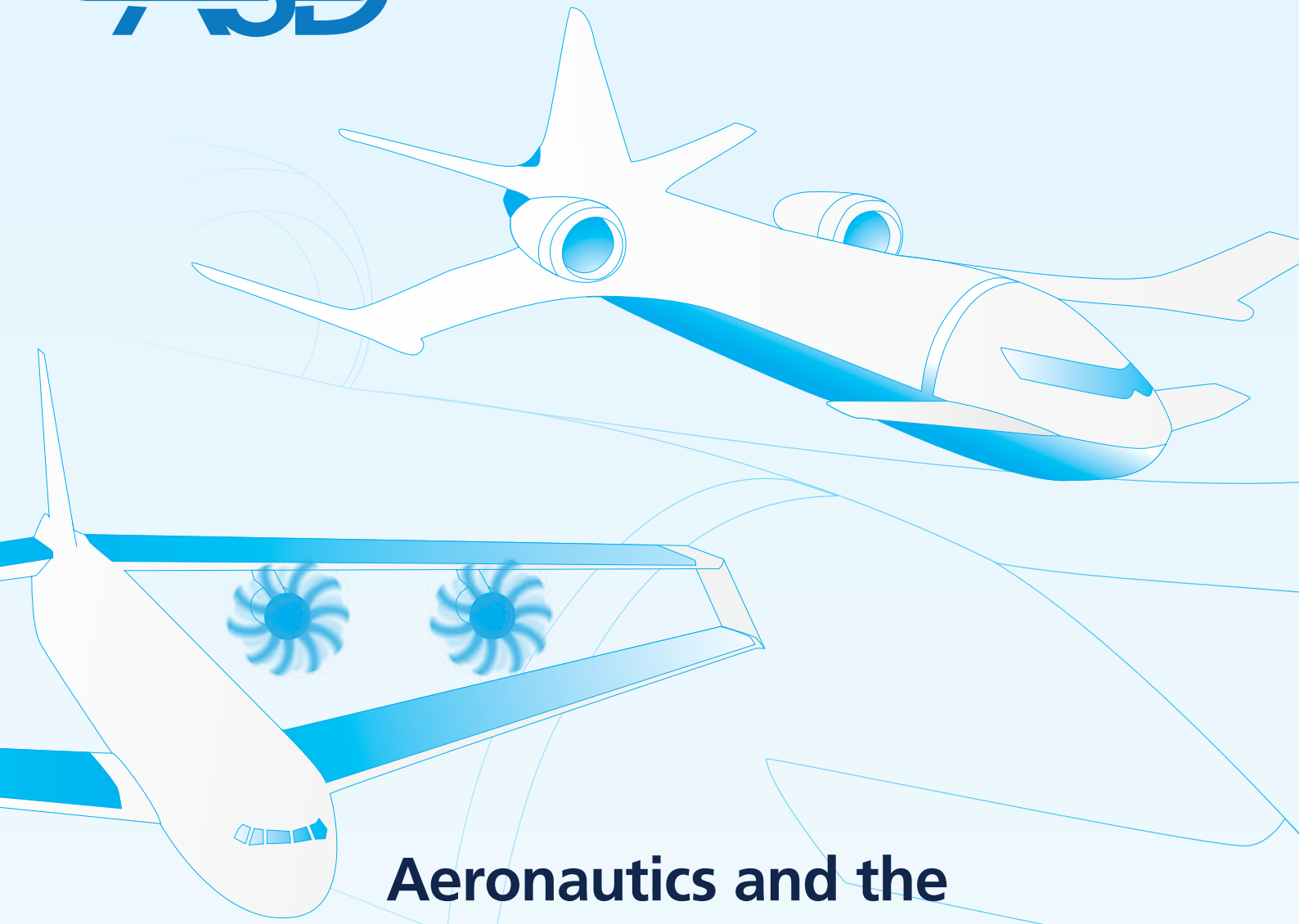
AeroSpace and Defence
Industries Association of Europe



Aeronautics and the EU Common Strategic Framework (CSF)

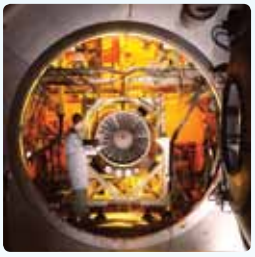
The European aeronautics industry leads the world in developing sustainable aviation products, meeting the needs of EU citizens and society. Technological leadership is the foundation of this success.

