



The Mission

“ Prove and promote liquid hydrogen as an alternative to conventional fuels in aviation.”



The Team

- Founded in 2018
- 57 active students
 - 35% full time students
 - 55.000 work hours annually
 - Not just Aerospace Engineers
- 400 Alumni



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Project FS Phoenix



Project FS PHOENIX

Goals:

- To fly on gaseous hydrogen (GH₂) in 2025
- To fly on liquid hydrogen (LH₂) in 2026



The Aircraft

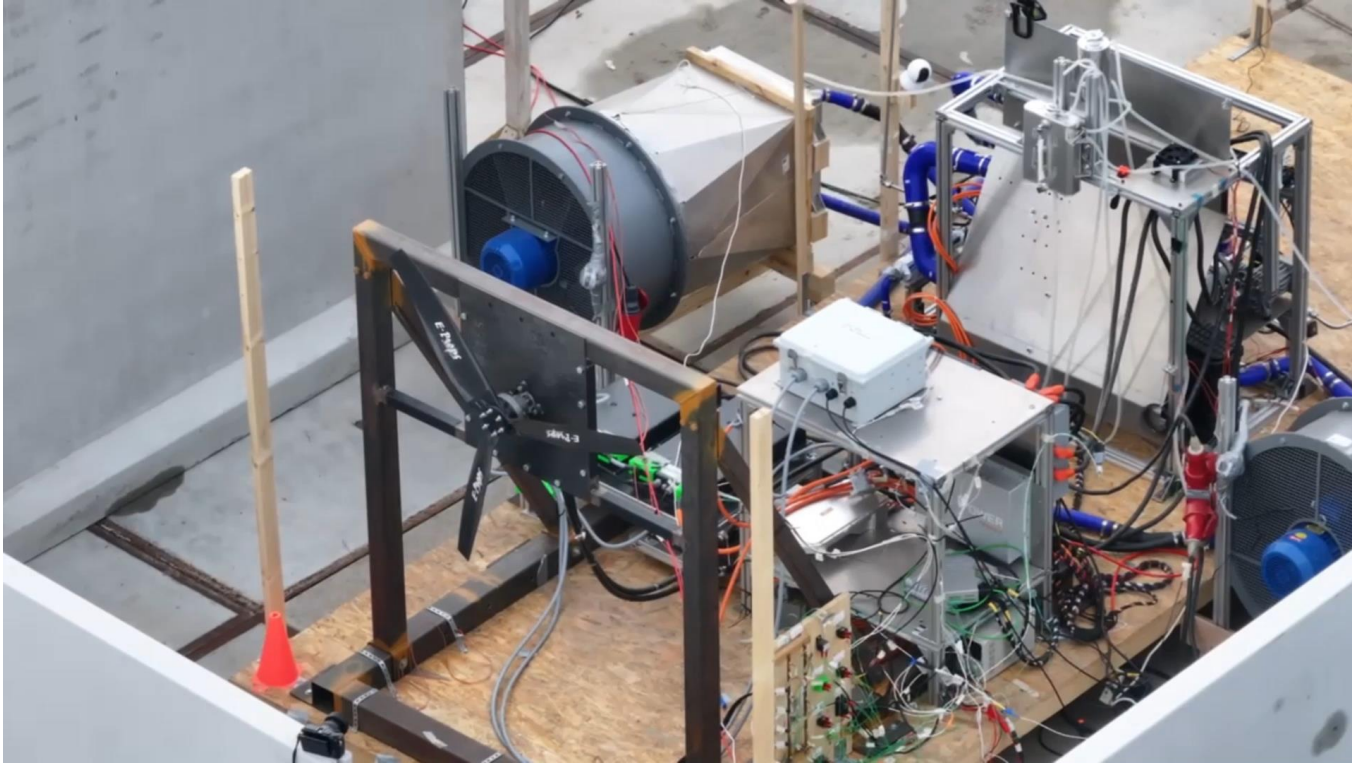
- Sling 4, Sling Aircraft
 - MTOW: 920 kg
 - Fuel cell electric vehicle
 - Maximum power: 95 kW
 - Wingspan: 9.97 m
 - Permit to Fly – CS23
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- Mass of GH2: 2.1 kg
 - Mass of LH2: 5.3 kg



