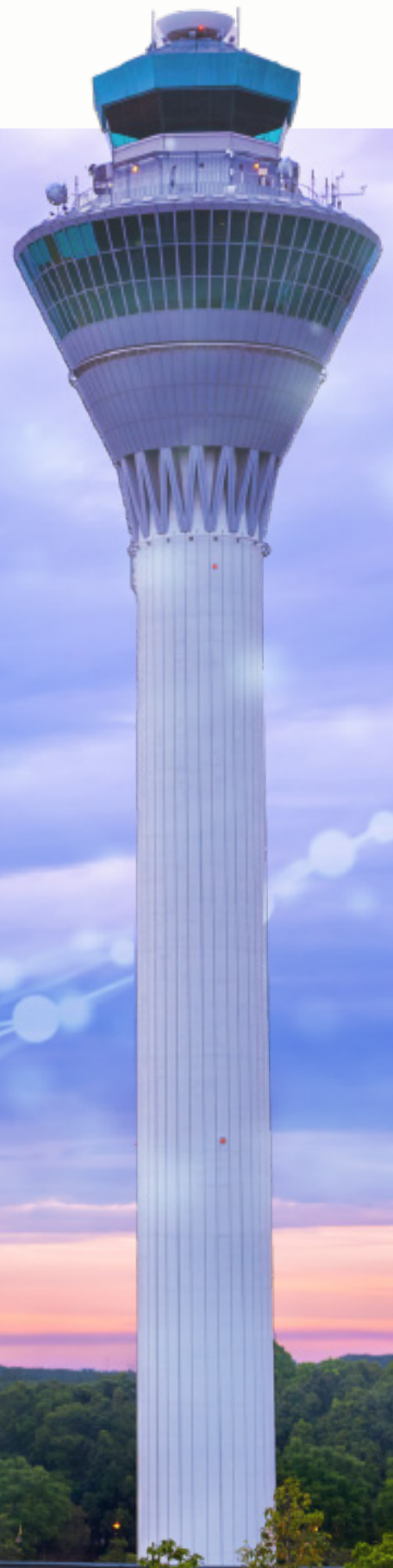


SESAR – Investing in the Digital European Sky



SESAR – Investing in the Digital European Sky

The Single European Sky Air Traffic Management (ATM) Research programme (SESAR) is the technological pillar of the **Single European Sky initiative**, whose aim is to improve ATM performance by modernising the European ATM network through the definition, development, validation and synchronised deployment of innovative technological and operational ATM solutions.

SESAR is of strategic importance to implement the **EU's digital and climate objectives** and it contributes to a better passenger experience through improved safety measures, increased capacity, improved cost efficiency, reduced delays, improved airline operations management and significant environmental benefits.



SESAR as an enabler

According to the official European civil aviation forecaster STATFOR, flight growth is expected to average 2% per year, and there will be **over 12 million flights in 2030**. To accommodate this growth, Air Navigation Service Providers (ANSPs) and their partners from the manufacturing industry will require **improved technologies, a high level of digitalisation and investment in skilled personnel** to help communicate, coordinate, and share information among themselves and with airspace users, all while maintaining high levels of safety.

Reducing the environmental impact of aviation is one of the most pressing issues facing our industry. ANSPs and the other aviation stakeholders already take responsibility by playing their part to meet the EU climate objectives in the short and medium term.

ANSPs and their partners from the manufacturing industry see SESAR as a unique programme that brings all relevant industry players together to support this transition towards a commonly shared vision, where each stakeholder has a clear role to play to fulfil the expectations of the modernisation of ATM. The SESAR project is at the heart of EU policy priorities, such as **the Green Deal, the digital transformation, and the security dimension**.



Integration, cooperation, and collective responsibility mindset

Before SESAR, research and development as well as implementation activities were fragmented and focused on local problems. SESAR led to a European-wide cross ATM sector approach. Even small entities and new entrants, such as **drones and urban air mobility services**, are now playing a role in a way that was unthinkable before.

The success of SESAR and its deployment is a **collective responsibility** of all the operational stakeholders, industry, institutions, and research entities involved. As the final responsibility for the investment is with the operational stakeholders, they have a key role in the governance, which is important for their commitment.

