

International Cooperation

in Aviation Research



Public Report



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Dear Reader,

On behalf of the ICARe consortium, I am glad to share with you this summary report which provides an overview of the objectives and achievements of our project.

In this report, we present briefly the outcome of intensive work and fruitful discussions over the last 2.5 years.

The achievement of the ICARe concept and objectives would not have been possible without the support of several organizations and persons. In this context, I would like to thank cordially:

• The European Commission and the administrations of the different countries for facilitating the contacts

• The partners and colleagues from the International and European stakeholders who have provided their valuable contribution

• Those that I could have forgotten

Guy Gallic ICARe project Coordinator



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ICARe Introduction: Challenge & Objectives

In 2012, ACARE (Advisory Council for Aviation Research & Innovation in Europe), a forum bringing together the main European Aviation Stakeholders, published a vision "Flightpath 2050".

This vision includes some objectives linked to the topics mentioned below. Some of them are shared with other countries, and we can achieve more objectives if we work together.





Following "Flightpath 2050", a Strategic Research and Innovation Agenda (SRIA) was published and ACARE tasked a specific group "ACARE INCO" to assess how International Collaboration could support the development of technologies listed in the SRIA, resulting in a preliminary assessment of the interest of Europe to cooperate with 21 countries in the domain of research and technologies for aviation.



In October 2017, the H2020 EU funded project "International Cooperation in Aviation Research – ICARe" has been launched as a response to the call "MG-1.5-2016-2017: Identification of gaps, barriers and needs".

ICARe aims at facilitating and increasing international cooperation in aviation along common research and innovation roadmaps through extending and deepening ACARE INCO's previous work.

The outcomes of ICARe, briefly presented in this report, are the "photography of today". In the coming years, it is likely that new data and information should be considered.



ICARe Methodology and Approach

Based on the ACARE INCO experience, ICARe has developed a comprehensive methodology to accomplish its objectives.

Step 1	Definition of: 1. Structure of the "country profile" • Current "photography" of the country and its aviation sector • Government policy with regards to the aviation sector • Previous research cooperation in the field • SWOT analysis 2. Assessment criteria				
Step 2	1. Elaboration of the "country profiles"	2. Evaluation of past and current cooperation	3. Mapping of technologies & Competencies	4. Bilateral dialogues with 5 countries	
Step 3 Deliverable to the European Commission Recommendations based on identified "win-win" opportunities for future international cooperation in the field of aviation research & innovation.					
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In a nutshell

Win - Win Opportunities

Thanks to constructive discussions in a series of bilateral workshops with representative stakeholders of 5 countries, Canada, China, Japan, Russia and US, several win-win opportunities have been identified for each of these countries. In the case of Japan, the results obtained in a previous EU funded CSA (SUstainable Network for Japan-Europe aerospace research and Technology cooperation II – SUNJET II, Grant Agreement ID: 640480) have been considered.

Clustered Domains of the Research Topics



In what follows, the technical clusters of interest for each of the five countries are presented.



Win - Win Opportunities

Which Countries? Which Clusters?



*While the same size of icons is used, the respective level of interest of the country for each cluster is not the same.

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Other Countries

In addition to the bilateral dialogues with the five countries mentioned above, an assessment of potential cooperation opportunities with the remaining 16 countries in the ICARe perimeter was performed. Based on a detailed survey of the aviation landscape in these countries, the identified opportunities are depicted below:



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Non - Technical Recommendations

The holistic strategy developed by ICARe resulted in evidence-based recommendations regarding potential future international cooperation in aviation research & technology. In brief, our main conclusions are summarized below:



A win-win strategy is the first step towards a successful cooperation.



Equitable partnership, reciprocity, fair and equal treatment, as well as respect of Intellectual property rights (IPR) are necessary conditions for International Cooperation.



The EC and the counterpart administrations should work closely to overcome potential difficulties in the grant awarding and the synchronization of the funding.



For a successful cooperation, Standardization, Certification and Export Control should also to be addressed.



Lessons learned from successful past international cooperation:

- Easier to work at low Technology readiness level (TRL)
- Optimum project duration: 2-3 years
- Balanced consortium (industry, Research Establishments, Academia, SMEs, Agencies).



While the aviation sector is the focus for the development of new key-technologies, the interaction with other sectors (digital technologies, artificial intelligence, alternative fuels, energy storage) could be beneficial in the context of international cooperation.



Multilateral research synergies can result in cost-efficient technological advancements.



The established links should be kept alive with the aim to continue the dialogue in the already fertilized ground.



Links should be established also with other countries to further widen international cooperation.



*IATA not a formal consortium partner, but acting as a subcontractor

Advisory Board



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