawing to Europe the world's best minds.</p>	<p><b>Data Sovereignty</b></p> <p><b>What:</b> Make Europe the global leader and safest hub for critical research data.</p> <p><b>How:</b> Provide access to critical data for researchers, universities and companies, offering competitive advantage in tackling global challenges.</p>	
<p><b>Automated Transport and Mobility</b></p> <p><b>What:</b> Advance safe, inclusive, and emission-reducing automated transport and mobility in Europe.</p> <p><b>How:</b> Invest in smart transport systems to improve traffic, reduce emissions, and enhance access.</p>	<p><b>Regenerative Therapies</b></p> <p><b>What:</b> Deliver breakthrough therapies to improve people's health and lives.</p> <p><b>How:</b> Harness Europe's scientific strengths to treat incurable diseases and personalise medicine.</p>	<p><b>Fusion Energy</b></p> <p><b>What:</b> The first commercial nuclear fusion power plant, generating safe, consistent, and reliable electricity.</p> <p><b>How:</b> Overcome the scientific and technological challenges necessary to put fusion on the grid in Europe by 2034.</p>	<p><b>Space Economy</b></p> <p><b>What:</b> Make Europe the leader in the space economy.</p> <p><b>How:</b> Develop the next generation launch vehicles such as reusable cargo by 2040.</p>	<p><b>Zero Water Pollution</b></p> <p><b>What:</b> Move towards zero pollution of water in the EU.</p> <p><b>How:</b> Stimulate innovation to build a true water-smart economy which secures sufficient, clean and affordable water and sanitation to all at all times.</p>	<p><b>Ocean Observation</b></p> <p><b>What:</b> Achieving strategic autonomy in ocean observation infrastructure, data and information services.</p> <p><b>How:</b> Developing, connecting, governing and securing the next generation of European ocean observing technologies.</p>

# How to operationalise innovation to deployment under the next MFF



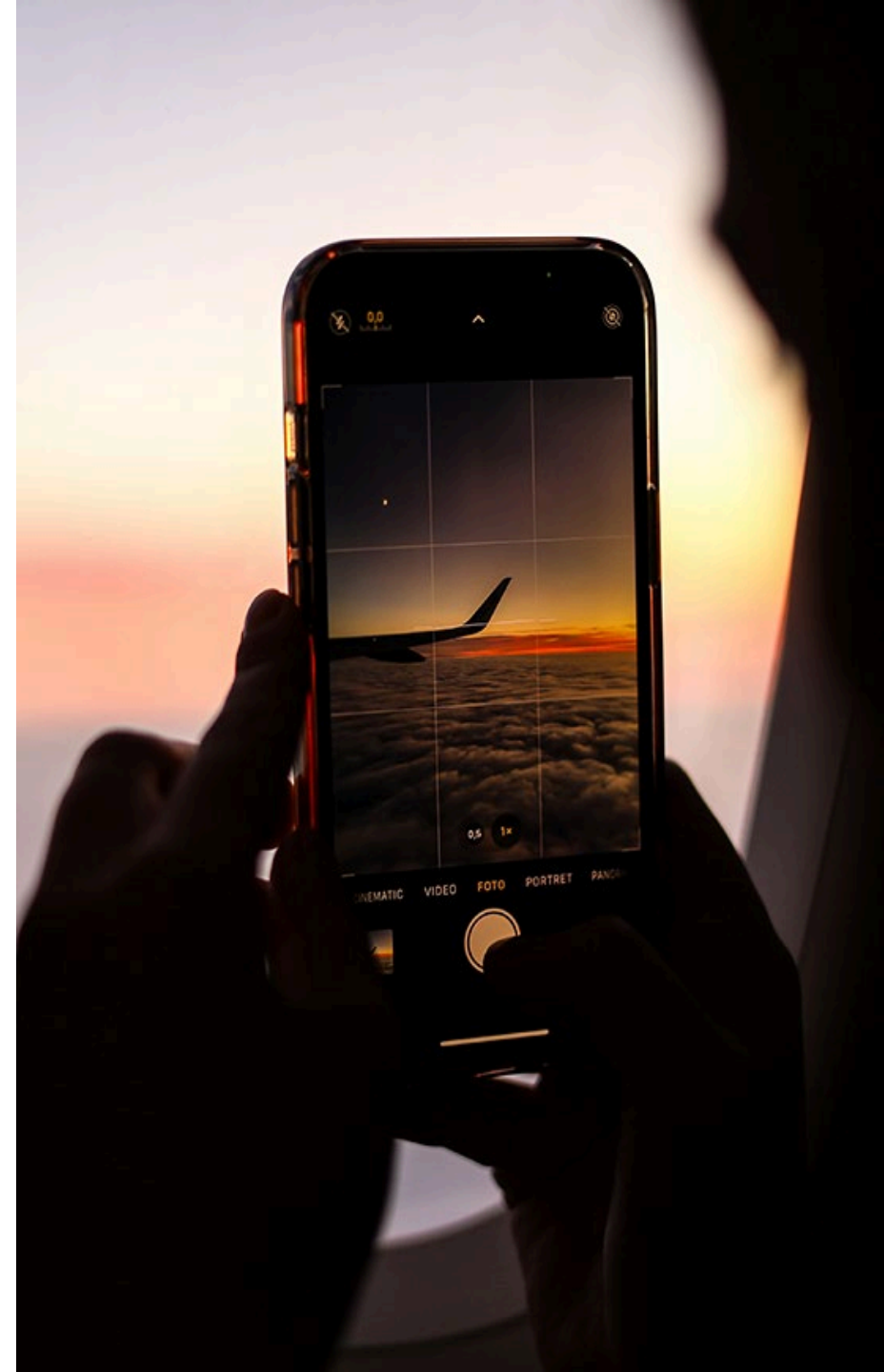
# SESAR continuation under next Multi-annual Financial Framework 2028 - 2034

