

NEWSLETTER

ISSUE 7, SEPTEMBER 2026



DEMOS:
Development
Challenges
& Solutions

EASN16th
International
Conference

Dear Reader,

We are pleased to present Issue 7 of the HERWINGT Newsletter.

HERWINGT (**Hybrid Electric Regional Wing Integration Novel Green Technologies**) is contributing to the transition towards more sustainable aviation by developing an innovative wing concept for future hybrid-electric regional aircraft. Through advanced wing architectures, lightweight structures, and enhanced integration of electrical systems, the project is targeting a 50% reduction in fuel consumption at aircraft level compared with a 2020 state-of-the-art aircraft.

In this issue, we showcase the latest progress achieved across the project's demonstrations during the past four months, highlighting key technical developments, challenges addressed, and milestones reached.

We are also delighted to announce the dedicated session "*HERWINGT Demos: Development Challenges and Solutions*", to be held during the 16th EASN International Conference at ISAE-SUPAERO in Toulouse. The session will bring together leading industrial and academic partners, including AIRBUS, ACITURRI, CIRA, HAI, Siemens, and TUDelft, to share insights into the development challenges encountered throughout the demonstrations and the innovative solutions developed to address them.

We hope you enjoy this edition and thank you for your continued interest in HERWINGT's journey! Happy reading!

On behalf of the HERWINGT Project Coordinator

AIRBUS


CLEAN AVIATION

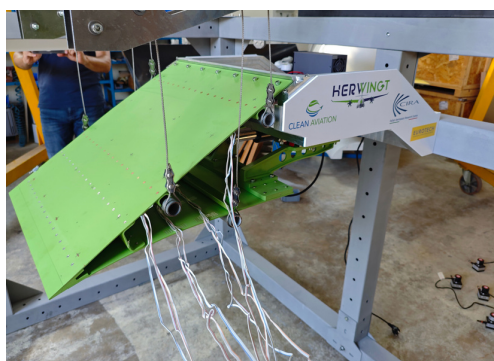


HERWINGT Successfully Completes Experimental Validation Campaign of the Morphing Flap Demonstrator



The Italian Aerospace Research Centre (CIRA) has completed the experimental validation campaign of the HERWINGT-compliant morphing trailing-edge flap demonstrator at EuroTech S.r.l. in Capaccio Paestum, Italy. Conducted within the framework of the Clean Aviation Joint Undertaking, the campaign marked the completion of the demonstrator's functional and static testing, following the successful dynamic validation activities previously carried out. The experimental programme provided the data required to assess the structural behaviour of the demonstrator and to correlate the experimental measurements with the numerical models developed during the design phase.

This important milestone represents a significant step towards the final demonstration of the HERWINGT project technology, confirming the effectiveness of an integrated approach that combines advanced engineering design, high-precision manufacturing and experimental validation.



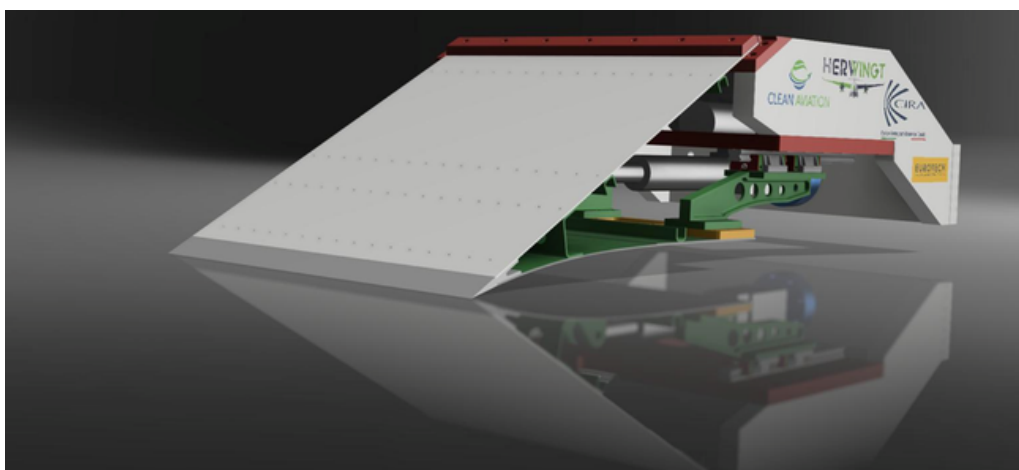
The campaign was made possible through the close collaboration between CIRA and EuroTech S.r.l., whose technical expertise and commitment were fundamental to the successful manufacturing of the demonstrator, the development of the dedicated test rig and the execution of the experimental activities.

