PRESS RELEASE

Paris, Thursday 13th February 2025

ROSAS: AI-ENHANCED SIMULATION TOOLS FOR THE NEXT GENERATION OF CLIMATE-NEUTRAL AIRCRAFT

- **The ROSAS consortium, composed of 14 partners from 8 EU countries and the UK, has been selected under the Horizon Europe program to enhance the competitiveness and sustainability of the aeronautical industry.**
- **The 42-month ROSAS project will develop AI-augmented aerodynamic simulation tools to accelerate aircraft design and reduce costly physical testing.**
- **By integrating Machine Learning (ML) and advanced turbulence modelling, ROSAS will enable the next generation of climate-neutral aircraft with improved operational reliability.**

To meet the European Union's goals of aeronautical industry competitiveness and climate neutrality, ROSAS is developing AI-advanced Computational Fluid Dynamics (CFD) algorithms, key innovation in the rapid growth of digital transformation for design in aerospace industry. Traditional CFD processes require multiple costly and incremental refinements. By integrating ML algorithms trained on high-fidelity simulations and experimental data, ROSAS will provide an innovative computational framework for faster and more precise evaluations of next-generation aircraft configurations.

The project is tackling two major challenges to enhance aircraft design capabilities:

- **AI-driven high-order algorithms:** Developing advanced AI methodologies and high-order numerical algorithms to optimize computational performance and align with next-generation High-Performance Computing (HPC) infrastructure.
- **ML-based turbulence modelling:** Creating Machine Learning-driven turbulence models using statistical data and time-series results from high-fidelity simulations and experiments, improving the accuracy of complex aerodynamic predictions.

By addressing these challenges, ROSAS will help bridge the gap between academic research and industrial applications, ensuring that AI-augmented simulation tools become a fundamental component of future aircraft design strategies.

The ROSAS consortium brings together 14 partners from 8 EU countries and the UK, including leading research organizations, universities, and aeronautical industry leaders. It also includes a Super-Computing Centre and an SME specializing in project management and exploitation, ensuring that the developed technologies align with industrial needs and applications.

Project Facts:

Project reference	101138319
Horizon Europe call:	HORIZON-CL5-2023-D5-01
Start Date	01 Jan 2025
Duration	42 months
Requested EU Contribution	€4,630,603.46

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Project Members:

- OFFICE NATIONAL D'ETUDES ET DE RECHERCHES AEROSPATIALES – ONERA, France (coordinator)
- UNIVERSITA' DEGLI STUDI DI BERGAMO – UNIBG, Italy
- DEUTSCHES ZENTRUM FUR LUFT - UND RAUMFAHRT EV – DLR, Germany
- DASSAULT AVIATION – DAV, France
- ERDYN CONSULTANTS SAS – Erdyn, France
- BARCELONA SUPERCOMPUTING CENTER CENTRO NACIONAL DE SUPERCOMPUTACION - BSC, Spain
- CENTRE DE RECHERCHE EN AERONAUTIQUE ASBL - CENAERO - CENAERO, Belgium
- CENTRE EUROPEEN DE RECHERCHE ET DEFORMATION AVANCEE EN CALCUL SCIENTIFIQUE - CERFACS, France
- KUNGLIGA TEKNISKA HOEGSKOLAN – KTH, Sweden
- SAFRAN SA – SAFRAN, France
- UNIVERSITE CATHOLIQUE DE LOUVAIN – UCL, Belgium
- UNIVERSITA DI PISA - UNIPI, Italy
- UNIVERSIDAD POLITECNICA DE MADRID - UPM, Spain
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