

The Airbus logo is displayed in a white box. It consists of the word "AIRBUS" in a bold, blue, sans-serif typeface.

Within GOLIAT, Airbus acts as a coordinator and leads five work packages related to:

- the development and testing of an aircraft-based LH2 refuelling system;
- the demonstration of the aforementioned refueller;
- standardisation and certification;
- project management;
- dissemination, communication and exploitation.

Airbus pioneers sustainable aerospace for a safe and united world. The company constantly innovates to provide the most efficient and technologically-advanced solutions in aerospace, defence, and connected services. In commercial aircraft, Airbus offers the most modern and fuel-efficient airliners. Airbus is also a European leader in defence and security and one of the world's leading space businesses. In helicopters, Airbus provides the most efficient civil and military rotorcraft solutions worldwide. Airbus approaches sustainability by respecting the planet, valuing people and enabling prosperity. These guiding principles are embedded in its operations and activities.

With the ZEROe project, the company aims for a hydrogen-powered aircraft to enter into service by 2035.



Chart Industries, Inc. has a combined 158 years of hydrogen experience, from liquefaction to storage and transport, for both gaseous and liquid applications to end use.

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Consequently, through this experience, expertise and proven track record, Chart is purposely positioned as the partner of choice for companies and consortia looking to develop and accelerate the hydrogen transition at every stage along the value chain. Chart believes that in order to decarbonize the heavy duty transportation sector, liquid hydrogen infrastructure will be required and that GOLIAT is a key step to accelerate its development by bringing together multiple industry participants with complementary expertise.

Chart is already developing and delivering liquid hydrogen solutions for heavy haulage vehicles, ships and trains. With the same technology transferable to aircraft, Chart brings experience with safety, certifications and scale. Beyond the on-board hydrogen fuel tanks, Chart is also uniquely positioned to provide the refuelling infrastructure, including the refuelling stations and the cryogenic trailers and/or ISO containers that will create the virtual pipeline from the source to end-use locations.



H2FLY is a global leader in the field of hydrogen-electric powertrain systems for aircraft. In 2016, the company made history with the successful flight of the HY4, the world's first hydrogen-electric passenger aircraft. In 2023, it became the first company to complete the world's first piloted flight of a liquid hydrogen-powered electric aircraft. The company is focused on the commercialization of its technology with the goal of supplying hydrogen-electric powertrain systems for use in a variety of aircraft applications soon.

H2FLY recognizes the necessity of developing a hydrogen ecosystem concurrently with the advancement of its powertrain technology. H2FLY is leading the demonstration of liquid hydrogen aircraft ground operations in the GOLIAT project, with the HY4 serving as the testbed aircraft.

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Rotterdam The Hague Airport (RTHA) is a regional airport in The Netherlands and part of the Royal Schiphol Group. RTHA is designated as "field lab" to accelerate innovation and sustainable aviation. The airport is fully committed to fulfil these tasks by investing and contributing to several European projects (GOLIAT, TULIPS, ALBATROS, NEEDED) and facilitate the start and scale up of hydrogen-powered and battery-electric aviation. Its main contribution within GOLIAT is the set-up of a feasibility study for the LH2 aircraft ground operation demonstrations at the involved airports: Stuttgart, Lyon and Rotterdam.



In the GOLIAT project, Delft University of Technology (TU Delft) leads developments and a dedicated work package focused on H2 supply and demand modelling at airports and the related techno-economic assessment. Furthermore, TU Delft performs computational modelling of airport ground operations related to the demonstrations considered in GOLIAT.

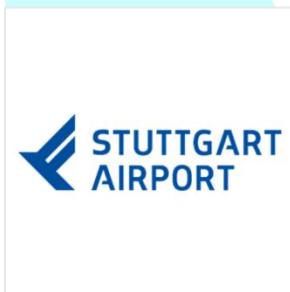
TU Delft is the oldest and largest technical university in the Netherlands. With over 26 400 students and 4 460 scientists, it is an establishment of both national importance and significant international standing. The Faculty of Aerospace Engineering is one of the eight faculties of TU Delft and one of the largest north European faculties devoted entirely to aerospace engineering. The education and research activities are supported by excellent and extensive laboratory facilities, including a high-fidelity flight simulator. Collaborations with numerous international and multinational industries ensure that the Faculty remains at the forefront of the latest developments in the aerospace industry.

