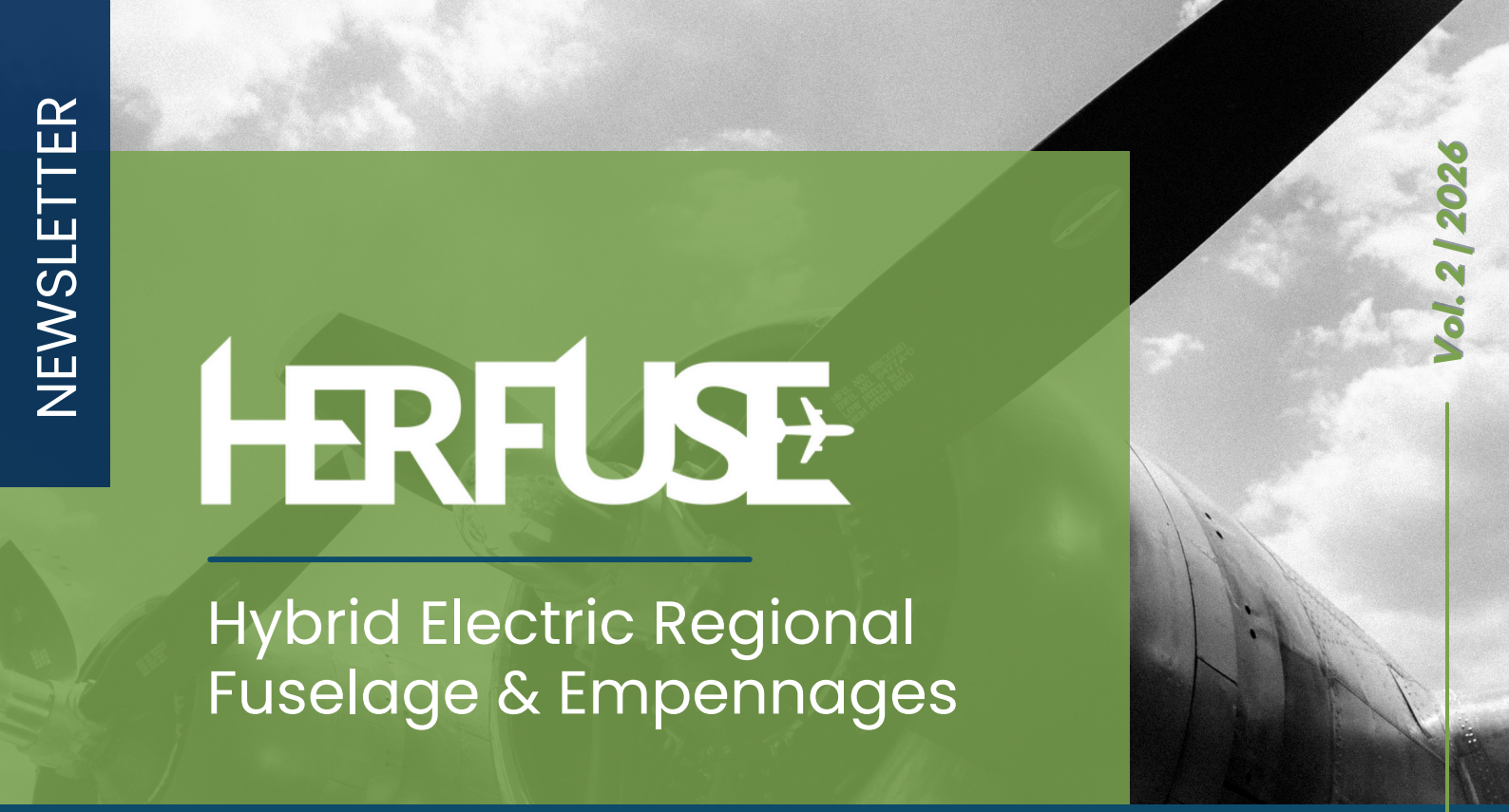
NEWSLETTER



HERFUSE

Hybrid Electric Regional Fuselage & Empennages

Vol. 2 | 2026

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Welcome, Readers!

As HERFUSE moves beyond its second year, the project continues to gain strong momentum, delivering tangible progress across aircraft design, systems integration, and advanced manufacturing.

Aligned with the Clean Aviation vision, the consortium is actively transforming innovative concepts into validated, integrated solutions for next-generation regional aircraft.

Over the past reporting period, HERFUSE partners have successfully completed key milestones that strengthen the project's technical maturity and reinforce its close collaboration with other Clean Aviation initiatives, most notably HERA.