Electric Taxi Test



Gaseous Hydrogen Powertrain Testbed



Upgraded Testbed



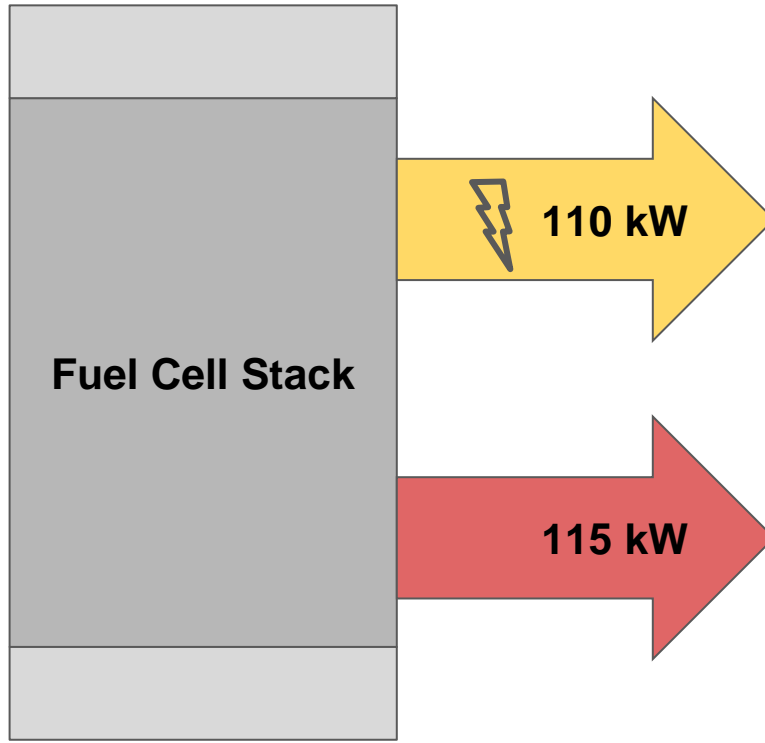
Liquid Hydrogen Scaled Testbed



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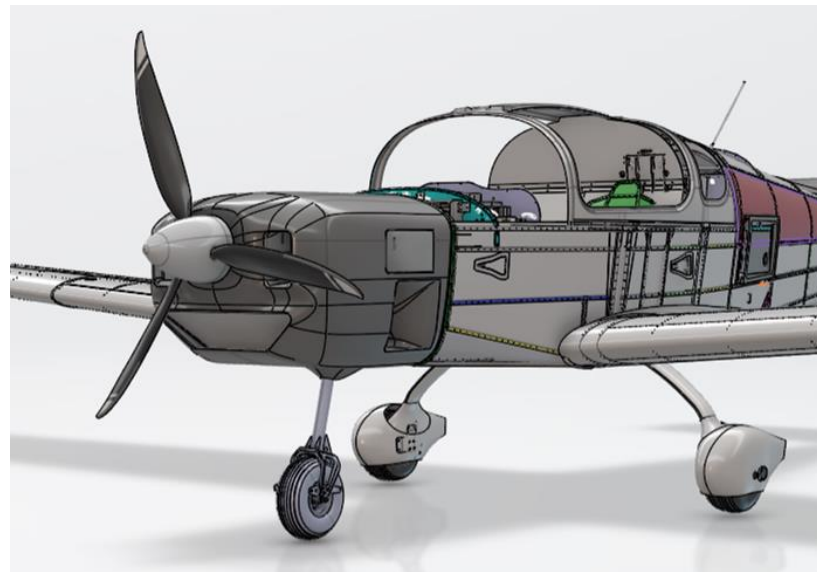
Thermal Management