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Leibniz Universität Hannover (LUH) is represented in the GOLIAT project by the Institute of Electric Power Systems (IfES). Its main area of inquiry will be the design and cost-effectiveness of the liquid hydrogen (LH2) supply for airports. The IfES is home to specialised knowledge on the modelling, optimisation and technical-economic evaluation of LH2 supply chains and refuelling systems for aviation. LUH's main contributions will therefore focus on the calculation of LH2 fuel costs at airports, the comparison of the cost-effectiveness of different hydrogen supply chains and the detailed examination of the costs and sensitivities of LH2 refuelling systems. These analyses will enable a better understanding of the infrastructure and accompanying investments required in future. They are therefore an important contribution to a more climate-friendly future.

Leibniz University Hannover is the second largest university in Lower Saxony, Germany, with around 27 200 students. More than 3 100 scientists work on nine faculties with more than 150 institutes. The university offers a wide range of study opportunities with around 84 study subjects - from engineering and natural sciences, architecture and environmental planning, law, social sciences, economics and business administration to the humanities. In research, international and interdisciplinary aspects of core topics - biomedical research and engineering, quantum optics and gravitational physics, optical technologies, production engineering, interdisciplinary studies of science and academia, energy research and teacher training - are continuously being expanded.



Stuttgart Airport accommodates over 9 million passengers annually. Approximately 55 airlines offer flights to more than 100 destinations worldwide. Located in one of Europe's most economically robust regions, the airport serves as a crucial mobility provider for both individuals and businesses traveling to and from Baden-Württemberg. Stuttgart Airport is acutely aware of its responsibility towards the environment, neighbouring communities, and society. The airport is

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committed to becoming one of the most efficient and sustainable airports in Europe, known as Fairport STR.

Within GOLIAT, the handling of liquid hydrogen within the usual airport procedures is going to be demonstrated at Stuttgart Airport.



Committed to support and accelerate the decarbonation of air transport, VINCI Airports is acting to develop the use of hydrogen in airports. By 2027, the Lyon-Saint-Exupéry airport (Aéroports de Lyon) will host the demo of the GOLIAT project with a hydrogen aircraft. Meanwhile, airports operated in Portugal (ANA - Aeroportos de Portugal, SA) are also involved in the technical studies of the futures infrastructures that will be required.

Thanks to its expertise as a global integrator with more than 70 airports operated in 14 countries, VINCI Airports develops, finances, builds and manages airports by providing its investment capacity and know-how in optimizing operational performance, modernizing infrastructure and managing operations and environmental transition. VINCI Airports is the first airport operator to have committed to an international environmental strategy in 2016, to achieve the goal of net-zero emissions across its entire network by 2050.



Royal Schiphol Group is the owner and operator of Amsterdam Schiphol Airport, Rotterdam The Hague Airport and Lelystad Airport, and holds a majority stake in Eindhoven Airport. The group's airports aim to be zero-emission and zero-waste by 2030 and energy-positive and circular in the long run. They will play a leadership role in making the aviation sector more sustainable to achieve net-zero emission aviation by 2050.

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Amsterdam Schiphol Airport is very keen to push hydrogen in aviation and looks forward to sharing Royal Schiphol Group's knowledge to prepare the standardization and certification of liquid-hydrogen refuelling equipment and operations at airports.



Budapest Airport, as a responsible airport operator, is pleased to join the GOLIAT project, in line with its sustainability ambitions. Budapest Airport believes that developing a systemic and consistent approach to the introduction of hydrogen at airports is key to the green transformation and decarbonisation of aviation. During the project, Budapest Airport will support the aviation industry's adoption of LH2 transportation and energy storage solutions with its airport operations experience.