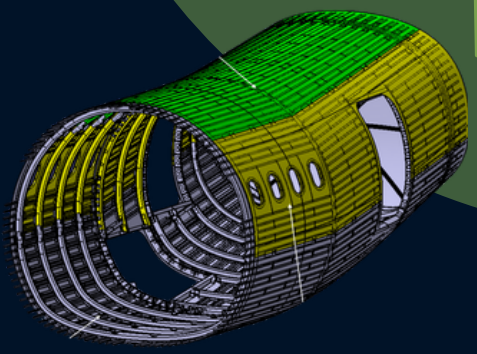
From clearly defined aircraft requirements to refined conceptual designs and manufacturing activities already underway, HERFUSE is steadily turning ambition into engineering reality.

The project is supported by the Clean Aviation Joint Undertaking and its members.
Funded by the European Union under GA No 101140567. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or Clean Aviation Joint Undertaking. Neither the European Union nor Clean Aviation JU can be held responsible for them.

Conceptual Design Achievements

Conceptual design activities have reached a major milestone.

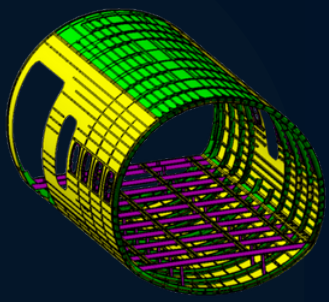
For both use cases, the fuselage and empennage concepts have been mostly completed, including dedicated solutions for hydrogen, batteries integration, and related systems.



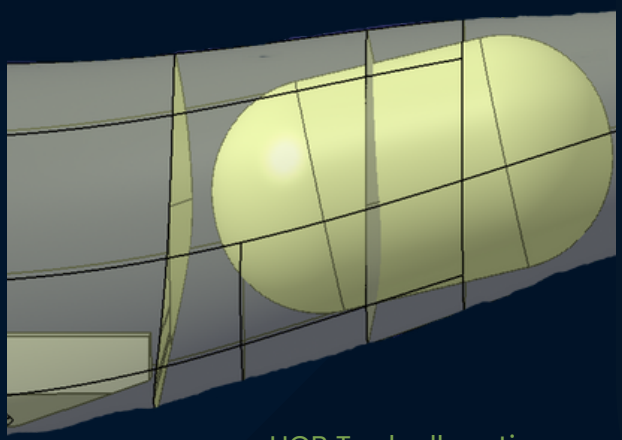
UCB Rear fuselage

In particular, challenges related to hydrogen tank allocation have been successfully resolved, enabling a more robust and feasible aircraft architecture.

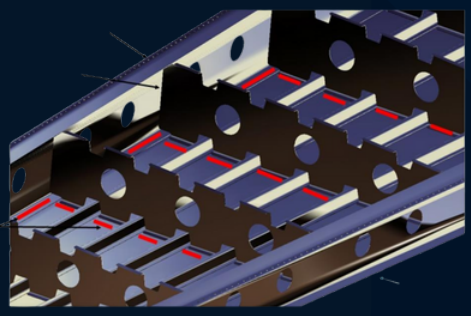
The UERA fuselage and vertical empennage designs have been finalized in full alignment with the latest UERA configuration, ensuring consistency and interoperability across Clean Aviation projects.



