FUTURE SKY

EREA Association of European Research Establishments in Aeronautics

FUTURE SKY (FS) is a Joint Research Initiative of the Association of European Research Establishments in Aeronautics (EREA) devoted to preparing key technologies and capabilities for a green and seamless air transport in Europe.

Within Future Sky EREA promotes joining forces with the European industry and universities to design a new air transport system allowing environmentally friendly, smooth and efficient air vehicles and associated mobility.

Green and seamless air transport is to be thought as a key element for the most far-reaching goals of Flightpath 2050. Striving for a **substantial increase in performance, safety, competitiveness, and acceptance, Future Sky aims at promoting maximum air mobility** while making the highest demands on technologies as well as vehicle, system and operation design.

The overall Future Sky program is subdivided into six topics, each of them called "Future Sky Theme" and focusing on different aspects or challenges on track to the future air transport system.

Future Sky seeks to rally the available but so far scattered capabilities to tackle the major longer-term challenges of Flightpath 2050. For this reason main feature of this program will be the coordination, as far as possible, of research establishments' activities in the field of aviation research in Europe. EREA believes institutional cooperation of European research establishments is the best guarantee to ensure medium and long term technology development beyond the scope of top-down approach in SESAR and Clean Sky JUs.

In Future Sky, EREA members develop and pursue roadmaps covering at least a period of seven years addressing the complete air transport system and tackling research gaps not fully covered by the national institutional research programs. To fill these gaps subsequent Future Sky themes are intended to grow into multidisciplinary clusters of excellence for research and innovation in Europe.

Thereby Future Sky makes a substantial contribution to achieving the medium and long term goals of Flightpath 2050 and helps preparing the Framework Programs to come.

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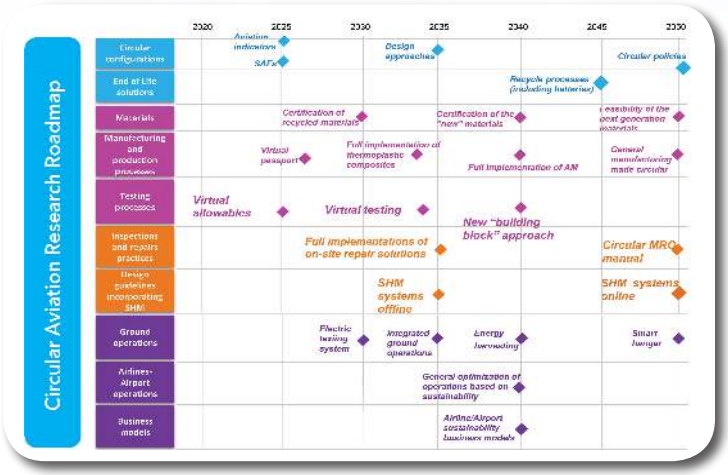
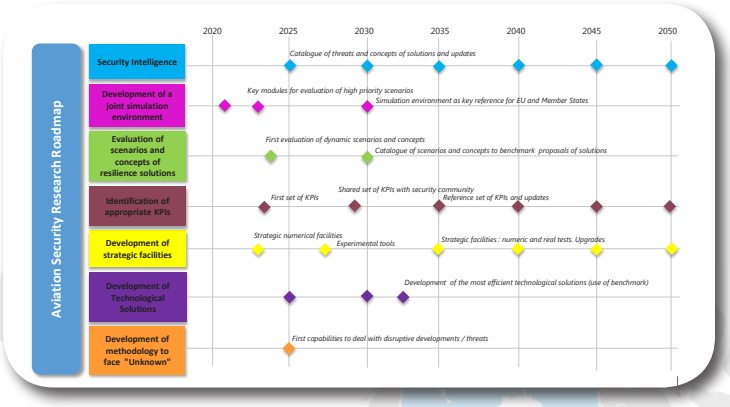
CIRCULAR AVIATION aims to support the implementation of circular and sustainable practices throughout all aspects of aviation, beyond in-flight operations. In particular, this theme targets the design and the manufacturing of air vehicles based on circularity principles. The goal of FS-CA is to enable to first fully circular flight by 2050.



