3rd NEWSLETTER
August 2019

AERO-UA

STRATEGIC AND TARGETED SUPPORT FOR EUROPE-UKRAINE COLLABORATION IN AVIATION RESEARCH

About project

AERO-UA is a 3-year Coordination and Support Action started on 1 October 2016 and funded by the European Commission under the Smart Green and Integrated Transport Challenge of Horizon 2020 Programme.

The project **aims to stimulate aviation research collaboration** between the European Union and Ukraine through strategic and targeted support. **AERO-UA focuses solely on Ukraine** due to the country's huge aerospace potential and comparatively low level of aviation research collaboration with the EU.

The AERO-UA project will achieve its overall aim via **four high-level objectives**:

- Identifying the barriers to increased EU-UA aviation research collaboration
- Supporting EU-UA aviation research knowledge transfer pilot projects
- Providing strategic support to EU-UA aviation research collaboration
- Organizing awareness-raising and networking between EU-UA stakeholders

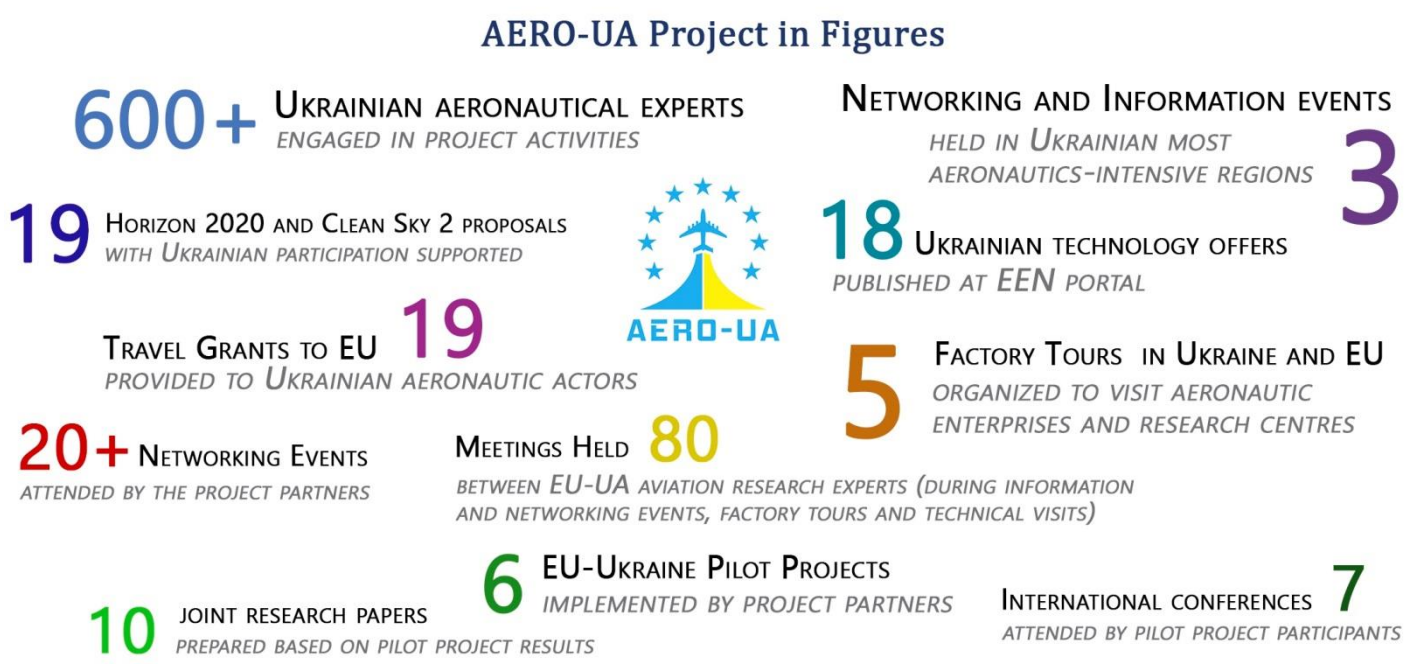
Why is it important? On the one hand, enhancing EU-UA collaboration will stimulate the growth and development of the Ukrainian aeronautic community. On the other hand, the unique skills and knowledge possessed by Ukrainian aerospace organisations can help Europe to address the global aeronautics' challenges and goals identified by ACARE in the Flightpath 2050 Report.