UERA FWD Fuselage



UCB Tank allocation



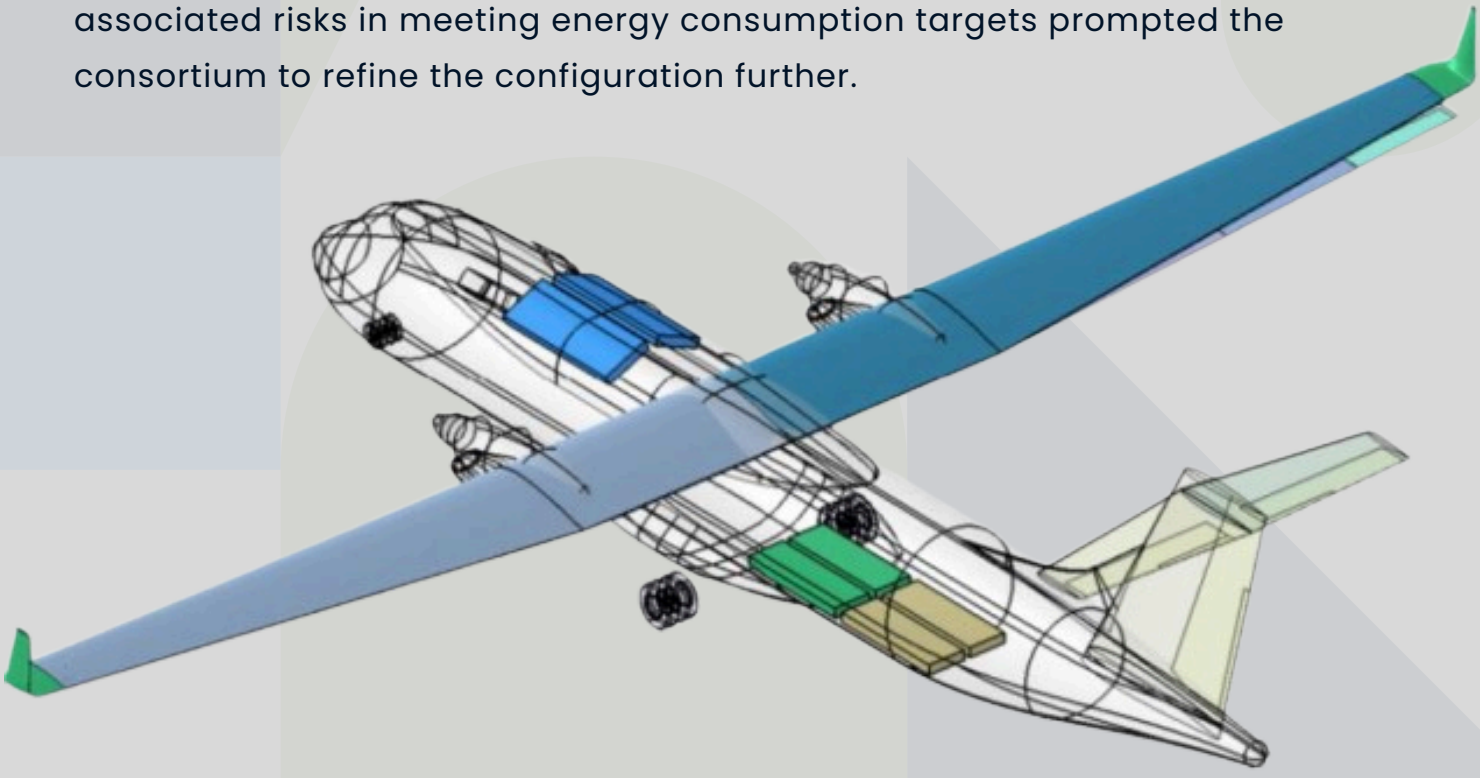
UCB Vertical Empennage

Systems Integration and Battery Trade-Off Studies

One of the most impactful achievements of this period has been the extensive systems integration and trade-off studies carried out on battery integration solutions.

Multiple configurations were carefully evaluated, considering their effects on aircraft performance, structure, systems, and operational requirements. This multidisciplinary effort, supported by contributions from other REG Trust projects, led to a data-driven decision-making process.

While an initially promising mixed solution offered several advantages, its associated risks in meeting energy consumption targets prompted the consortium to refine the configuration further.

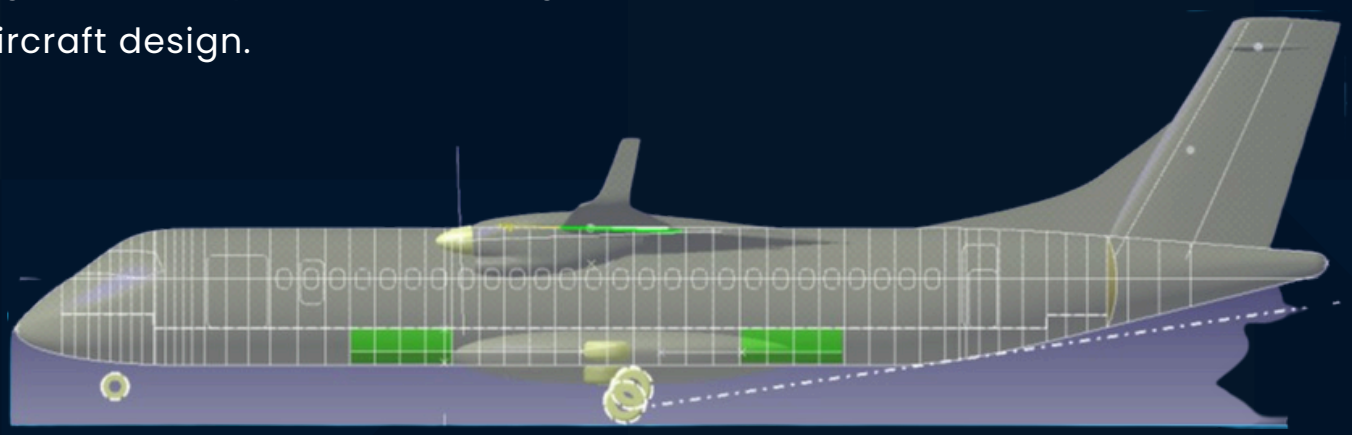


Collaboration with HERA and Updated Aircraft Configuration

This process culminated in a strengthened collaboration between the HERFUSE and HERA teams, resulting in a new aircraft configuration that enables battery storage in the underfloor area.