## Positive elements:

- ATM is part of the “clean and smart aviation” moonshot
- ATM stakeholders are committed to continue with SESAR

## Issues for clarification:

- How will the link between research and deployment work in practice?
- What will be the budget allocated to ATM innovation?
- Will there be a stand-alone vehicle for ATM or will ATM be integrated with other aviation/transport topics into a bigger entity?
- Will everything be ready for 01/01/2028?



# What does SESAR JU do?

Accelerate through **research & innovation** the delivery of an **inclusive, resilient & sustainable Digital European Sky**.

## Define

Strategic planning  
& monitoring



**EUROPEAN ATM  
MASTER PLAN**

## Develop

Manage research projects



**DELIVER SESAR  
SOLUTIONS**

## Deploy

Facilitate an accelerated  
market uptake of SESAR  
solutions



**DEMONSTRATE  
COORDINATE  
SUPPORT**

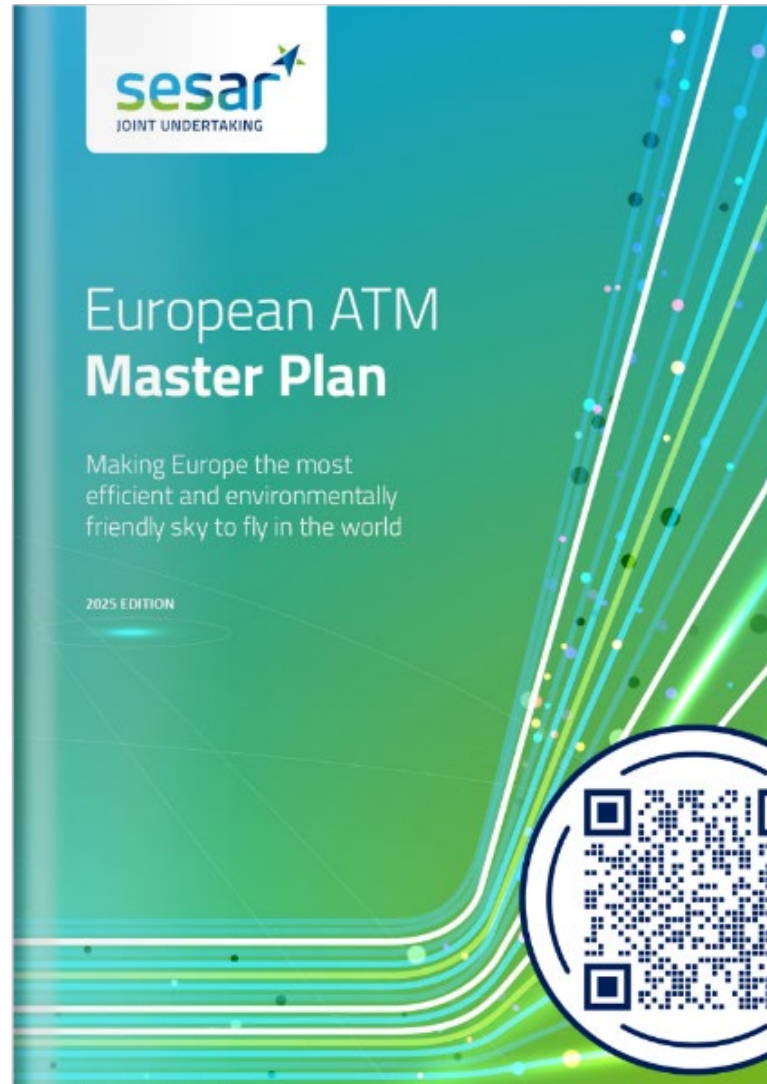
# What is the SESAR Joint Undertaking?

