Background

The European Aeronautical industry is at a crossroads being confronted with many external challenges which need to be tackled through a European strategy in a global context:

- Reduce the environmental footprint of civil aviation (climate change and noise in particular) by supporting the most sustainable and the most economic and least energy consuming technologies
- Address the capacity crunch in the Air Traffic Management (ATM) system, in Europe, especially in view on the delays during last summer and the expected added value for citizens and businesses in terms of implications in terms of finance- and time savings
- Be at the forefront of the digital revolution in civil aeronautics/aviation, lead on new mobility concepts and the implementation of new transversal technologies (i.e. artificial intelligence, virtual reality, robots, etc.) into the sector, while strengthening secure and safe mobility for passengers and freight and ensuring the re-skilling and retraining of workers of the sector
- Be able to compete on a level playing field with existing and emerging competitors while ensuring this competitiveness meets the optimal standards of transparency to support fair competition and while stimulating the role of SMEs, startups and entrepreneurship in the EU

This matters for Europe, since the European Aeronautical Industry is a key component of the European economy, directly employing 500,000 people in high quality jobs and positively contributing to the EU trade balance (46 billion Euro in exports). This high-tech sector has a true global and European footprint: it consists of large (prime) manufacturers as well as many smaller and medium sized (supply chain) companies with facilities spread among the different regions of the European Union and beyond. As such, this sector is a key contributor to the EU economic prosperity and job creation based on high-tech manufacturing of products which are sold on the global market.

The civil aeronautics sector contributes to the European strategic autonomy in particular in relation to synergies in technologies with space and defence applications. In the context of growing protectionism in some areas of the world, it allows Europe to continue being a world-class leader while contributing to the security of Europe.

Sustainable & green aviation:

Through technology and innovation, the civil aeronautical industry plays a key role to reduce the environmental impact of civil aviation, in particular in relation to noise and emissions (climate change). A new generation of aircraft typically reduces emissions by 15–20%. An improved more performant European Air Traffic Management system could reduce emissions up to 10% in Europe. Joint technology initiatives such as Clean Sky and SESAR play a key role in this respect.

Success stories of Clean Sky 1 include, inter alia, the flight tests of the BLADE laminar wing (boasting a 50% wing friction reduction and up to 5% less CO₂ emissions) and Contra-Rotating Open Rotor (reducing fuel consumption and CO₂ emission by about 30%).

When deployed, SESAR’s 63 solutions lead to a 34% increase in airspace capacity and a 30% decrease in flight time variance, meaning reduced delays on all EU flights and 95% of flights staying within their time plan, as well as a decrease of 2.3% of fuel burn and emissions per flight.

Further work will be required to meet environmental targets set at European and global levels. The Advisory Council for Aviation Research in Europe (ACARE) Flightpath 2050 has set a 2050 goal for technologies and procedures to allow a 75% reduction in CO₂ emissions per passenger kilometer, a 90% reduction in NOₓ emissions and a 65% reduction in the perceived noise emission of flying aircraft (these are relative to the capabilities of typical new aircraft in 2000). In particular further work will be required on electrification and hybridization of aircraft.

Addressing the capacity crunch in European Air Traffic Management:

In the context of the congested European skies and increasing air traffic delays, the EU industry has developed various SESAR solutions to ease the congestion. The deployment of those SESAR solutions should be accelerated in order to improve the performance of the EU Air Traffic Management System for the EU citizens and in order to reduce the environmental impact. Financial incentives and smart regulation will also be required for Air Navigation Service Providers, airspace users and airports to accelerate the deployment of new technology and to reward early adopters of new technology.

Digitalization, new transversal technologies and new mobility concepts:

Europe should lead the global race to digitise civil aviation and civil aeronautics. Emerging technologies such as augmented/virtual reality and automation based on robust strategies for cyber protection will drastically change civil aviation in the upcoming years. New mobility concept including flying taxi’s, drones, single pilot aircraft, high altitude platforms and unmanned rotorcraft as well as new digital air and unmanned traffic management systems will change both the traditional aviation sector as well as open up opportunities for new urban air mobility concepts. Collaboration at European level through Joint Technology Initiatives such as Clean Sky and SESAR is also essential in this context.