Members of the CIRA team are Pietro Catalano, Project Manager, Salvatore Ameduri, Head of Adaptive Structures Operational Unit & Technical Supervisor; Maria Chiara Noviello, DEMO Leader, Bernardino Galasso, Experimental Tests WP Leader, and Gianluca Diodati, Dynamic Test Lead, working in close cooperation with Francesco Amoroso, CEO of EuroTech, and Samuele Santoro from the EuroTech technical staff.



By successfully completing the experimental validation campaign, the HERWINGT consortium has taken another important step towards advancing adaptive morphing technologies for the next generation of sustainable aircraft, reinforcing the value of European collaborative research and the strong partnership between research organisations and industry.

CIRA represents HERWINGT at the **16th EASN International Conference**. Dr Maria Chiara Noviello will present all the latest achievements of HERWINGT's Morphing Trailing Edge Flap (MTEF) Demonstrator. Her presentation will be one of the seven in total which will be discussed in the dedicated HERWINGT session entitled "*HERWINGT Demos: Development Challenges and Solutions*"



Executive design of the MTEF with simulation of surface finishing



HERWINGT Morphing Ailerons Successfully Validated in Wind Tunnel Tests



The HERWINGT project has reached an important experimental milestone with the successful wind tunnel validation of a representative full-scale morphing wing demonstrator at Politecnico di Milano.

The test campaign focused on the outer 2.5 metres of the innovative wing developed for the Clean Aviation regional aircraft and equipped with two servo-actuated morphing ailerons. These devices, designed at Politecnico di Milano by Prof. Alessandro De Gaspari and Post-Doc Researcher Vittorio Cavalieri, integrate compliant structures, dedicated kinematics, and electromagnetic servo-actuation to achieve smooth, high-bandwidth shape changes under aerodynamic loads.

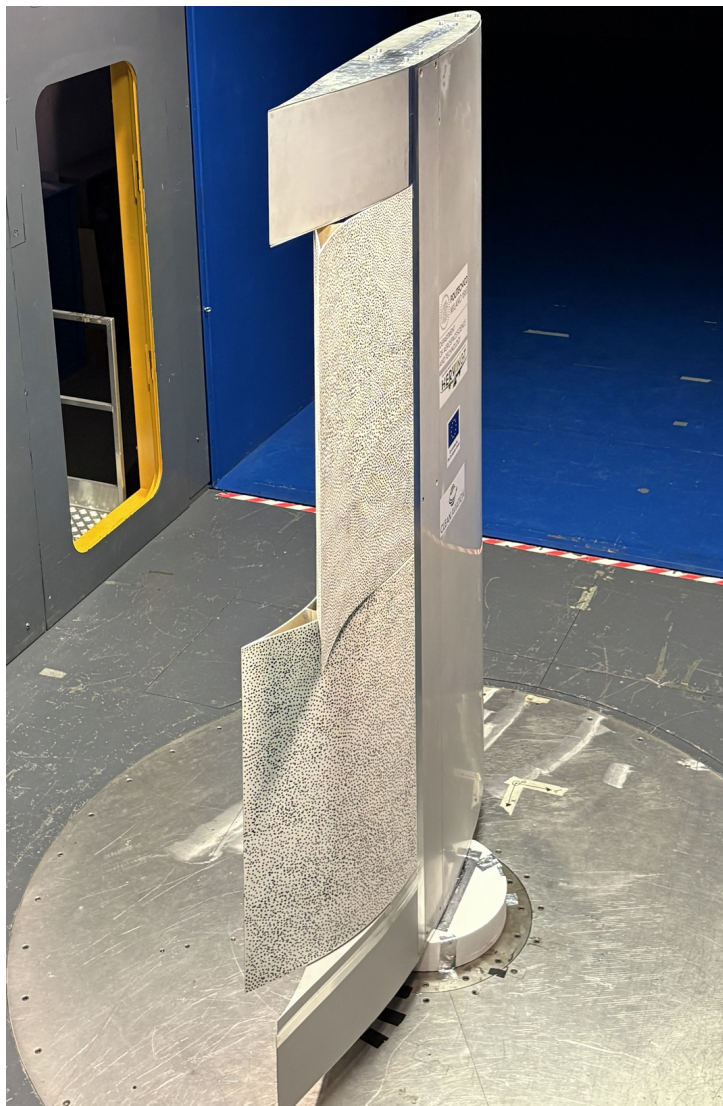
The experimental campaign demonstrated the full static and dynamic functionality of the morphing ailerons in a representative aerodynamic environment. From a static perspective, the morphing concept improves the aerodynamic behaviour of the wing by avoiding geometric discontinuities between the wing and the control surface.

The aileron acts as a natural continuation of the wing, requiring lower deflections to deliver the same aerodynamic effect and reducing the actuation forces needed.



From a dynamic perspective, one of the most significant outcomes of the wind tunnel campaign is the confirmation that the morphing ailerons can effectively exploit structural flexibility while maintaining the stiffness and robustness required to preserve the commanded shapes under external aerodynamic loads. Thanks to the complete integration between the flexible morphing structure and the servo-actuation system, the ailerons achieved a significantly higher bandwidth compared with conventional aileron concepts, accurately following fast step commands and oscillating inputs while reducing the required actuation effort.

