

## 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.

Design by EASN-TIS

## The Consortium

The ICARe consortium represents the vast majority of the Aviation Research & Innovation EU stakeholders.



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

Visit the ICARe website



<https://icare-h2020.eu>



Contract Number: 769512

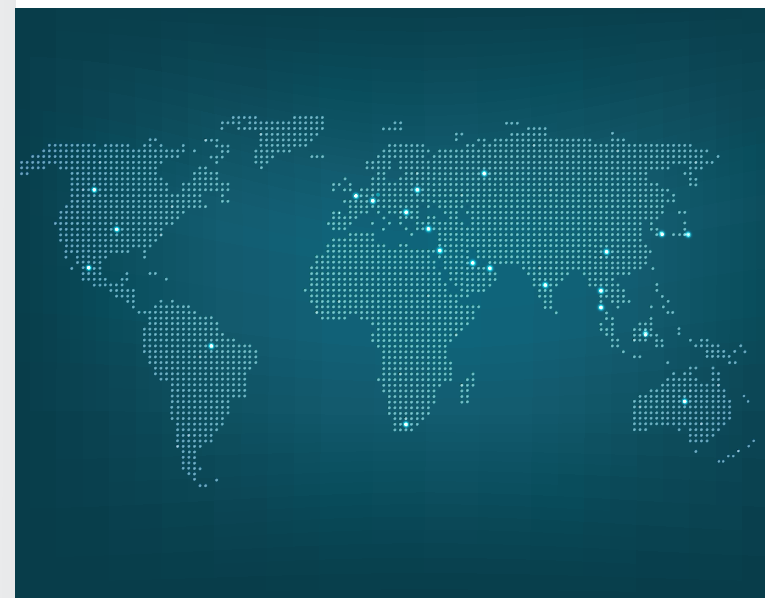
Start Date: 01.10.2017 • Duration: 32 months

Coordinator: ERDYN • Contact Person: Guy Gallic

More details: [info@icare-h2020.eu](mailto:info@icare-h2020.eu)

# ICARe

## International Cooperation in Aviation Research



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 769512.

# ICARe at a Glance

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. 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 & current cooperation

## 3. Mapping of technologies & Competencies

## 4. Bilateral dialogues with 5 countries

Step 3

**Deliverable to the EC:** Recommendations based on identified "win-win" opportunities for future international cooperation in the field of aviation research & innovation.

# Which Countries? Which Clusters?

## Clustered Domains of the Research Topics

1



## Environment & Energy

- Noise, emissions and fuel consumption reduction
- More Electric Aircraft/Engine
- Energy Storage (batteries, hydrogen...)
- Alternative fuel

2



## Materials & Structures

- Composites/Smart materials
- Advanced manufacturing processes (i.e. AM)
- Novel structure concepts
- SHM, Repair

3



## Safety & Security

- New needs related to technology advances, environmental changes while ensuring safety and efficiency
- Improve capabilities for detecting and mitigating cyber threats

4



## Engineering Methodologies & Technologies for the future

- Bonding/Welding technologies
- Artificial Intelligence, Virtual & Augmented reality
- Factory of the future, digital technology acceleration, Robots/Cobots
- Digitalization of Aerospace Maintenance - Big Data
- Human factors

5



## Interoperability

- UAS Management

6



## New configuration & optimization design

- Aircraft and airframe
- Flow control
- New configuration
- Future propulsion technology

7



## Supersonic & High Speed

- Regulatory framework and policy for future sustainable supersonic aircraft
- Development of associated technologies

8



## Regulation & Certification

- Development of a systematic approach for certification

## Identified Clusters\* of interest


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

In addition to the bilateral dialogues with the five countries, an assessment of potential cooperation opportunities with the other 16 countries of the ICARE perimeter was performed. Based on a detailed survey of the aviation landscape in these countries, a number of cooperation opportunities have been identified. More information can be found in the ICARE public report and the website of the project.

In a nutshell

