

General Information	
Preliminary title of the European Partnerships	European Partnership for Integrated Air Traffic Management
Short description of the partnership	The Partnership will coordinate all air traffic management (ATM) related research, development and demonstration activities in the Union, contributing to a safe, efficient and sustainable management of airspace in Europe.
Services directly involved	Lead service: DG MOVE (E3) Other service: DG RTD
Context and problem definition	<p>Over the past decade, the ATM infrastructure and performance has improved thanks to the Single European Sky policy and, in particular, to the achievements of the SESAR project (The Union's ATM modernisation project), such as increased safety levels (no fatalities caused by ATM failures in Europe in the last 2 years) and reduced fuel consumption per flight (by 2%).</p> <p>However, the effective and harmonised technological modernisation of the ATM network has not yet occurred. In particular, air navigation services are still too fragmented and insufficiently flexible in managing the airspace. This makes it difficult to adapt the capacity of systems to air traffic demand and to respond to an ever-growing concern on the increased impact of aviation on the environment.</p> <p>Annual air traffic is forecasted to grow steadily (by up to 50% to 2035) and will have to integrate new types of complex and highly automated operations (drones, urban air mobility, and sub-orbital flight). Moreover, new consumer habits, emerging new players on the market and digitalisation have a major impact on the future of aviation. These elements will bring new opportunities for the European economy and society, but they also present significant challenges that need to be overcome. Cyber threats, handling of "big data" and addressing the changing role of humans will challenge the limits of the capacity of the current ATM systems.</p> <p>Furthermore, new digital technologies cannot be simply plugged into the legacy infrastructure. They require a smooth transition from the current safety critical infrastructure to a modernised and interoperable "connected" infrastructure.</p>
Objectives and expected impacts	<p>The objective of the partnership is to modernise air traffic management services in Europe by delivering technical and operational solutions to address the future challenges of a more digitalised and sustainable aviation characterised by higher levels of autonomy.</p> <p>The more specific objectives for the proposed partnership are the following:</p> <ul style="list-style-type: none"> • Explore, develop and validate interoperable systems that, once deployed, through greater automation, virtualisation and effective and secure data sharing, can efficiently and safely <u>accommodate capacity needs</u> anywhere throughout the network, <u>mitigating the environmental footprint</u> of air transport; • Plan and report on the execution of the European ATM Master Plan to ensure a smooth transition from the current ATM system to the new connected and virtual approach taking into account the impact on the role of humans; • (New key objective): Coordinate the industrialisation processes with large-scale demonstration activities and ensure delivery of technical solutions able to advance smoothly through standardisation and certification to shorten the overall innovation life cycle. <p>The initiative is expected to have the following impacts:</p> <ul style="list-style-type: none"> • Enable a fully energy efficient and environmentally responsible aviation infrastructure that helps reduce noise and emissions from aviation (elimination of any environmental inefficiencies due to ATM by 2040, including 5-10% CO2 emissions per flight by 2035); • Increase ATM capacity to cope with growth in demand for airspace and on airports (delivery of fully scalable ATM system for manned and unmanned aviation by 2040, including +50% capacity for manned flights

	<p>by 2035);</p> <ul style="list-style-type: none"> • Shift the ATM system from physical infrastructure to digital services (to be fully implemented by 2040, with delivery milestones every 5 years before that); • Increase aviation safety levels (with the objective to have zero accident related to ATM); • Safe integration of all flying vehicles into the EU ATM systems (drones to be fully integrated by 2030); • Boost European industry globally (through a number of bilateral agreements and presence in global standards setting bodies such as ICAO); • Improve customer experience and business opportunities (through the reduction of travelling time and higher levels of predictability). <p>As far as the Horizon Europe objectives are concerned, the partnership will have a significant positive contribution to:</p> <ul style="list-style-type: none"> • Supporting the implementation of Union policy priorities including in particular the sustainable development goals and the Paris Agreement; • Accelerating industrial transformation, including through improved skills for innovation; • Strengthening international cooperation; • Encouraging exploitation of R&I results and actively disseminating and exploiting results, in particular for leveraging private investments and policy development; • Stimulating R&I activities in SMEs and the creation and scale-up of innovative companies, in particular start-ups, SMEs, and in exceptional cases small mid-caps; • Connecting and developing to research infrastructures across the European Research Area and providing transnational access; • Strengthening excellent basic and frontier research; reinforcing and spreading excellence, including by fostering wider participation throughout the Union;
