ROSAS

AI-enhanced simulation tools for the new generation of climate-neutral aircraft

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.

14 partners

42 months January 2025 to June 2028

8 EU countries and the United Kingdom

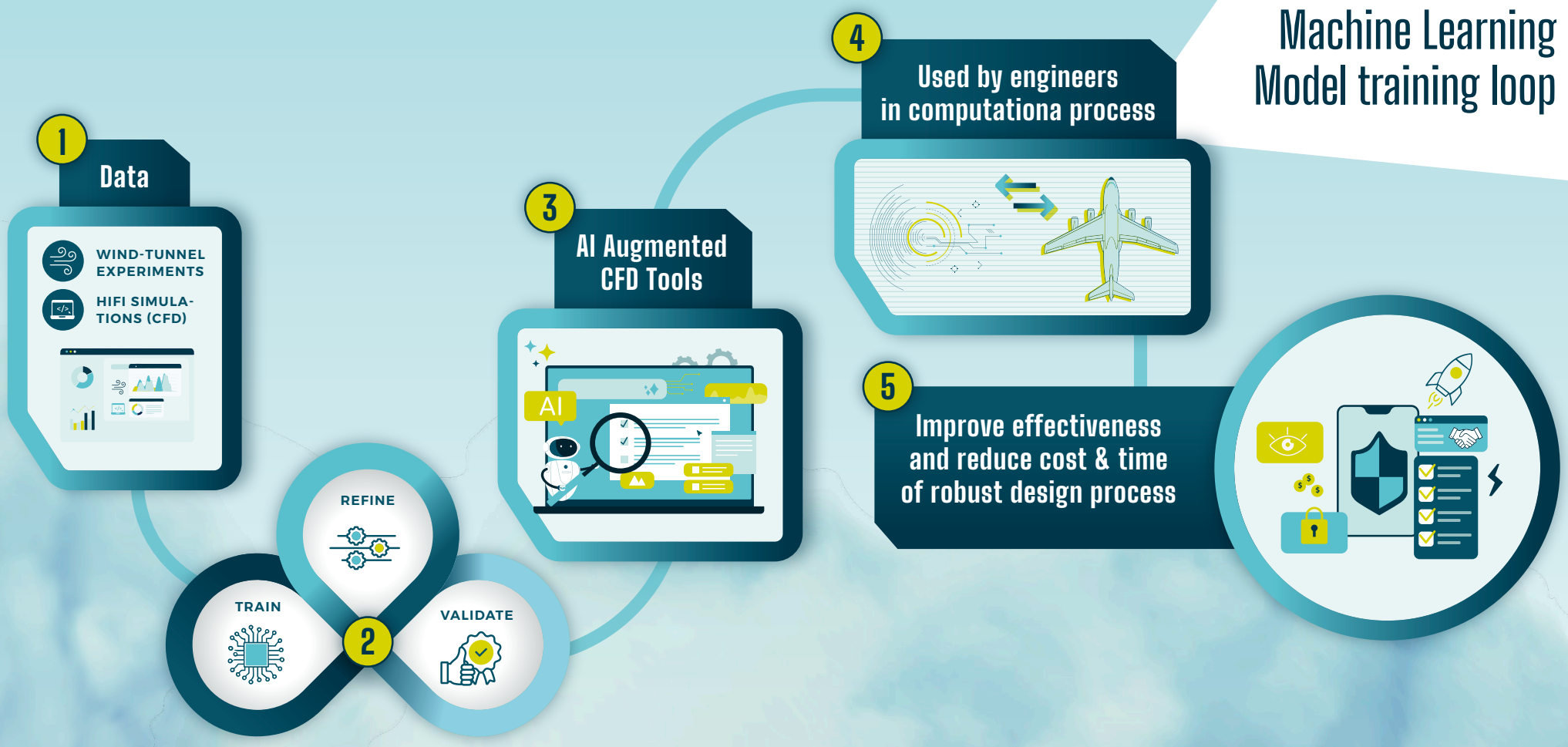
4 630 603,46 € budget

ROSAS's two main scientific and technical challenges :

- **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.



Funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them. Grant Agreement n°101138319.

ONERA THE FRENCH AEROSPACE LAB — COORDINATOR

UNIVERSITÀ DEGLI STUDI DI BERGAMO · DLR · ERDYN Anticipate Act Assess · DASSAULT AVIATION · Cenaero · BSC Barcelona Supercomputing Center Centro Nacional de Supercomputación · CERFACS

SAFRAN · KTH VETENSKAP OCH KONST · UCLouvain · UNIVERSITÀ DI PISA · UNIVERSIDAD POLITÉCNICA DE MADRID · etsiae ESCUELA TÉCNICA SUPERIOR DE INGENIERÍA AERONÁUTICA Y DEL ESPACIO · ROLLS ROYCE