Aircraft certification will also evolve towards more efficiency, using information technologies at different stages of projects development and reducing for instance the number of flight tests. The early involvement of EASA in future research programs will be important to anticipate coherent regulatory evolutions in technological developments.
Moreover, a robust EU strategy to lead on the digitalization of manufacturing processes is also crucial for the competitiveness of EU industry. This includes work on factories of the future, new predictive maintenance procedures and a strategy to ensure a fair social transition and retrain the future and existing workforce on digital skills.

The evolution towards big data management, systems interconnection and automation of operational functions will request strong protection regarding cybersecurity based on global cooperation under the umbrella of international organizations.

Europe should ensure this competitiveness meets the optimal standards of transparency to support fair competition apart from strengthening and supporting the data protection standards (including those of the final users).

Towards an EU Aeronautical Industry Strategy:

This should all be seen in the context of the fact that the world is drastically changing. The US industry (EU industry’s main competitor) continues to receive very strong public support from the US government in particular in the field of research funding and through 34 different US Government departments and Agencies, all working together to ensure the competitiveness of US industry. Emerging countries also invest heavily into the sector with the aim to create domestic champions. China in particular has identified the development of a national aeronautical industry as a key priority in various government documents including through the Make in China 2025 initiative. In the context of further globalization and the fact that growth mainly happens outside Europe, EU industry needs similar tools and public support to remain competitive on the worldwide market in the longer term.

Achievements of the current European Commission in the field of civil aeronautics

With the upcoming EU elections and renewal of the European Commission College, it is time to take stock of the current EU Commission achievements in the field of civil aeronautics.

Generally speaking a number of good initiatives have been (further) developed by the current Commission in the field of civil aviation:

- The Clean Sky 2 and SESAR 2020 Joint Technology Initiatives have continued the pace of innovation in the field of civil aviation thanks to EU funding.
- The Commission finalized the Pilot Project “New architecture for EU airspace”. The solution to provide airspace capacity in the near future is to include the recommendations of this pilot project into legislation, which means finalizing Single European Sky 2+.
- The revised Basic Regulation of the European Aviation Safety Agency (EASA) (as part of the wider EU aviation strategy which includes other elements mainly relevant for airlines) has been adopted. It will improve the functioning of EASA which as such plays a key role to certify European products and to enable their entry into service on the global civil aviation market.
- The European Union has played a key role to enable the global ICAO agreement on a Market Based Measure for civil aviation emissions (CORSIA). As such international civil aviation is the first sector worldwide to have adopted a sector specific carbon offset scheme.
- EASA has launched its initiative for Cyber Security in civil aviation. This enables Europe to be properly equipped to deal with this emerging threat and to ensure that global ICAO initiatives serve the European needs.
- A roadmap has been developed for Europe to be at the heart of developments in the field of civil drones including the U-space concept for Unmanned Traffic Management Systems (UTM)

From the side of the EP:

- The TRAN Committee has included airports in its amended proposal for Regulation establishing the Connecting Europe Facility (CEF) for the 2021-2027 period to guarantee the safety and maintenance of the connection of TENT networks.
- The TRAN Committee has agreed in supporting and recognising in CEF 2021-2027 the potential of SESAR projects in the transport sector and in particular in the digitalisation of the sector and they have been recognised as horizontal priorities in Annex Part III.

More transversally the following initiatives are also relevant for the civil aeronautical industry:

- Civil aeronautics might take some benefit from initiatives related to defence and space in particular in relation to synergies in terms of technologies. Nevertheless, since defence and space have been on top of the EU agenda, there has been a general lack of high-level EU attention for the strategic importance of the civil aeronautical sector.
- European Commission’s proposal for Regulation on Screening of Foreign Direct Investment Screening (FDIs) has been launched and will improve coordination at EU level in particular to protect critical technologies which are relevant for the sector
- The EU has concluded further trade agreements with third countries (Japan in particular) which will create some further opportunities for EU industry.

Last but not least, the United Kingdom has decided to leave the European Union on 29th March 2019. Finding an efficient post-Brexit agreement during the ongoing negotiations is essential for the EU aeronautical industry since this industry is fully integrated at EU level.