Necessity test: rationale for a European Partnership	<p>A European Partnership provides a long-term, stable strategic framework for innovation under EU oversight and policy to achieve the synchronized modernisation of ATM in Europe.</p> <p>In fact, SESAR delivers its results through a comprehensive innovation cycle through which new ATM concepts are defined under the European ATM Master Plan. The research, development and validation phase currently coordinated by the SESAR JU is the heart of the innovation cycle and has demonstrated that European challenges are better addressed in a coordinated way. Therefore, the new European partnership for Integrated ATM will play this key role in the innovation cycle. Without this partnership, the entire cycle would be compromised.</p> <p>The innovation cycle proves that the challenges mentioned above are better addressed if stakeholders define, together, a common vision, appropriate coordination mechanisms and a roadmap to achieve it. For this reason, the new partnership will involve a wide range of civil and military stakeholders including non-traditional aviation actors, as well as EASA and intergovernmental organisations such as Eurocontrol.</p> <p>Without such a coordinated approach, the modernisation of the Union's ATM network is very unlikely to occur or could be severely delayed or become subject to disruption. This would have a significant negative impact for the European aviation industry and global repercussions, as ATM modernisation is a global issue and there are many other ATM modernisation programmes that aim to influence global standards. It is important that the European industry maintains the leading position it has achieved. In this context, it is important to understand that global standards are set through powerful institutional setups such as ICAO or the Federal Aviation Administration in the US and the Union needs a strong,</p>

	<p>institutional representation to maintain its leading role.</p> <p>The scale and the scope of the efforts needed to modernise the Union's ATM systems goes beyond the capacity of individual Member States or stakeholders in terms of financial commitment, technical capacity and ability to coordinate such large-scale innovation projects.</p> <p>Finally, the link with the Single European Sky policy objectives would be less effective if implemented through scattered individual Horizon Europe actions/calls.</p>
Relevant for the following parts of Horizon Europe	<p>Pillar II 'Global Challenges and European Industrial Competitiveness'</p> <p><input type="checkbox"/> Cluster Health</p> <p><input type="checkbox"/> Cluster Culture, creativity and inclusive society</p> <p><input type="checkbox"/> Cluster Civil Security for Society</p> <p><input checked="" type="checkbox"/> Cluster Digital, Industry and Space</p> <p><input checked="" type="checkbox"/> Cluster Climate, Energy and Mobility</p> <p><input type="checkbox"/> Cluster Food, Bioeconomy Natural Resources, Agriculture and Environment</p> <p><input type="checkbox"/> Cross-cluster</p> <p><input type="checkbox"/> Pillar III 'Innovative Europe'</p>
Currently identified links with other partnership candidates / Union programmes	<p>The European Partnership on Integrated ATM will build on the current cooperation experience between the SESAR JU and other transport partnerships such as Clean Sky and Shift2Rail.</p> <p>On the R&I, synergies between projects and cross-sector cooperation is expected with the following other candidate partnerships:</p> <ul style="list-style-type: none"> - Clean Aviation - Transforming Europe's rail system <p>Moreover, in the context of the innovation cycle, close cooperation between the future ATM R&I partnership funded through Horizon Europe and the future ATM deployment partnership funded through the Connected Europe Facility Programme is expected.</p>
Does the proposed partnership build on currently active ones?	<p>The proposed partnership will build on the current SESAR Joint Undertaking, which was set up in 2007 under FP7 and renewed in 2014 under Horizon 2020. The current SESAR JU's planned lifetime extends to the 31.12.2024, with last calls for proposals being launched in 2020</p>