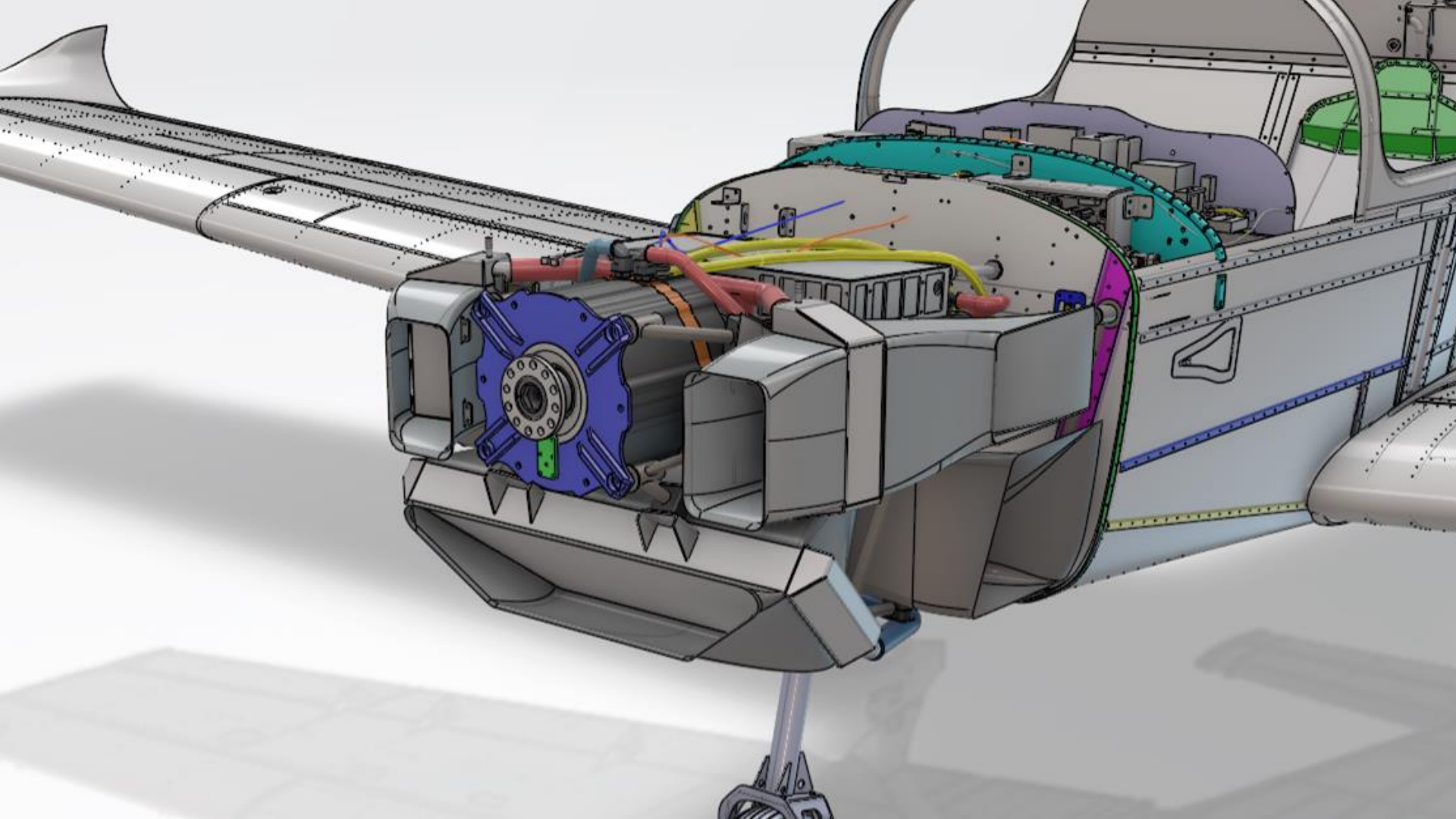


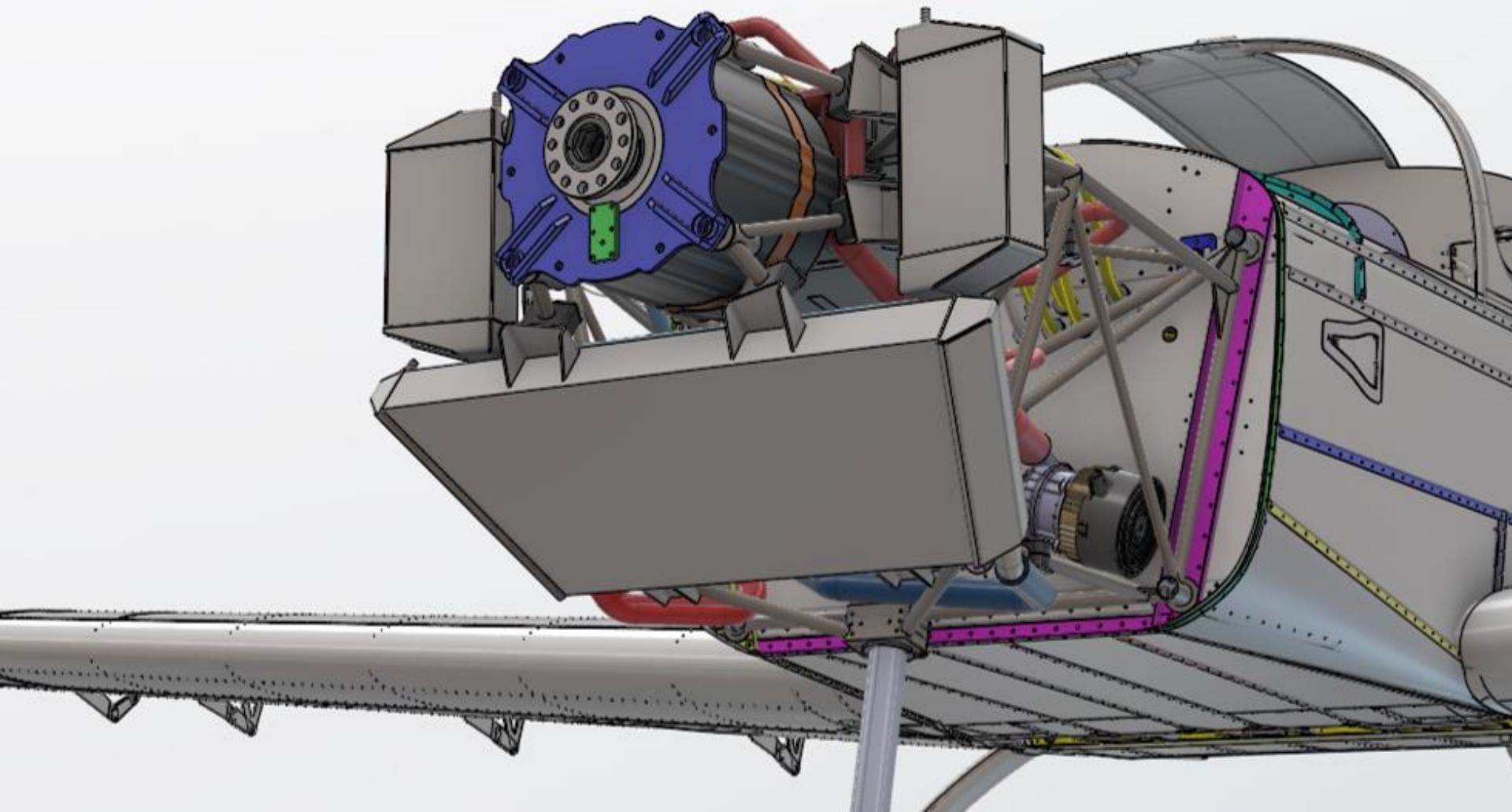


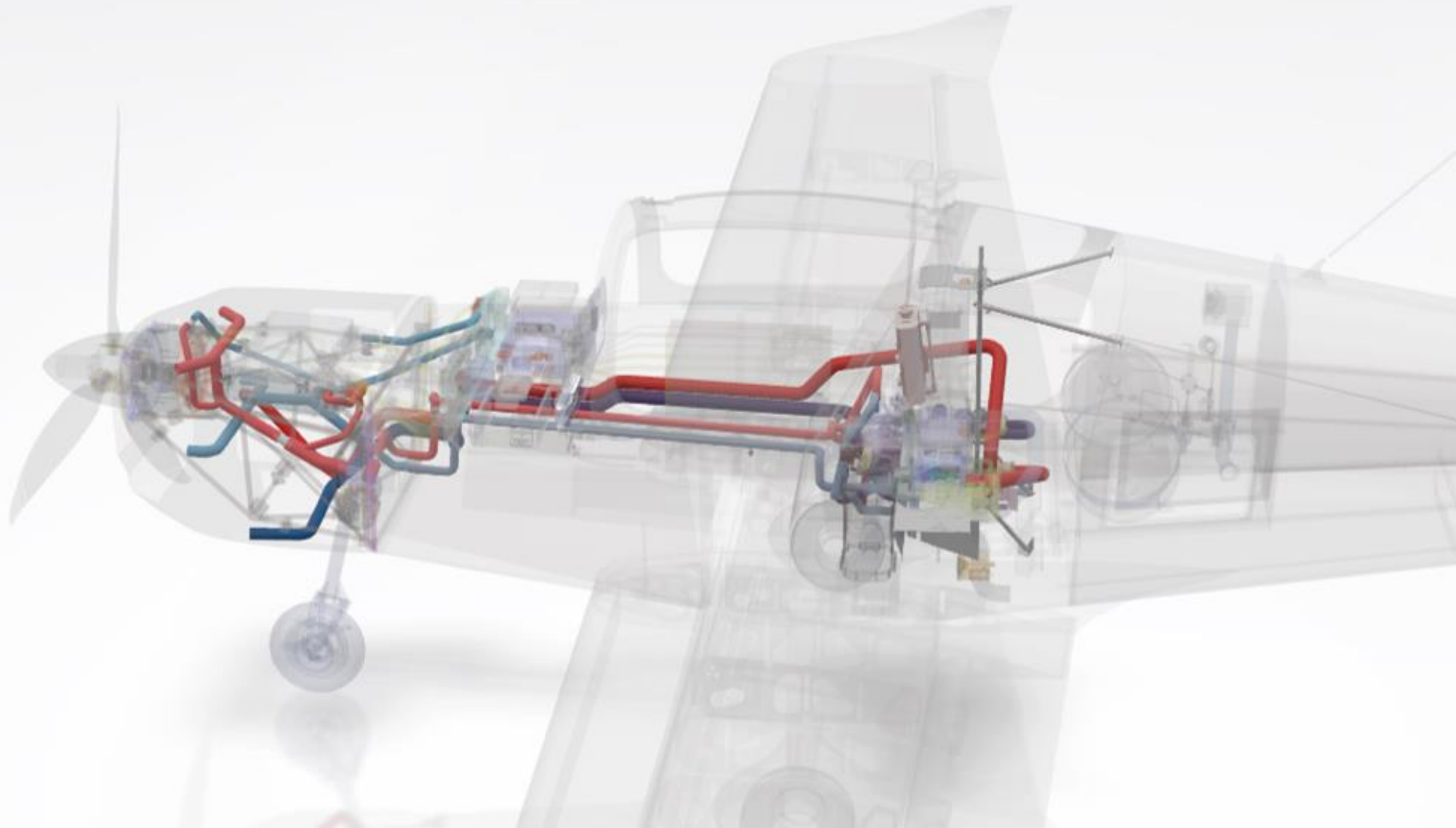
~ 49% efficiency

Temperature range 65 - 80 °C





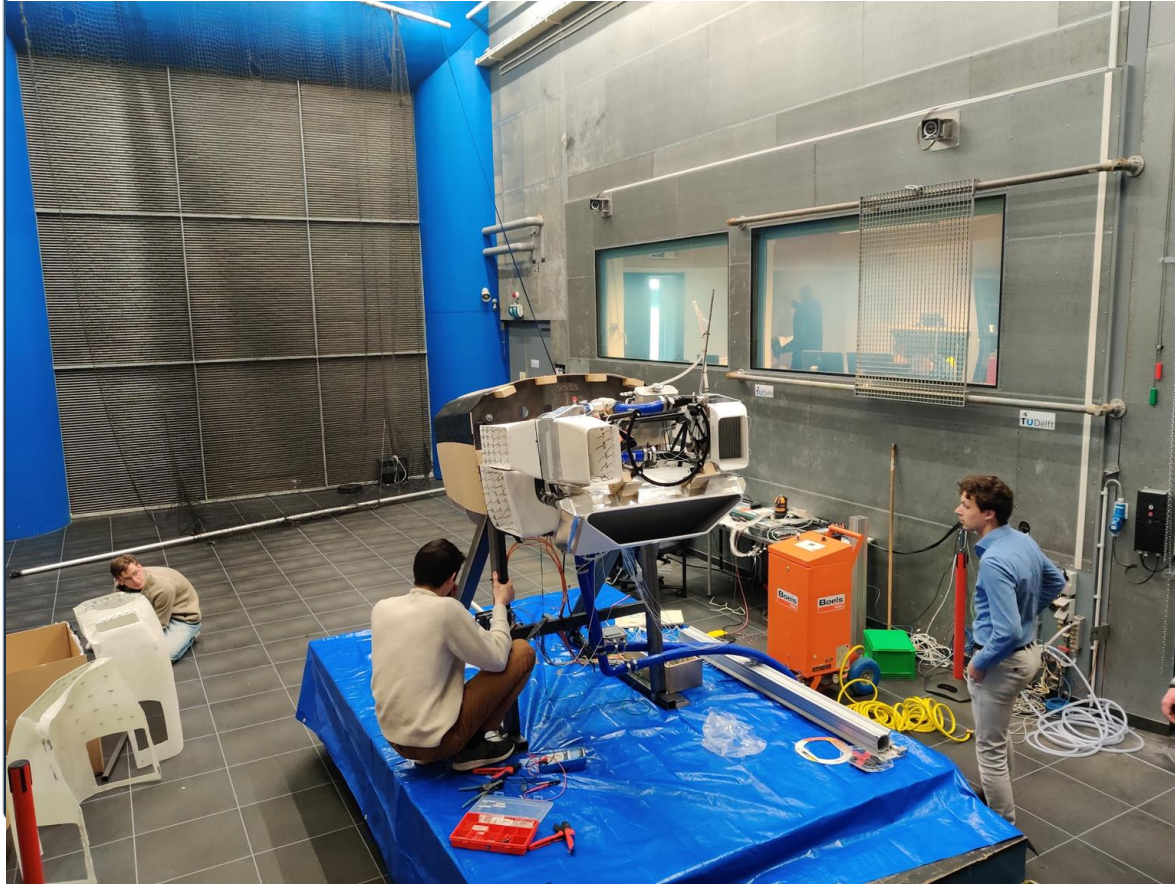




