

# Advanced Modelling Methodology for Bearing Chamber In Hot Environment

## Deliverable: D5.5 Report on communication and dissemination actions

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Dissemination Level		
<b>PU</b>	<b>Public</b>	<b>X</b>
RE	Restricted to a group specified by the partners of the project	
CO	Confidential, only for partners	



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## Document History

Version and date	Changes
1.0 – 15/10/2023	Report structure and first draft: prepared by Lina Smovziuk (KhAI)
1.1 – 04/11/2018	Revised report: publications details provided by Taras Mykhailenko (KhAI)
1.2 – 08/11/2018	Revised report: details on publications' open access provided by Lina Smovziuk (KhAI)
2.0 – 09/11/2018	Final version: reviewed by Mykola Lubiv (STCU)

## 1. Introduction

### 1.1 AMBEC project short overview

The AMBEC project operates in the domain of gas turbines. It tackles one of the cutting-edge challenges which addresses the safe temperature conditions for the oil and the new compact design of bearing chambers for aircraft gas turbine engines. The project aims to develop a reliable experimentally validated methodology able to calculate heat transfer coefficients and fluid distribution in different zones of the bearing chamber. The methodology will be used for the improvement of the design of compact bearing chambers in a hot environment. Application of AMBEC methodology for aircraft engine design will ensure less oil flow rate, which will lead to reduction of power consumption by oil pumps and thus overall fuel savings. This will give the European aeronautical industry an opportunity to better compete in the global market and will contribute to the greening of EU aviation.

### 1.2 Scope of this deliverable

Dissemination is a significant tool that is used to connect the consortium members, the stakeholders of the related scientific fields, and the general public to the achievements and activities performed within the project. Via effective and strategic dissemination of the project's results, greater public awareness is created as well as knowledge sharing, transparency and education are promoted. Also, the potential of market uptake and commercial exploitation of the project results is considerably increased.

The purpose of this deliverable is to report on dissemination and communication activities implemented by the consortium during the AMBEC project implementation period.

## 2. General overview of the AMBEC dissemination and communication activities

The objectives of the dissemination and communication activities in the AMBEC project included enhancing project visibility among the target audience and disseminating the project outcomes and knowledge to facilitate realising the project's impacts and laying the groundwork for successful commercial and non-commercial exploitation of project outcomes.

The basic Dissemination and Communications Plan was adopted in October 2018. Being a live document, it was reviewed and modified through the project implementation period to cope with external circumstances: firstly, the COVID-19 pandemic and associated lockdowns in 2020-2021 and, secondly, the Russian invasion of Ukraine in February 2022 and continued Russian-Ukrainian war.

Notwithstanding the external situation, the AMBEC partners follow the general principles of dissemination and communication processes aligned with the provisions of the Grant Agreement and specific industrial orientation of the Clean Sky 2 JU, namely:

- All dissemination activities were agreed in advance with the AMBEC Topic Manager representing a Clean Sky 2 JU Partner
- All research results/reports were duly reviewed, and copies were sent to the Topic Manager and partners involved in the project before being published or disseminated.
- All dissemination activities were agreed with the AMBEC Data Management Plan regarding the principles of providing Open Access to research data needed to validate data published the scientific articles in Open Access Journals
- Any dissemination of results (in any form, including electronic):
  - a) displayed the JU logo;
  - b) displayed the EU emblem and
  - c) included the following text: *"This project has received funding from the Clean Sky 2 Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 785493"*.
- Communication processes were clear and known to all consortium partners;
- Dissemination and communication were open, honest and frank.

As initially planned, the AMBEC team focused on project outcomes dissemination via:

- Publishing project results in the form of research papers in international scientific journals and conference proceedings (3 publications were published).
- Participation in conferences related to aeronautics and gas turbine engines in general (4 participations were realised)

In addition to this, communication activities implemented include issuing press releases upon project start and completion to promote the project and its significant results.

Finally, a project website ([www.ambec.eu](http://www.ambec.eu)) was created to ensure project visibility on the Internet and enable potential end users and stakeholders be acquainted with the project and its results. The website will be maintained by KhAI 2 years after the project completion in October 2023.

Details of realised dissemination and communication activities are reported in Section 3 below.