Expected type and composition of partners	<p>Experience of the last twelve years has shown that in order to achieve any meaningful progress in a slowly changing environment such as ATM, it is essential to bring together all key civil and military aviation actors (air and ground manufacturing industry, air navigation service providers, airports, airspace users, academia, professional staff and non-traditional aviation stakeholders), the Commission and Eurocontrol to coordinate the related research, development and validation activities in the EU.</p> <p>Members and Eurocontrol would perform R&I activities in line with the Union's ATM Master Plan. Lower TRL fundamental research activities will be implemented through open calls to the entire ATM community.</p> <p>The digital transformation of the EU ATM will also need the support of new categories of stakeholders, such as communication and data service providers, drones manufacturers and systems providers, etc. These new actors (either start-ups or large global corporations) have already expressed their interest to take part in the future European partnership on ATM.</p>
Contributions and commitments expected from partners	<p>Financial contributions from all partners are expected to cover the administrative costs of the partnership.</p> <p>The input expected from the private partners as well as Eurocontrol is mainly in-kind (staff working on research projects, assets supporting the projects), but also financial investments needed to certify and industrialise products that are being brought on the market.</p> <p>Co-funding rate could be lower than for the rest of the programme (e.g. 50%), as a</p>

	lower co-funding will facilitate a broader scope of activities to be performed in the context of limited financial resources available.
Currently envisaged implementation mode(s).	<input type="checkbox"/> Co-programmed European Partnership <input type="checkbox"/> Co-funded European Partnership <input checked="" type="checkbox"/> Institutionalised European Partnership <ul style="list-style-type: none"> <input type="checkbox"/> Article 185 <input checked="" type="checkbox"/> Article 187 <input type="checkbox"/> EIT-KIC
Justification of the implementation mode	<p>The current SESAR JU has demonstrated the added value of an institutional partnership by bringing together all the relevant stakeholders in a truly EU coordinated project working in full alignment with the Unions policy goals. Being responsible for the development and implementation of the Union's ATM Master Plan, the JU was uniquely positioned to consider the upcoming challenges and develop a coherent plan for R&D and deployment and thus facilitate the best answer the Union can give to address them.</p> <p>The Commission has relied heavily on this support, in particular from a technical perspective and willing to propose continuing this form of cooperation with the industry and other institutional actors.</p> <p>The establishment of the partnership as Union body, under Article 187 ensures the participation of all key relevant public and private actors in a setup that has a clear and tested governance model, clear procedures, roles and obligations for all actors. A stable governance ensures the long-term commitment of all stakeholders involved, considering the longer innovation life-cycles related to the complexity of infrastructure and services modernisation.</p> <p>An institutionalised partnership ensures the alignment of the innovation activities with the Union's policy objectives. It ensures that higher TRL</p> <p>In comparison to other forms of (contractual) partnerships, an institutional partnership is the most efficient instrument to:</p> <ul style="list-style-type: none"> - overcome fragmentation and the lack of continuity of research in the ATM sector, rationalising research programmes, optimising the use of expertise and resources and ensuring interoperability of the systems developed; - support the Commission in setting future policies, evolving the regulatory framework and monitoring deployment of innovation; - secure the proper involvement of regulatory authorities in assessing the safety of innovative solutions; - Build a strong link between large-scale demonstration and validation activities and the subsequent industrialisation processes to accelerate standardisation and certification and thus the overall innovation life cycle; - Concentrate Union funding towards critically needed solutions (in particular those optimising the network performance or safety) whose development often has a negative business case and would not be pursued without a coordinated approach; - create economies of scale by pooling resources and aligning efforts including from EASA, National Aviation Authorities and from intergovernmental organisations such as Eurocontrol. <p>An independent Union body will also optimise the allocation of Union funds and effectively handles conflicts of interest linked to the execution of the European ATM Master Plan. Furthermore, a Union body, able to assist the Commission in its international activities (e.g. ICAO), allows the EU to have a strong voice at global level and promotes European standards internationally.</p>
Proposed starting year	The Partnership is expected to start implementation in 2021.