Significant and sustained investment in technology is required to maintain this position. The next Common Strategic Framework is a vital element in the continuing research and innovation effort.

Aeronautics is at the heart of EU policies, in particular the EUROPE 2020 strategy and its flagship initiatives: Innovation Union - An industrial policy for the globalisation era - Resource efficient Europe – An agenda for new skills and jobs. The EU can enable the delivery of this strategy through smart, sustainable and inclusive growth by supporting the aeronautics industry in the Common Strategic Framework.

EU & AERONAUTICS: WORKING TOGETHER TO DELIVER VALUE TO EUROPEAN CITIZENS

Smart Growth



Aeronautics is dedicated to innovation.
Innovation drives the European aeronautics sector. Innovative, leading-edge technology is the major competitive differentiator when offering environmentally friendly and operationally efficient products to growing world markets under fierce and increasing competition from existing powers and new entrants. European aeronautics is currently facing ever-greater worldwide competition particularly from emerging nations (Brazil, Russia, China, India). The European industry cannot compete on price with these nations and therefore must innovate technologically. Continuous research, which drives step-changes in innovation, is the cornerstone of this industry and its prospects for growth in new and emerging markets.

Aeronautics is a growth sector and has prospects for a growing highly skilled workforce in Europe.
Europe has almost 2,000 aeronautical companies and 80,000 subcontractors. The 466,000 highly-qualified direct employees turn over revenues of €100.4 bn (of which 60% for civil applications). The sector dedicates an average of 12% of its revenues to R&D. Aviation (encompassing all its components: manufacturing, airports, airlines, air navigation, maintenance) represents around 2.3% of European GDP (i.e. roughly € 275bn) and 3.4 million jobs.

Aeronautics benefits adjacent sectors in its capacity as a growth enhancing industry.
Aeronautics technologies are catalysts for innovation and spill over into other sectors, thus stimulating the growth of the wider European economy.

Aeronautics R&D not only develops technologies that are incorporated in products and systems in its own sector, but often result in "spill-over" benefits for adjacent sectors. Aeronautics is often the proving ground for new technologies, particularly new materials, and for new processes, such as advanced manufacturing. A variety of studies show that the "spill-over" benefit of aerospace technology investment is larger than the manufacturing average. This enables supply chain companies in particular to diversify into multiple sectors. The main effect of "spill-over" is at the lower end of the supply chain, where technological advances and process improvements filter down and are available for use in the range of sectors beyond aeronautics, such as transport, power generation and broader engineering.

Sustainable Growth

Sustainable development and energy efficiency are of paramount importance in the aeronautics sector. The sector continues to concentrate its efforts through ACARE[1] to reduce the environmental impacts of air transport in terms of CO_2, Noise and NO_x emissions and increasingly green manufacturing. Over the past 40 years, commercial aircraft have become 70% more fuel-efficient through the application of innovative technologies. Though great progress has been achieved more is required to continue along this path in order to sustainably meet the growth of demand for air traffic. The industry will further develop the concept of eco-efficient flying in order to offer sustainable mobility.

Inclusive Growth

The economic, societal and technological weight of the aeronautics and aviation sectors is substantial in terms of economic growth, GDP, employment, export, and as a lead contributor to the trade balance. Aeronautics employs a highly skilled workforce in Europe. It is a key pillar of the air transport sector which is a catalyst for growth and employment across the EU.

The air transport sector represents a vector for mobility and exchange, supporting cohesion between the regions of Europe. As a contributor to economic recovery, aviation is strategic for a vast majority of Member States and massively contributes to Europe's economic and political strength.

Green, Smart and Safe Mobility

Through the delivery of innovative products and systems incorporating state of the art technology with respect to the environment, air traffic management and safety, the aeronautics sector contributes concretely to the European policy for Green, Smart and Safe Mobility.

The aviation industry interfaces with other forms of transport. In this context it has a unique role to play in contributing to a holistic comodal policy through its technology base and expertise.

THE COMMON STRATEGIC FRAMEWORK (CSF) FOR RESEARCH, TECHNOLOGICAL DEVELOPMENT AND INNOVATION: AN ESSENTIAL TOOL FOR AERONAUTICS

In order to fully realise the potential which the aeronautics sector is capable of delivering to Europe, the specific and unique nature of aeronautical innovation must be recognised.