The demonstrator was installed on a dummy wingbox manufactured by **Hellenic Aerospace Industry**. The morphing ailerons and the servo-actuation system, both designed at **Politecnico di Milano** were then integrated onto this structure.



Advanced instrumentation was used throughout the campaign, including sensors for actuator position and force, accelerometers, a RUAG strain-gauge balance, and a Digital Image Correlation system provided by **Siemens Digital Industries Software** to reconstruct the morphing shapes during the tests.

SIEMENS will present part of their work at the dedicated HERWINGT session entitled "*HERWINGT Demos: Development challenges and solutions*" at the **16th EASN International Conference** by Davide Mastrocasa, Research Engineer at Siemens Digital Industry Software.

These results represent a major step towards the experimental validation of morphing wing technologies for future regional aircraft, demonstrating the potential of integrated morphing structures and high-bandwidth actuation systems to support more efficient, adaptive, and sustainable aviation concepts.

HERWINGT Demos: Development Challenges and Solutions

EASN16th

**Join the
session!**

October 29
(Day 3)
at 17:00



Bringing together leading industrial and research organizations, the session will offer an exclusive behind-the-scenes look at the technological developments demonstrated within HERWINGT across three key thematic areas:

- Liquid Resin Infusion (HAI, Aciturri, Airbus Defence and Space)
- Thermoplastic Technologies (AIMEN)
- Morphing Structures (CIRA, TU Delft, SIEMENS)

Through firsthand accounts from the teams driving these innovations, attendees will gain valuable insights into the engineering challenges encountered during development, the solutions adopted, and the lessons learned along the way.

Showcasing the practical realities of advanced aeronautical research and industrial implementation, the session promises a stimulating exchange of knowledge and expertise for researchers, engineers, and aviation professionals alike.

Explore the conference [agenda](#) and **Save the Date!**



Final Event

29 October 2026 | Toulouse, France

HERWINGT Demos:
Development Challenges
and Solutions

Technical Presentations

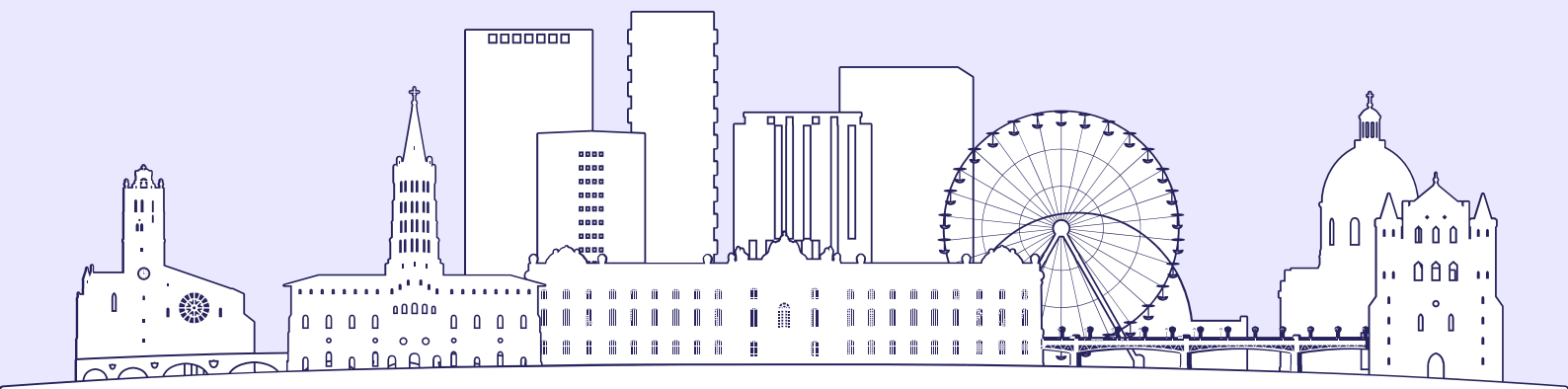


HERWINGT



A pioneering wing design for
a future hybrid-electric aircraft

EASN16th International Conference



See you in Toulouse !

AIRBUS

ikerlan
MEMBER OF BASQUE RESEARCH
& TECHNOLOGY ALLIANCE

aimen
TECHNOLOGY CENTRE

EASN TIS



Fraunhofer

LEONARDO

FORRES

rta
RAIL TEC ARSENAL

cea

CIRA
Centro Italiano Ricerche Aerospaziali

POLITECNICO
MILANO 1863



TU Delft

ACITURRI

fidamc

IAI

DLR

ain

Applus⁺
laboratories

ALESTIS
AEROSPACE

SIEMENS



Collins Aerospace
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ATR

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