CIRCULAR AVIATION – ACTION LINES

- Designing and producing the circular aircraft
- Flying circular
- The circular life cycle of aviation
- Airports and airlines as circularity ambassadors
- Circular policies and regulations

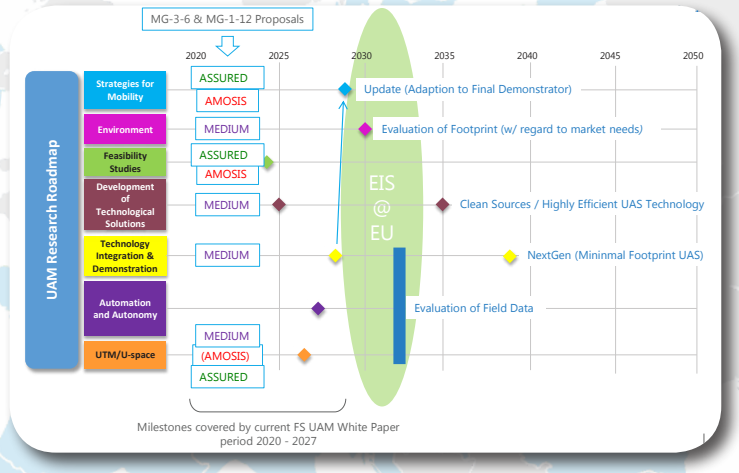
SECURITY FOR AVIATION is expected to be even more fruitful than at present by encompassing a larger scope through agile and dedicated cooperation. To cope with this aviation security challenge it is essential to develop efficient security solutions that meet the societal demand, the growth of the air traffic and the adaptations of the international regulations on one hand and that foster the European competitiveness and strengthen our position in the aerospace field on the other hand.



AVIATION SECURITY – ACTION LINES

- Development of a joint simulation environment and the associated tools
- Security of aviation: a consistent and efficient methodology
- Security community and society
- Design-in: interdependencies and inter-modalities

URBAN AIR MOBILITY is expected to accompany the revolution of the known mobility modes in the urban as well as the regional environment. For research this new modality sets the challenge of adopting a holistic view beyond the boundaries of current aviation. Specific goals are on-demand mobility in both high density and rural or remote areas, regional seamless mobility, as well as unmanned cargo and autonomous passenger transportation to reduce ground traffic and to enable fast motion of goods and persons.



URBAN AIR MOBILITY – ACTION LINES

- UAM class aircraft technology advancement
- Automation and autonomy
- Airspace integration – unmanned and autonomous traffic management
- Strategies for mobility
- Environment – sustainability & societal acceptance