## 55 members in a public private partnership


# What does the SESAR JU deliver?

## The Digital European Sky as the most efficient and environmentally friendly sky to fly in the world by 2045

- Focus on **efficiency** and **environment**
- **Content:** Vision, roll-out, deployment priorities, development priorities, benefits and investment needs
- **Agreed roadmap** prepared in consultation with all European stakeholders



All flights will operate to maximise aircraft capabilities, **reducing aviation's overall climate impact** (CO2 and non-CO2).



Air traffic management processes and services will **continuously optimise each flight trajectory**.



New **service delivery model** and **high connectivity** in a secure manner will ensure **optimised and efficient dual** (civil and military) **use of resources**.



For certain phases of flight, **the system will be fully automated**.



**The role of the human will significantly evolve**, performing the tasks that are too complex for automation to handle. **Voice communication** is no longer the primary way of communicating.

# SESAR Development Priorities

DP	Strategic development priorities	
IR-1	Transformation to trajectory-based operations	Industrial research
IR-2	Transition towards high performance of air-ground connectivity (multilink)	
IR-3	Future en-route and TMA ground platforms	
IR-4	Future airport platform	
IR-5	Autonomy and digital assistants for the flight deck	
IR-6	U3 U-space advanced services, IAM and vertiports	
AR-1	Research to help shape the future regulatory framework for a Digital European Sky	Exploratory research
AR-2	Definition of U4 U-space full services	
AR-3	Integration of the next generation aircraft for zero-/low-emission aviation	
FR-1	ATM impact on climate change	
FR-2	Digital flight rules	
FR-3	Investigate quantum sensing and computing applied to ATM	

# Strategic Deployment Objectives (SDOs) until 2035



SDO  
1  
ALERTS FOR REDUCTION  
OF COLLISION RISKS ON  
TAXIWAYS & RUNWAYS



SDO  
2  
OPTIMISING AIRPORT AND  
TMA ENVIRONMENTAL  
FOOTPRINT



SDO  
3  
DYNAMIC AIRSPACE  
CONFIGURATION



SDO  
4  
INCREASED  
AUTOMATION SUPPORT



SDO  
5  
TRANSFORMATION TO  
TRAJECTORY-BASED  
OPERATIONS (TBO)



SDO  
6  
VIRTUALISATION  
OF OPERATIONS



SDO  
7  
TRANSITION TOWARDS  
PERFORMANCE OF  
AIR-GROUND  
CONNECTIVITY  
(MULTILINK)



SDO  
8  
SERVICE-ORIENTED  
DELIVERY MODEL  
(DATA-DRIVEN AND  
CLOUD-BASED)



