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H³Dynamics

H3 Dynamics Selected to Supply European Union Funded Clean Aviation Program, HyPoTraDe.



Caption: “UNIFIER19 concept, courtesy of Pipistrel”

Toulouse, August 27, 2024 – Toulouse-based aviation-focused fuel cell developer [H3 Dynamics](#) has been selected by the European Union-funded Clean Aviation research project [HyPoTraDe](#) to supply its new class of aviation-grade fuel cell systems.

The HyPoTraDe project aims to design, assemble, and ground-test a set of 500kW modular fuel cell-battery hybrid-electric distributed electric propulsion (DEP) powertrain architecture that can later be expanded into the megawatt (MW) class.

Funded by the Clean Aviation joint undertaking of the European Union, HyPoTraDe is a consortium led by aircraft manufacturer, Pipistrel, a Textron Inc. company, in partnership with Honeywell International, Netherlands Aerospace Center (NLR), Fraunhofer Society, as well as University of Stuttgart and Delft University of Technology.

The HyPoTraDe program data will be used to design and integrate hydrogen-electric powertrains for propulsion into CS-23 category light aircraft (<19 seaters) including commuters. The program will explore new ways of using the waste heat of the fuel cell to increase the efficiency of the

complete system, as well as test the powertrain in flight relevant conditions, emulating a flight altitude of 15,000 to 25,000 feet.

During the HyPoTrade project, a digital twin also will be created and validated through data gathered during the test, to facilitate an accurate prediction of the performance of future scaled powertrains. Thus, helping to fulfil the ambitious goals of the Clean Aviation Program for entry into service of regional and short-range hydrogen-powered aircraft in 2035.

Having announced its collaboration with [Airbus on a 0.5MW hydrogen-electric power system](#) and its partnership with LYTE Aviation on a [40-passenger hydrogen-electric VTOL](#), H3 Dynamics is now supporting the EU-funded HyPoTraDe consortium by providing its aviation fuel cell expertise and guiding the commissioning and tests.

Some of the consortium members participating in the HyPoTraDe program have prior experience with the performance of H3 Dynamics advanced fuel cell solutions. TU Delft set [a new Guinness World Record](#) with H3 Dynamics's aerospace-grade fuel cells to achieve 2,499km on just 0.95kg of hydrogen – a first place finish at the Shell Ecomarathon competition finals in 2023. H3 Dynamics also supplies TU Delft's [AERODELFT Liquid Hydrogen Aircraft program](#), which has designed its [first liquid hydrogen-electric power train](#) on a scaled-down version of hydrogen aircraft.

Today, H3 Dynamics provides a full line up of advanced hydrogen solutions across the aviation value chain, from aircraft propulsion power to airport-based ground equipment solutions. To complement downstream hydrogen aviation use cases, H3 Dynamics is now also launching a new generation of [low-cost hydrogen production modules for airports](#). These same modules will also address the production of sustainable aviation fuels.

H3 Dynamics has been focused on enhancing its delivery capabilities from Toulouse, Austin and Singapore, with plans to accelerate a dedicated production line for high-performance solutions for the global aviation sector in Europe as well as in the Middle East.

About H3 Dynamics www.h3dynamics.com

H3 Dynamics is accelerating the world's transition to zero-emission aviation by bridging the gap between hydrogen technologies and aerospace requirements. The company is an active contributor at EUROCAE Working Group 80 and Alliance for Zero Emission Aviation Working Group-4 in Brussels, and is supporting the drafting of a fuel cell certification strategy for both the European Union Aviation Safety Agency (EASA) and Federal Aviation Administration (FAA). The company offers a broad range of leading-edge upstream and downstream hydrogen solutions to a diverse range of original equipment manufacturers, airports and enterprise clients worldwide – from light aviation to CS25, as well as for eVTOL, airships and unmanned system integration. The company is a recipient of the Monaco Hydrogen Prize 2023 in partnership with NEOM ENOWA, member of the Paris Air Mobility Alliance, and Aerospace Valley in Toulouse.