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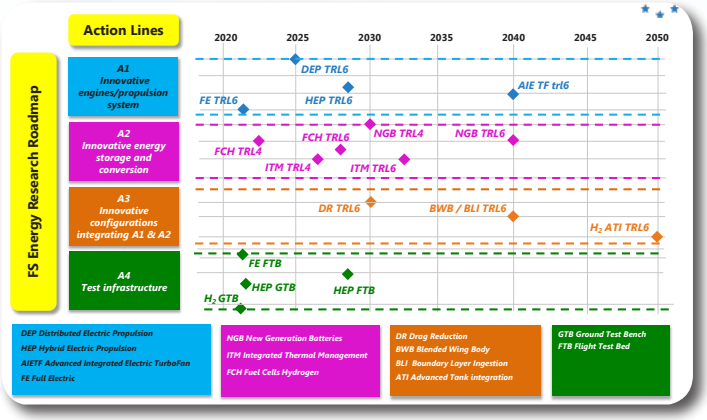
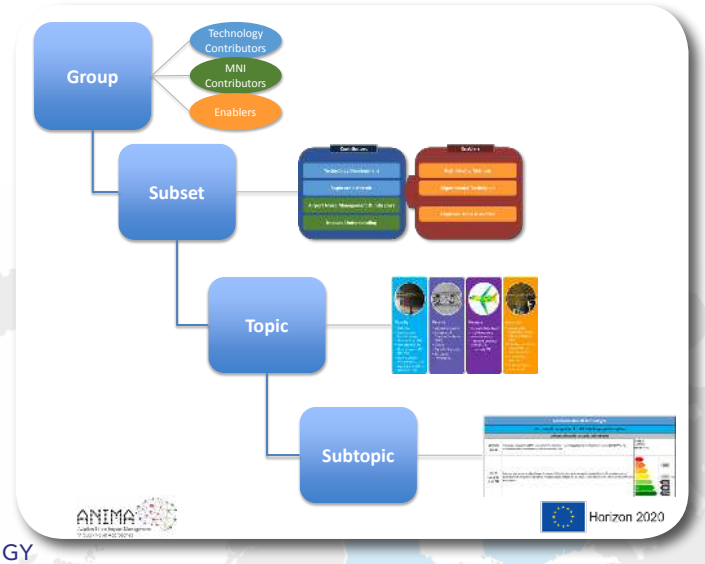
FUTURE SKY ENERGY aims at coordinating national and international activities of the EREA research establishments in order to achieve the critical mass and the right focus on a large set of stakeholders needed to achieve a drastic reduction of CO2 emissions by addressing novel propulsion technologies and their integration in future air transport.



FUTURE SKY ENERGY – ACTION LINES

- Innovative engines/propulsion system
- Innovative energy storage and conversion
- Innovative aircraft configurations
- Test infrastructure

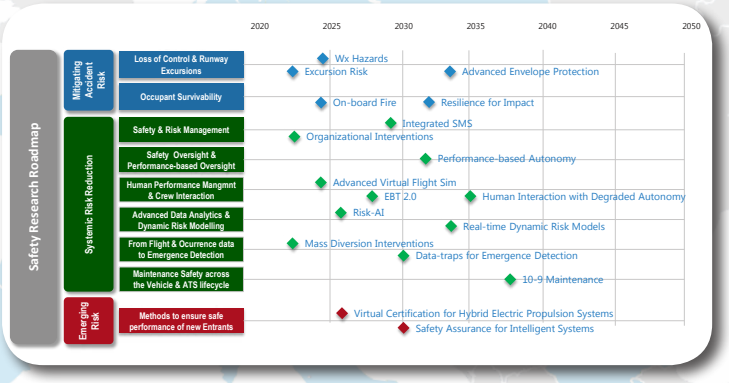
Quiet Air Transport is endeavouring to achieve new schemes for air transport that would benefit to all the stakeholders, from airport neighbouring communities to authorities and airports, taking into account the interest of European manufacturers and airliners. Such a consensus would certainly require a high level of transversality, in line with the aims of Horizon Europe. Therefore, if the method evolves,the final objective remains addressing the long-term strategic noise challenge in order to conciliate the competitiveness of the European Aviation industry with the high living standard conditions enjoyed by the EU citizens.



QUIET AIR TRANSPORT – ACTION LINES

- Low noise aircraft design and low noise technology
- Preventing emergence of noisy supersonic aircraf
- Community noise and health
- Interdependencies and inter-modalities
- Noise of urban mobility and services

Future Sky Safety programme will address new safety research priorities, in much closer coordination with EASA, and as part of an extended network of research partners and stakeholders, with the purpose of further improving the safety of aviation in Europe and beyond.



FUTURE SKY SAFETY – ACTION LINES

- Mitigating risk for specific accident categories
- Systemic risk reduction
- Emerging risk

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EREA MEMBERS

TOGETHER DESIGNING THE FUTURE OF AVIATION

FULL MEMBERS

AIT Austrian Institute of Technology

CEIIA

CIRA Italian Aerospace Research Centre

DLR Deutsches Zentrum für Luft- und Raumfahrt German Aerospace Center

FOI

Łukasiewicz Institute of Aviation

INCAS

Instituto Nacional de Técnica Aeroespacial

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STRATEGIC PARTNER

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