SDO  
9  
CNS OPTIMISATION,  
MODERNISATION  
AND RESILIENCE



SDO  
10  
ENABLE INNOVATIVE  
AIR MOBILITY (IAM) AND  
DRONE OPERATIONS



# Digital European Sky programme

Connected and automated ATM 

Air-ground integration and autonomy 

Multimodality and passenger experience 

Capacity-on-demand and dynamic airspace 

Aviation Green Deal 

U-space and urban air mobility 

Artificial intelligence for aviation 

Virtualisation and cyber-secure data sharing 

Civil/military interoperability and coordination 

Smart ✓

Sustainable ✓

Resilient ✓

120 projects ongoing

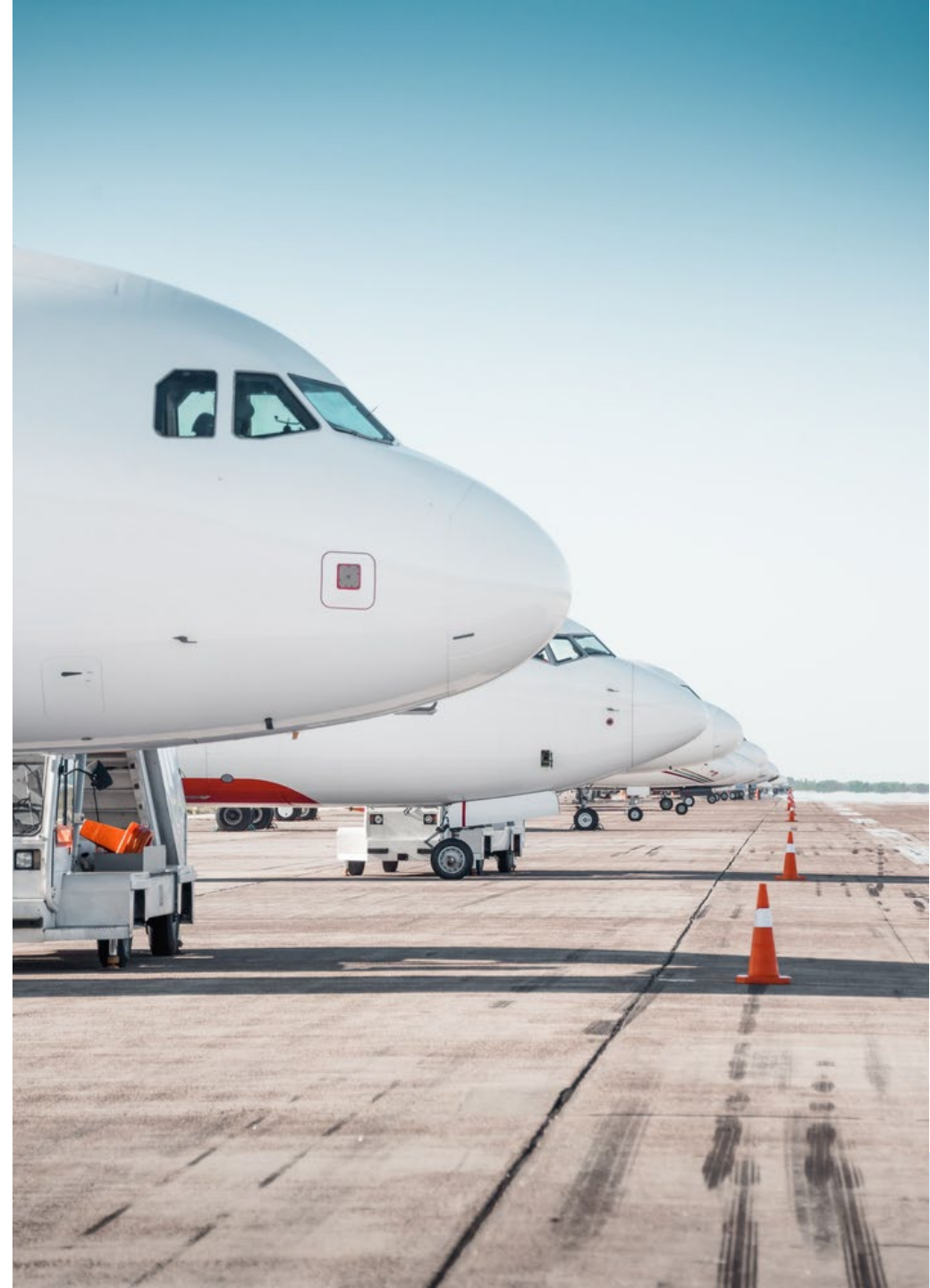
139 delivered solutions

# What's next?

The SESAR JU is now working with all ATM stakeholders on a **draft Common Project 2**, as foreseen by the European ATM Master Plan, to be handed over to the Commission in 2026 for the regulatory process during 2027 (formal approval by Member States etc.).

Starting point are the **10 Strategic Deployment Objectives** (New Service Delivery Model, Trajectory-Based Operations, Air/Ground connectivity).

The **Common Project 2** will implement technologies across the European network up to 2035.



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**Thank you!**