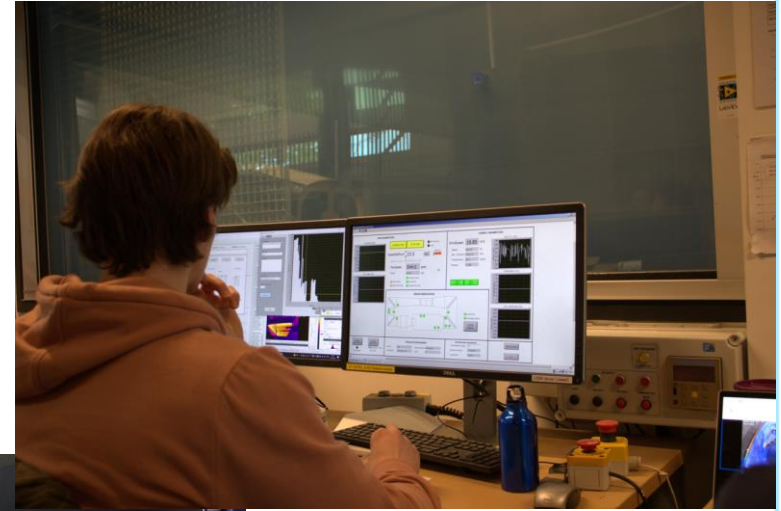
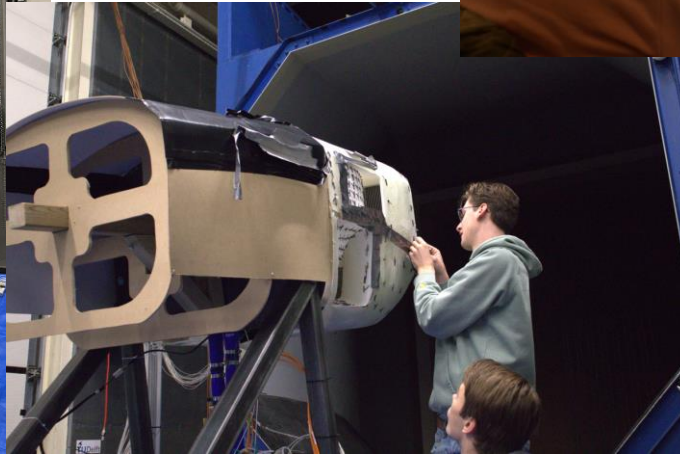
AeroDelft – TMS Challenges

- Limited space for radiators
- Optimising aerodynamic design of ducts & nose cowling
- Routing of coolant loops
- Integration into the aircraft
- Cooling requirements verification
- Integration with liquid hydrogen system

TMS Wind Tunnel Testing



TMS Wind Tunnel Testing



Further steps before first flight on GH2

- Full flight profile test on gaseous hydrogen - Winter 2024/25
- Second wind tunnel test to qualify TMS - March 2025
- System integration into the aircraft - Spring 2025
- (High speed) taxi test on gaseous hydrogen - Summer 2025