Final project dissemination activities in the frame of the 9th EASN International Conference on Innovation in Aviation and Space

The 9th EASN International Conference is a forum where the representatives of the European Aviation and Space sectors from the academia, industry, research community and policy makers gather to exchange innovative ideas. Furthermore, the conference is expected to be a major European Dissemination and Exploitation event of Aviation & Space related research. Therefore, it has been selected by the AERO-UA consortium to present implemented activities and achieved goals. The project will be presented at the Conference in three ways:

- By the project Coordinator, Mr. Giles Brandon during a session focused on H2020 CSA projects.
- By the AERO-UA consortium partners, who will disseminate the 6 pilot project results during the thematic sessions of the conference.
- By the AERO-UA Travel Grant winners during the thematic sessions of the conference.

AERO-UA Project in Figures



AERO-UA Advisory Board's recommended actions for long-term cooperation between the EU and UA in aeronautics

Action # 1 Formalize Ukrainian advanced research in the field of aeronautics and **produce a long-term strategic roadmap "Ukrainian Strategic Research Agenda in Aviation up to 2050"** similar to the ACARE Strategic Research and Innovation Agenda. Responsible: Ukrainian aeronautic research community – led by the National Academy of Sciences – to shape the roadmap with the support of the Ukrainian Government.

Action # 2 Establish and implement a **"Ukrainian Future Aviation" research funding programme** as a Ukrainian counterpart to the EU's Clean Sky programme. Responsible: Ukrainian aeronautic industry to lead the programme implementation and the Ukrainian government to co-finance the programme.

Action # 3 Identify **EU-UA technology gaps and technology domains** in which win-win partnerships can be established between the EU and Ukraine (e.g. freight transport of the future) and initiate a dialogue on strategic cooperation in these areas. Responsible: Mechatronics Cluster, UkrRIAT. EU counterpart: ASD

Action # 4 Identify **future potential "pilot projects" between the EU and Ukraine** with a focus on priorities in Clean Sky 2 and Horizon Europe to be further converted into full-scale projects. Responsible: Pro-active Ukrainian and European research entities and communities.

Action # 5 Restore **links with the Eastern Europe aeronautic industry** (including Poland, Czech Republic, Romania) and establish long-term collaborations. Responsible: Ukrainian aeronautics industry with the support of the Mechatronics Cluster and European national aerospace clusters.

Action # 6 Formalize **connections and links between Ukrainian and European research laboratories** via the Association of European Research Establishments in Aeronautics (EREA). Establish a Ukrainian focal point in the International Forum for Aviation Research (IFAR). Responsible: National Academy of Science to identify and designate high-professional volunteers from the Ukrainian aeronautic research community..

Action # 7 Increase **Ukrainian representation in key European aeronautics-oriented bodies, committees and associations** (e.g. ACARE, Clean Sky, etc) in order to support long-term understanding and collaboration. Responsible: Ukrainian Government to provide sufficient and stable financial support.

AERO-UA Travel Grants: 3rd Call Results

To promote research collaboration in the aerospace field, between the European Union and Ukraine the AERO-UA project provided, in total, 14 Travel Grants to Ukrainian actors in the frame of 3 open call. The aim of the travels was to attend thematic info-days and brokerage events organized by the European Commission, to meet with European partners, and to present research results at European conferences.

In this third call, travel grants will be awarded to make an oral presentation in a thematic session at the 9th EASN International Conference, which will be held on 3-6 September 2019 in Athens.

The Ukrainian aviation experts selected for the four travel grants to attend the 9th EASN conference were as follows:

- **Illia Kryvokhatko from Antonov Company** will make an oral presentation titled "Aerodynamic moment characteristics of tandem-scheme aircraft" during the Conference Session dedicated to "Aerodynamic Analysis and Design".
- **Tetiana Maslak from National Aviation University** will make an oral presentation titled "New Criterion for Aircraft Multiaxial Fatigue Analysis" during the Conference Session dedicated to "Non-Destructive Testing and Structural Health Monitoring of Aircraft Structures"
- **Viktoriia Bezsmertna from Frantsevich Institute for Problems in Materials Science** will make an oral presentation titled "Multifunctional polymer-based composite materials with weft-knitted carbon fibrous fillers" during the Conference Session dedicated to "Advanced Composites for Aerospace Applications: Modeling - testing - validation".
- **Natalia Smetankina from Pidgorny Institute of Mechanical Engineering** will make an oral presentation titled "Simulating of Bird Strike on Aircraft Laminated Glazing" during the Conference Session dedicated to "Impact of Composite Structures"

Find out more about the AERO-UA Travel Grant results at: https://www.aero-ua.eu/travel-grants.html

AERO-UA Information and Networking Event and Factory Tour in Zaporozhye

Home to Ukrainian aero-engine design and production, the AERO-UA project held a stimulating Factory Tour and Information & Networking Event in late April in Zaporozhye.