This collaboration enables the sharing of knowledge, resources and working together across multiple aviation sectors, where projects cannot be delivered alone. ANSPs take a leading role in this **successful collaborative approach** together with manufacturers, airports, civil and military airspace users (including new entrants), scientific institution experts (researchers and students) and other vital players of the aviation value-chain.

Examples include the integration of new airspace users (drones, manned and unmanned vertical take-off, and landing aircraft (VTOLs), innovative air mobility), higher airspace operations and civil military coordination. Furthermore, the economic benefit of these projects is passed on throughout this value chain.



Path towards more sustainable aviation (environment)

Modernisation of ATM and Communication, Navigation and Surveillance (CNS) systems, along with the optimisation of airspace design and increasing data exchange at network level leads to improved efficiency in air traffic operations. Together with SESAR, ANSPs and the manufacturing industry are focusing on optimising flight operations and routes, reducing flight delays, and enhancing airspace utilisation.

These measures translate into optimised flight paths and less time spent in holding patterns, which, in turn, reduce fuel consumption and emissions. According to the 2021 Destination 2050 Roadmap, **SESAR deployment can achieve a 7.1% reduction in CO₂ emissions per flight**, contributing significantly to the EU's climate goals.

To further enhance the ANSPs' contribution to environment, CANSO has also launched its own initiative under the label of the **GreenATM accreditation programme**, which provides a clear path for ANSPs to improve their environmental footprint and to decarbonise operations.

SESAR's societal benefits

SESAR is an important platform to address Europe's values like **Diversity, Equity, Inclusion**, and free movement. Ethics and equity aspects are in the SESAR DNA and each R&D project. Besides that, some SESAR enablers, e.g. virtual centres, and cross border Air Traffic Service delegation, allow "virtual" staff mobility via transfer of areas of responsibility from one entity to another, thereby technically enabling Air Traffic Controllers to operate beyond their own country boundaries.

On top of this, SESAR expands the experience of an aviation career for people with different backgrounds (operational, technical, administrative, scientific), which contributes to making the sector more attractive to the young generation and mitigates staff shortage challenges that the sector faces.





Roles of ANSPs and their partners from the manufacturing industry in SESAR

ANSPs and their partners from the manufacturing industry are creating a global airspace that is safe at all times, open to all users, dynamic and interoperable, leveraging revolutionised design, technology, solutions and services to power sustainable global mobility and prosperity.

ANSPs and their partners from the manufacturing industry are lead contributors in the development of many SESAR innovations and are key actors in implementation of mature SESAR solutions. This is due to the expertise of ANSPs and their commitment to making significant investments to meet the European Commission's ambitions to deliver a **digital European sky** and **the EU's Green Deal**.

For the medium- and long-term, they are expected to invest to meet the direct needs of airspace users related to quality of services and safety of

operations. ATM products and technologies are highly specialised due to their technical complexity, regulatory demands, and the critical role they play in ensuring aviation safety and efficiency.

Therefore, it is important to understand that the investment projects in this area can take many years from the initial outlay to realising the benefits. **SESAR enables a faster and more synchronised implementation of these projects in Europe.** This synchronisation allows for harmonised modernisation by aligning deployment dates, but more importantly allows all the stakeholders to prepare and roll-out technology to reach the full operational capability, as set in the **ATM Master Plan**, which is the roadmap to achieve the SESAR objectives.

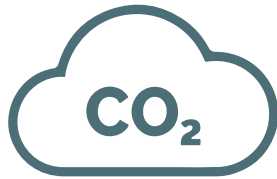
Current achievements according to SESAR



Europe's
ambassador

SESAR serves as Europe's global ambassador, leading the way in EU aviation and exporting solutions implemented worldwide.