The updated design introduces a modified circular underfloor cross-section, a redesigned fuselage nose profile, and a new Karman configuration.

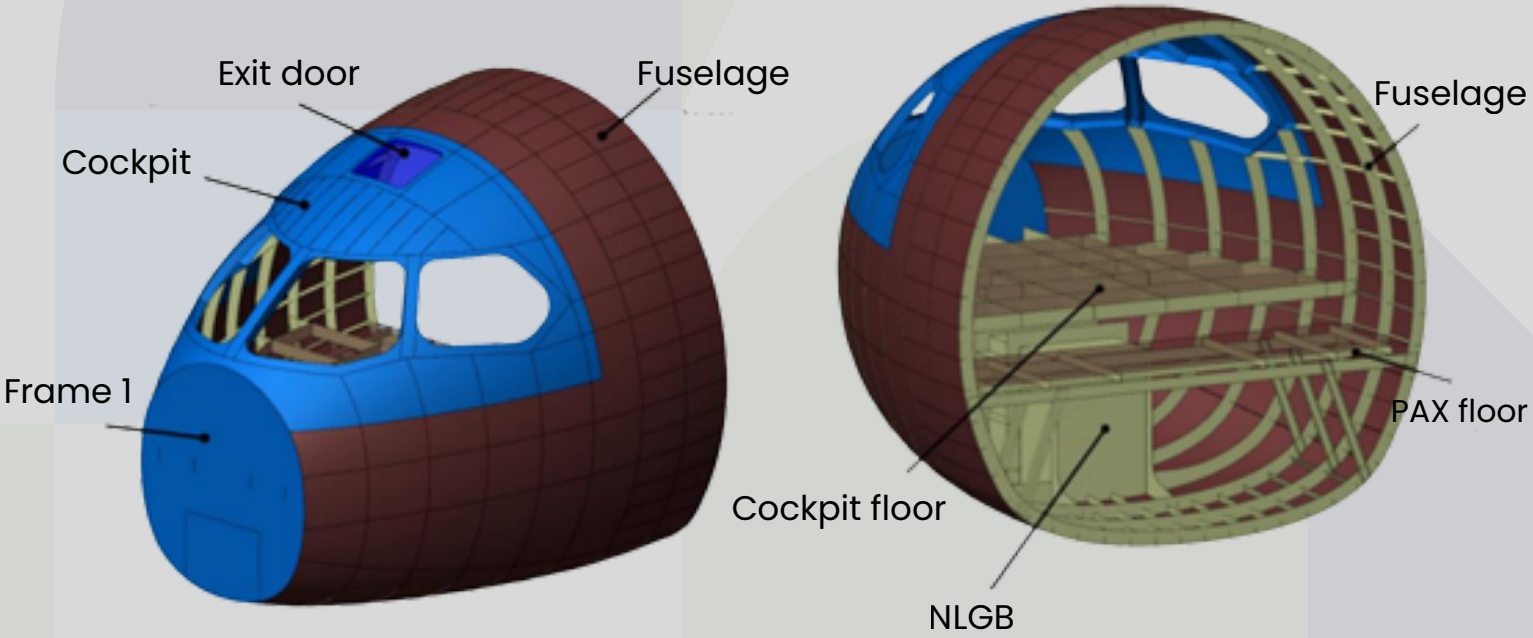
All relevant conceptual models have been revised accordingly, and the corresponding HERFUSE deliverables have been successfully submitted, marking a significant step forward in integrated aircraft design.



UCB Architecture Progress

Progress has also been substantial for the UCB architecture (Hybrid electric aircraft powered with batteries, fuel cells, and a hydrogen tank). The UCB fuselage concept has been fully defined, including cockpit design, forward fuselage panels with alternative material solutions and integrated battery storage, a central fuselage accommodating fuel cells, and a tail cone incorporating the LH_2 tank and bulkhead.

In parallel, the UCB empennage and system integration concepts have been completed, while preliminary design work for the centre barrel demonstrator is actively progressing.



Advancing Detailed Design, Testing, and Manufacturing

Beyond conceptual design, HERFUSE is now firmly advancing into detailed design, testing, and manufacturing.

Technology rationales and performance targets have been established, material selections finalized, and preliminary design activities initiated for both use cases.

Structural loads are now available, preliminary design reviews have been released for key panels, and component-level test strategies are in place.

Manufacturing has already begun for several components, while full-scale main items are currently under production

NEXT STEPS

With these achievements, HERFUSE is entering a decisive phase. The coming period will focus on validation, testing, and further integration, bringing the project closer to demonstrating scalable, certifiable solutions that support cleaner, more efficient regional aviation.

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