On 24 April 2019, the AERO-UA partners were treated to visits of the design, test and production facilities of SE Ivchenko-Progress and JSC Motor-Sich, which are the leading companies in aero-engines design and production.

The Information & Networking Event took place on 25 April 2019 and attracted over 60 representatives from Ukrainian and European aeronautic organizations. The Ukrainian participants came from universities, research institutes of the National Academy of Sciences Ukraine, and industrial enterprises including FED, Ivchenko-Progress, Motor-Sich, Prostir3D and Yuzhnoye. Among the non-Ukrainian experts were representatives of ILOT and TAI as well as the AERO-UA partners - Fraunhofer-IFF, ITWL, University of Manchester and Intelligentsia.

Promoting EU-Ukraine Collaboration at Valuable Aeronautic Events

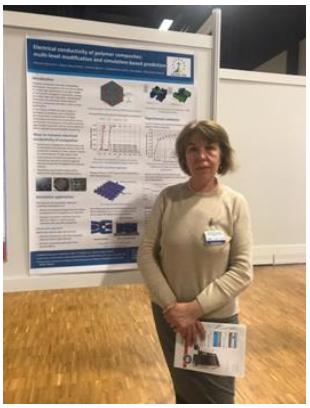
AERO-UA partners promote EU-UA aviation research cooperation at the Paris Air Show

AERO-UA consortium partners JSC FED, UkrRIAT and SE Ivchenko-Progress recently participated in the Paris Air Show in Le Bourget where they promoted EU-UA aviation research cooperation. During the event, JSC FED and UkrRIAT met representatives of the Aerospace Valley from Toulouse and the Torino Piemonte Aerospace cluster to discuss possible areas of industrial collaboration. These meetings are expected to be followed up with further discussions between the Ukrainian and European aviation clusters in Kyiv and Turin respectively.

AERO-UA project's latest results presented at Aerodays 2019

The AERO-UA project had the privilege of presenting its latest results during the important Aerodays 2019 event held in Bucharest at the end of May, which is the leading event in aviation research and innovation, mirroring the priorities and strategies set within the European Union Research Framework Programmes.

During a special joint session with six other aeronautics "coordination and support actions" funded under the Horizon 2020 programme, Igor Rybalchenko from National Aerospace University "Kharkiv Aviation Institute" made a presentation highlighting AERO-UA's results so far.



AERO-UA pilot project results presented at the IDTechEx Show

The results of the AERO-UA pilot project in the field of aerostructures were presented at the IDTechEx Show, which took place in Berlin during 10-11 April 2019.

During the IDTechEx Academic Poster session, Assistant Professor Maryna Shevtsova from KhAI presented the achievements in multi-level modification and simulation-based prediction of electrical conductivity of polymer composites, which were made by the joint effort of project partners National Aerospace University "KhAI", University of Manchester and Frantsevich Institute for Problems of Materials Science. The numerical results and experimental data demonstrate strong design potential to complex fabric architectures.

Antonov President and UkrRIAT CEO present at the SAMPE Europe 2019 Summit in Paris

Oleksandr Donets, Antonov President, and Dr. Georgii Krivov, UkrRIAT CEO, were key note speakers jointly presenting "Freight Aeroplane Transport Efficiency – the Antonov Outlook" during last week's SAMPE Europe 2019 Summit in Paris. SAMPE is a general organization devoted to the promotion of technical excellence in materials and process engineering. The SAMPE Europe 2019 Summit in Paris attracted over 160 top-level executives from companies such as Airbus, Airtech, Fokker and Solvay.

Project Partners

Contacts

Project Coordinator:
Mr. Giles Brandon, Intelligentsia Consultants
38 rue de Mamer, L-8081 Bertrange, Luxembourg, +352 26394233
giles.brandon <at> intelligentsia-consultants.com

www.aero-ua.eu

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