



# EU-CHINA JOINT RESEARCH ON AVIATION AND AERONAUTICS



## FOR GREEN, SAFE AND INCREASED DIGITALISATION OF AVIATION IN THE EU AND CHINA



**Aviation** and especially **aeronautics** constitute an important strategic area of collaboration on research and innovation between the EU and China for working towards **green**, **safe** and **increased digitalisation** of aviation in the EU and China.

# FLAGSHIP ON AVIATION RESEARCH IN HORIZON 2020

Under the EU's framework programme Horizon 2020, four new research and innovation actions were kicked off in April 2016 with joint funds from the EU (DG Research and Innovation, DG RTD) and China (Ministry of Industry and Information Technologies, MIIT) to address the technology areas of mutual interest focusing on green, safe and increased digitalisation of aviation.

## Joint projects through coordinated call under Horizon 2020

### IMAGE

Innovative methodologies and technologies for reducing aircraft noise generation and emission  
<http://www.cimne.com/image>

### ECO-COMPASS

Ecological and multifunctional composites for application in aircraft interior and secondary structures  
<http://www.eco-compass.eu/>

### DRAGY

Drag reduction in turbulent boundary layer via flow control  
<http://www.cimne.com/dragy>

### EMUSIC

Efficient manufacturing for aerospace components using additive manufacturing, net shape HIP and investment casting  
<https://www.birmingham.ac.uk/gen/eric/emusic>

Building on the long standing cooperation on aviation research, the European Commission and the Ministry of Industry and Information Technology agreed to promote further cooperation on "Aviation operations impact on climate change" which will concentrate on 1) mitigation strategies towards greener flight trajectories, and 2) mitigation strategies based on changes in the use of alternative fuels. This topic is intended to promote balanced and substantial cooperation between EU and Chinese organisations. Coordinated calls will be announced by MIIT and DG RTD under the Horizon 2020 new work programme 2018-2020.

## HORIZON 2020 WORK PROGRAMME 2018-2020

### LC-MG-1-6-2019: Aviation operations impact on climate change

**C) Propose and evaluate mitigation strategies towards greener flight trajectories (ensuring complementarities with SESAR JU activities. (China)**

### LC-MG-1-6-2019: Aviation operations impact on climate change

**D) Propose and evaluate mitigation strategies based on changes in the use of alternative fuels (China)**

## EU-CHINA SUPPORT ACTIONS IN FP6 AND FP7

The EU-China cooperation in aeronautics made significant progress during FP6 and FP7 being one of the first industrial sectors where the cooperation was developed. A number of support actions for the EU-China cooperation in aeronautics were launched with an increasing financial contribution from the Chinese side.

Balanced  
partnership

Average 16 EU  
and 16 Chinese  
Partners

### AEROCHINA

Promoting scientific cooperation between Europe and China in the field of multi-physics modelling, simulation, validation, experimentation and design methods in aeronautics

2005-10-01 to 2007-04-30

<http://www.cimne.com/aerochina/>

### AEROCHINA2

Prospecting and promoting scientific cooperation between Europe and China in the field of multi-physics modelling, simulation, experimentation and design methods in aeronautics

2007-10-01 to 2009-12-31

<http://www.cimne.com/aerochina2/>

### GRAIN

Greener Aeronautics International Networking

2010-10-01 to 2012-12-31

<http://www.cimne.com/grain/>

### GRAIN2

Greener Aeronautics International Networking-2

2013-10-01 to 2016-05-31

<http://www.cimne.com/grain2/>

## EU-CHINA JOINT RESEARCH PROJECTS IN FP7

Through the support actions, technical expert groups identified technology areas and specific topics of mutual interest which were selected for the coordinated call under FP7 after consultations with the European and Chinese stakeholders. The call resulted in two research projects jointly funded by the EU and China.

Joint funding

16 EU partners

9 CN partners

### MARS

Manipulation of Reynolds Stress for Separation Control and Drag Reduction

2010-10-01 to 2014-03-31

<http://www.cimne.com/mars/>

### COLTS

Casting of Large Ti Structures

2010-10-01 to 2013-09-30

<http://www.birmingham.ac.uk/research/activity/irc-materials-processing/themes/colts/index.aspx>

# THE EU-CHINA AVIATION RESEARCH BACKGROUND INFORMATION

Aviation and especially aeronautics constitute an important strategic area of collaboration on research and innovation between the EU and China. Apart from collaborations at bilateral level by European aviation industries with their Chinese partners, aviation research collaboration at the EU level dates back over ten years ago.

The European Commission's DG Research and Innovation (DG RTD) and the Chinese Ministry of Industry and Information Technology (MIIT) have a long-standing cooperation on R&D in the field of aeronautics/aviation through jointly co-funded coordination and support actions as well as research cooperation projects. The EU-China 2020 Strategic Agenda for Cooperation, endorsed by the EU-China Summit in November 2013 in Beijing supported cooperation in aviation, i.e. safety, impact to the atmosphere and cooperation in research and innovation in aviation.

Aviation cooperation continued to be among the priority areas agreed at the 3<sup>rd</sup> EU-China Innovation Cooperation Dialogue of 2 June 2017. In consultation with EU and Chinese industry, stakeholders' priorities of common interest have been identified and will result in EU-China coordinated calls for collaborative research and innovation projects.

With the strong commitment of project partners and government administrations from both sides, the joint support actions and research projects, involving a number of outstanding European and Chinese participants, have witnessed robust development and delivered excellent research results, thus demonstrating as win-win flagship initiatives in this important sector.

## EUROPEAN COMMISSION:

**DG Research and Innovation, H.3 Aviation:** [RTD-TRANSPORT-Aero@ec.europa.eu](mailto:RTD-TRANSPORT-Aero@ec.europa.eu)

**EU-China Research and Innovation Cooperation:** <http://ec.europa.eu/research/jscp/index.cfm?pg=china>

## EU DELEGATION TO CHINA:

**EU Delegation to China S&T Section:** [Delegation-China-Scitech@eeas.europa.eu](mailto:Delegation-China-Scitech@eeas.europa.eu)

**EU Delegation to China Website:** [https://eeas.europa.eu/delegations/china\\_en](https://eeas.europa.eu/delegations/china_en)

**HORIZON 2020 TRANSPORT RESEARCH:** <http://www.transport-research.info/>

**MINISTRY OF INDUSTRY AND INFORMATION TECHNOLOGY (MIIT):** [www.miit.gov.cn](http://www.miit.gov.cn)

**CHINA-EU S&T COOPERATION IN AVIATION:** <http://ch-eu.cae.ac.cn/en/index.aspx>