Whereas the achievements of the current EU Commission should be applauded, what has really been lacking is a more comprehensive strategy to support the EU civil aeronautical industry based on a sectorial industry policy and based on long-term commitments to support the sector. Many building blocks are already available at EU and national levels (i.e. EU External Action Service, EASA, Clean Sky JTI, SESAR JTI and others) but what is lacking is the glue to have all actors working together towards the goal to support EU industry (similar to the different US government Agencies and departments all working together to support US industry). An ‘EU civil aeronautical industrial strategy’ is really needed to complement existing EU sectorial industrial approaches in Defence, Space, Steel and Automotive, and initiatives on civil aviation (airlines).
Recommendations to the next European Commission for its work-plan beyond 2020:

- Launch an EU Civil Aeronautical Industry Strategy where all EU actors work together towards a common goal to support the competitiveness of EU industry at global level based on an industrial policy. Ensure support to all segments of European industry (Original Equipment Manufacturers (OEM) and EU supply chain), in particular the role of SMEs, start-ups and entrepreneurship in the EU, should become a much stronger political objective of Europe, comparable to what the USA and China are doing for their domestic industries. Appoint a single European Commissioner to be in charge of the implementation of such strategy based on coordination between the different actors involved at EU and national levels. This should also include the earlier SSI suggestion to build an ‘Aeronautics’ watchtower at Commission level to monitor non-tariff barriers in key aeronautical regions and assess the relative competitiveness of the EU aeronautical industry.

- Conclude an efficient post-Brexit agreement which takes into account the highly integrated nature of the EU civil aeronautical industry, in order to avoid potentially negative consequences upon the competitiveness of the EU and UK aeronautical industry.

- In the context of the ongoing negotiations on the Horizon Europe Programme for Research and Innovation, ensure that civil aeronautics remains a top priority in terms of funding in line with the earlier SSI recommendations (3rd EU Aeronautics Conference report) to reserve at least 5 billion Euro in public funding for this sector and to launch Clean Sky 3 and SESAR 3 initiatives.

- Electrification/hybridization, new mobility concepts, emerging technologies and digitalization should be a key driver for innovation beyond 2020 at EU level in the field of civil aviation.

- Ensure the accelerated and swift deployment of SESAR solutions as an essential tool to improve the performance of the European Air Traffic Management System and to reduce the congestion in the European skies. Ensure that Air Navigation Service Providers, airspace users and airports that deploy new technology early are adequately rewarded through financial incentives and smart regulation (i.e. avoid the late/last mover advantage).

- Implement the revised EASA basic regulation, which should enable a more efficient framework to bring new technologies to the market in particular through performance based regulations. Allow EASA to open more offices in third countries to enable European products to be sold on key export markets without technical barriers. In this context, give EASA adequate means and autonomy at international level including with regard to the deployment of resources. The early involvement of EASA in future research programs will be important to anticipate coherent regulatory evolutions in technological developments.

- With regard to REACH and chemicals used for safety critical application in aeronautics, give EASA a real say in REACH related decision making procedures.

- In terms of trade, investigate how Europe can ensure its strategic autonomy irrespective of sanction decisions taken by non-EU countries which might have repercussions for EU industry. In this context, ensure that civil aeronautics is a key element in EU foreign trade negotiations and EU economic diplomacy.

- Make further progress on the implementation of the Regulation proposal on Screening of Foreign Direct Investments with the aim to ensure reciprocity and to protect critical technologies.

- Develop a proper EU strategy to protect European Intellectual Property and to prevent industrial espionage while protecting personal data.

- Work in a cooperative way at international (ICAO) level to ensure global standards for in particular the environment, air navigation and cybersecurity and to enable new technologies to be deployed in the global civil aviation market.

- In the context of an ageing workforce and new technological challenges, develop an overall EU strategy for skills (re-skilling and training) in aeronautics to ensure an optimal level of the rights of workers in the industry of aeronautics and also the respect of rights of the final users. This should include i.e. EU and national education and training programmes with life-long learning and high-quality training provisions at its core. SMEs should receive extra support if required. ERASMUS+ Programmes should be used to promote the uptake of STEM subjects and to improve the gender balance for the profession.