Roadmaps for Research and Innovation

The specific characteristics of aeronautics are marked by the high complexity of its products, systems and systems of systems, all of which are technology and capital intensive, and subject to very long cycles (20 to 30 years). If the objectives established by ACARE's Strategic Research Agenda are to be achieved, research efforts must continue to be based on a programmatic approach that necessitates continuity across R&T efforts over several years. This will also necessitate the continued availability of excellent research infrastructures. Aeronautics research is not attractive to financial markets because of the scale of risk associated with large investments, which have long timescales for returns on investment. This is why public sector support - which is common to all aeronautics powers worldwide - is essential both at European and national levels. Backed by this public support, the aeronautics sector is in a position to co-fund those research and innovation activities required to deliver benefits to the European citizens and maintain European leadership.

To achieve these overall objectives, the sector's research and innovation needs are outlined in the ACARE Council's 20-year roadmap which is acknowledged by all as the reference document for aeronautical research in Europe. The ACARE Council will now take the new "Vision 2050"[2] as a baseline. **This updated roadmap will be the common European reference shared by the Member States and all air transport stakeholders** for aeronautical research and innovation within the CSF.

An example of Unmanned Aerial System

Maximising the impact of the CSF

In order to maximise its impact, the CSF must be articulated with a view to meeting the specificities inherent to each mode of transport. For aeronautics the development of innovative technologies relates to several aircraft categories and new air systems including Unmanned Aerial Systems. The improvement of their environmental, energy and economic performance

levels is at stake. The full research and innovation cycle must encompass all stages, from the incubation of upstream and pioneering activities to the demonstration and in-flight validation of current and new technology areas and breakthrough technologies. The CSF must aim at technological excellence, which enables innovation, leading to the worldwide leadership and competitiveness of Europe and its industry. At the same time it is essential to pursue the necessary societal and environmental objectives. To achieve this, **Europe must develop an industrial policy for aeronautics.**

To ensure resources are used efficiently, flexibly, continuously and in a targeted manner, it is recommended that 7th Framework Programme instruments continue to be used, and further improved and simplified. **Recently implemented, they contribute to stability and facilitate the involvement of all research stakeholders.** They have proven to be fit-for-purpose in upstream pioneering research projects, targeted research projects (level 1), technological integration projects (level 2), as well as Public Private Partnerships, Joint Technology Initiatives (level 3, Clean Sky, SESAR).

[1] Advisory Council for Aeronautics Research in Europe.

[2] This Vision has been drawn up by the Group of Personalities implemented subsequent to an agreement between Commissioners M. Geoghegan-Quinn and S. Kallas.

Recommendations

It is in Europe's interest to pursue, within the Common Strategic Framework, a technological innovation dynamic for aeronautics in order for air transport to deliver green, smart, safe and secure mobility. In order to rise to the numerous challenges of the next 10 to 20 years in a context of emerging and often highly subsidised competition, the following recommendations are of paramount importance:

- **Preserve the structuring role and leverage power of the Framework Programmes in order to prepare the future of the high-technology, long cycle European aeronautics sector.**
- **Support the Aeronautics thematic within the future CSF, with a dedicated funded aeronautics programme enabling Europe's extended long-term objectives for 2050 to be met.**
- **Ensure the stability of instruments recently deployed in the 7th Framework Programme and which have proven their value, such as upstream pioneering research (level 1), technological integration projects (level 2) as well as PPP and JTIs (level 3), whilst improving their efficiency by further simplifying their implementation.**
- **For European air transport, develop a standardisation and interoperability strategy which will anticipate aeronautical innovation and strengthen Europe's competitiveness (e.g. Single Sky, SESAR).**
- **In the wider context of European Union policies and strategies (Lisbon, Europe 2020), place aviation at the heart of EU priority actions such as EU industrial policy, EU research and innovation policy ahead of the CSF, and policies relative to the environment and sustainable development.**

By implementing the recommendations above, the EU can fulfil its ambitions and aspirations and make full use of the innovative potential offered by the aeronautics sector through a durable and stable CSF. This sector offers a great return on Research and Innovation investment and great potential in answering EU citizen's needs with respect to education, jobs creation and reduction of the environmental impact of air transport.

ASD represents the aeronautics, space, defence and security industries of Europe in all matters of common interest with the objective of promoting and supporting the competitive development of these sectors. ASD pursues joint industry actions which have to be dealt with on a European level or which concern issues of an agreed transnational nature, through generating common industry positions.

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