### 3. List of the AMBEC dissemination and communication activities realised during the project implementation period

Table A1 – List of Peer-Reviewed Papers

LIST OF SCIENTIFIC (PEER REVIEWED) PUBLICATIONS AND TECHNICAL PAPERS										
No.	Title	Authors	Title of the periodical or the series or the event	Number, date or frequency (N/A for events)	Publisher or organiser	Place of publication or event venue	Year of publication or event	Relevant pages or event session	Permanent identifiers (if available)	Is/Will open access provided to this publication?
1	Specific Aspects in Numerical Simulation of Complex Processes in Gas Turbine Engine Bearing Chamber	T P Mykhailenko, A Yu Lysytsia, I I Petukhov, A V Kovalov	IOP Conference Series: Materials Science and Engineering	Volume 1226	IOP Publishing Ltd	Salerno, 1-3 September 2022	2022	N/A	DOI: 10.1088/1757-899X/1226/1/012038	Yes (green open access by publisher)
2	Study of Oil Film Heat Transfer in Gas Turbine Engine Bearing Chamber	Illia Petukhov, Taras Mykhailenko, Oleksii Lysytsia, Artem Kovalov	Proceedings of the ASME Turbo Expo 2021: Turbomachinery Technical Conference and Exposition.	Volume 1: Aircraft Engine; Fans and Blowers; Marine; Wind Energy; Scholar Lecture.	ASME	Virtual, Online. 7-11 June, 2021	2021	N/A	DOI: 10.1115/GT2021-58964	Yes (Zenodo repository)
3	Study on Accuracy of Heat Transfer Coefficient Determination in the Bearing Chamber for Gas Turbine Engine	Illia Petukhov, Taras Mykhailenko, Sergiy Yepifanov, Oleg Shevchuk	Proceedings of the ASME Turbo Expo 2020: Turbomachinery Technical Conference and Exposition.	Volume 1: Aircraft Engine; Fans and Blowers.	ASME	Virtual, Online. 21-25 September, 2020	2020	N/A	DOI: 10.1115/GT2020-14304	Yes (Zenodo repository)

Table A2 – List of Conferences and other dissemination activities

LIST OF DISSEMINATION ACTIVITIES									
No.	Type of activities	Main leader	Title	Date/Period	Place	Type of audience	Size of audience	Permanent identifiers ISBN	Countries addressed
1	Conference presentation	Mykhailenko	11th EASN Virtual International Conference on Innovation in Aviation & Space to the Satisfaction of European Citizens	September 1-3, 2021	Virtual, Online	Scientific community, Industry	N/A	N/A	EU level, international level
2	Conference presentation	Mykhailenko	ASME Turbo Expo 2021, Turbomachinery Technical Conference and Exposition GT2021	June 7-11, 2021	Virtual, Online	Scientific community, Industry	N/A	N/A	EU level, international level
3	Conference presentation	Mykhailenko	ASME Turbo Expo 2020, Turbo Expo Turbomachinery Technical Conference & Exposition	September 21 – 25, 2020	Virtual, Online	Scientific community, Industry	N/A	N/A	EU level, international level
4	Conference presentation	Mykhailenko	XXV International Congress of Propulsion Engineering	September 8-11, 2020	Virtual, Online	Scientific community, Industry	N/A	N/A	Ukraine level, international level

Table A3 – List of Communication activities

LIST OF COMMUNICATION ACTIVITIES								
No.	Type of activities	Main leader	Title/Subject	Date/Period	Place	Type of audience	Size of audience	Countries addressed
1	Website	KhAI	<a href="http://www.ambec.eu">www.ambec.eu</a>	February 2019	Web	Scientific community, Industry, Civil Society	500+	EU, Ukraine, international level;
2	Press release at project start disseminated to media	KhAI	Ukrainian researchers will implement the first for Ukraine European Clean Sky 2 project in the frame of H2020 program	29 May 2018	Ukraine	Medias	10000+	Ukraine
3	Articles published in the popular press	KhAI	The KhAI's first success in the European Clean Sky 2 programme (KhAI local newspaper)	25 June 2018	Kharkiv	Scientific community, Civil Society	1000	Ukraine
4	Press release upon project completion published on the project website	KhAI	Clean Sky 2 AMBEC project: Results Achieved and Further Prospect	October 2023	Web	Scientific community, Industry, Civil Society	500+	EU, Ukraine, international level



## 4. Conclusions

The AMBEC project, addressing challenges in gas turbine technology, aimed to enhance aircraft gas turbine engine design by developing a validated methodology to optimise bearing chamber design. This methodology promises reduced oil flow, resulting in lower power consumption and overall fuel savings, aligning with EU aviation's green objectives.

Throughout the project, focused efforts were put into communicating the project to the target audience and disseminating the project findings to the extent that does not affect the confidential information and interests of the AMBEC Topic Manager (Safran Aircraft Engines).

These activities were significantly complicated, firstly, by the COVID-19 pandemic that started in 2020 and blocked all conferences and face-to-face networking events. The AMBEC team followed the scientific community adaptation to the lockdown challenges and took part in four online conferences in 2020-2021. Three peer-reviewed conference papers were published following these conference participations.

Secondly, the Russian invasion of Ukraine in February 2022 resulted in an 18-months project suspension. After the project resumption, the AMBEC team implemented the necessary actions to ensure open access to the project's peer-reviewed publications ensuring transparency and compliance with the grant agreement rules. Also, the AMBEC website ([www.ambec.eu](http://www.ambec.eu)) will be maintained during the 2-year period after the project completion in October 2023 to continue sharing project-related information.