10 million tonnes of CO₂ savings



A series of SESAR projects known as Common Project 1 are **projected to result in over 10 million tonnes of CO₂ savings**, surpassing the yearly CO₂ emissions of 1.5 million EU citizens

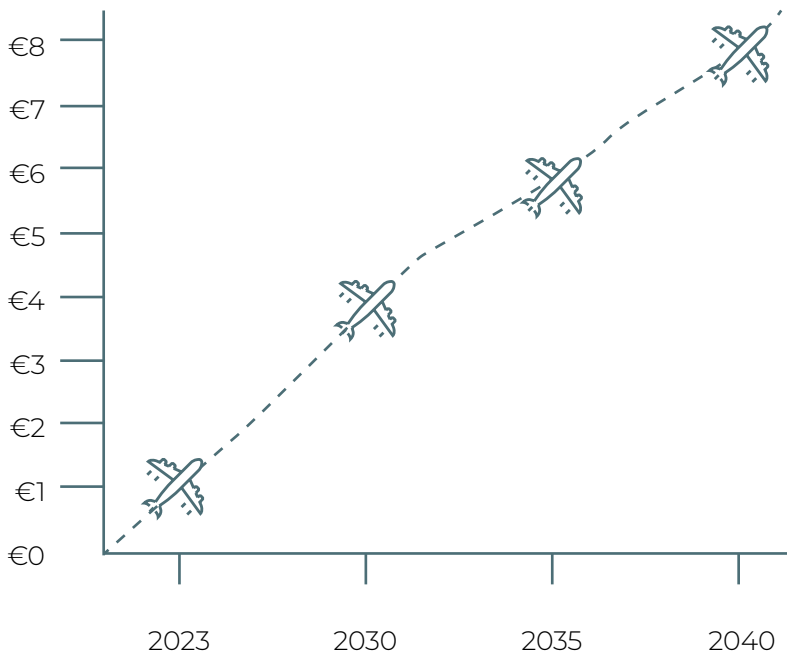
The SESAR Deployment Manager estimates that every

€1 invested in ATM

modernisation saves 4.3kg of CO₂



Coordinated investments have an impressive, demonstrated benefit-cost ratio (BCR)



Coordinated investments have an impressive, demonstrated benefit cost-ratio (BCR): every **€1 invested in CP1 already resulted into €1.5 of monetised performance benefits in 2023**, way before the completion of the implementation. When expanding the view to the next years, the BCR is even more impressive: every **€1 invested in CP1 will translate into €3.7 in 2030, €5.8 in 2035 and almost €8 in 2040.**

Out of 348 projects that received EU funding, **293 SESAR projects are now deployed** and are delivering benefits to passengers and society at large, including:

158 million minutes of saved passenger time through reduced delays and shorter flight times



2.3 million tonnes of fuel saved



the equivalent of **7.2 million tonnes of CO₂**

Conclusion

SESAR is about **ATM modernisation**, with the final aim being to enable the most efficient and sustainable operation. It is a tool to improve the overall ATM system and infrastructure throughout the European Union and even beyond. ANSPs and their partners from the manufacturing industry are playing the key role in this task, being responsible for the planning, deployment, maintenance and operation of a critical infrastructure.

Industrial participation in SESAR is essential to ensure that technological innovations are realistic, feasible and in line with the needs of the aviation sector. The aviation industry participates in the research and development of new solutions to improve the efficiency and reduce the environmental impact of air traffic, including the development of new operational and traffic management models. It is involved in the testing and validation processes of new technologies and operational procedures.

Continuation of EU funding and political support of SESAR is key. It fosters collaboration in the research and supports collectively agreed synchronised implementation by all partners within the European Union. EU funding accelerates deployment of SESAR technologies, thus contributing to digitalisation and reduced climate impact of aviation for the benefit of the society at large. The involvement of the operational stakeholders is key for their commitment to invest.



About CANSO

CANSO – the Civil Air Navigation Services Organisation – is the global voice of airspace and is shaping our future skies. Its members support over 90% of the world's air traffic and include air navigation service providers, airspace users and operators, manufacturers, and aviation industry suppliers. CANSO raises the bar on global ATM performance by connecting the industry to share knowledge, expertise and innovation.

www.canso.org

About ASD

ASD is the voice of European aerospace, security, and defence industries. ASD members account for 98% of the sector's turnover and 92% of its employment in Europe, making it the leading umbrella organisation for the sector in Europe.

Our 4000 member companies manufacture products that enable global mobility and supply equipment for those who protect us against threats. We are committed to building a safe and sustainable Europe.

www.asd-europe.org

