AERO
HYDROGEN &
BATTERY SUMMIT

APUS i-2

The Hydrogen Airplane

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2025-04-08, Friedrichshafen, AERO Hydrogen & Battery Summit

APUS
Zero Emission

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www.apus-zero.com

MAIN CHALLENGE OF THE AVIATION INDUSTRY

-55%

The **Reduction of CO_2-Emissions** of the Aviation Industry until **2030** – now legally binding

EU Green Deal

Quelle: Climate Action Tracker, 2023; International Energy Agency, 2023

APUS – Location

Workshop and Offices of the **APUS Group** are located 30 km east of Berlin, with direct access to the Taxiways / Apron of the Airfield Strausberg (EDAY)

APUS Group
Lilienthalstraße 2
15344 Strausberg
GERMANY

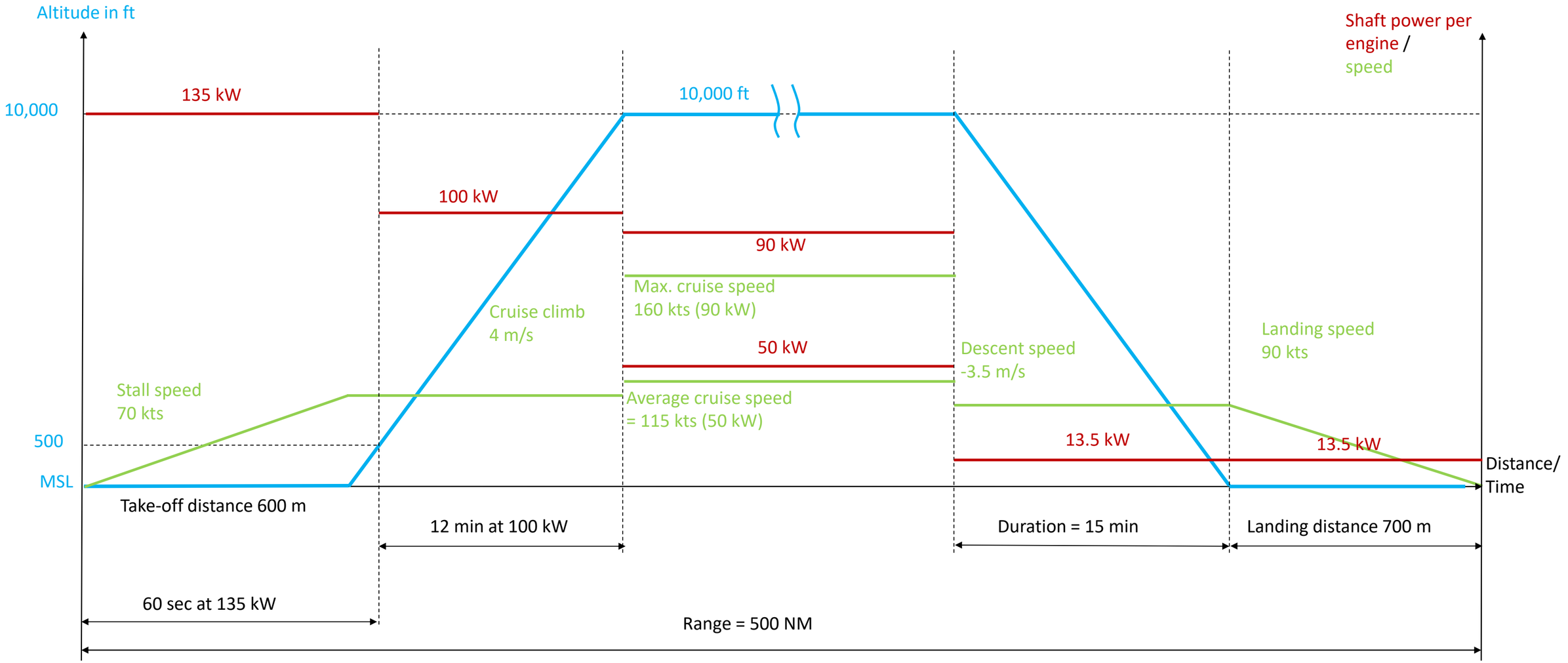
Facts – APUS Group

Founded	**2014**
Experience (Key Staff):	**65+ Years**
Approvals:	**EASA 21J / 21G / ISO 9100**
Employees:	**ca. 70**
Infrastructure:	**350 m² Offices**
	1.300 m² Workshop
	1.500 m² Test Hangar

To reach the **2050 Net-Zero-Target**,
aviation needs
Pioneering Spirit & long-term sustainable solutions

APUS is a **Catalyst**
driving **technical Excellence** in the net-zero technology

Mission


Altitude in ft
Shaft power per engine / speed
10,000
135 kW
10,000 ft
100 kW
90 kW
Max. cruise speed
160 kts (90 kW)
Cruise climb
4 m/s
50 kW
Descent speed
-3.5 m/s
Landing speed
90 kts
Stall speed
70 kts
Average cruise speed
= 115 kts (50 kW)
500
13.5 kW
13.5 kW
MSL
Distance/ Time
Take-off distance 600 m
12 min at 100 kW
Duration = 15 min
Landing distance 700 m
60 sec at 135 kW
Range = 500 NM

Meet the APUS i-2

The Zero Emission GA Aircraft

APUS i-2 is the first emission-free aircraft for daily use. It is a four-seat normal-category (CS-23) aircraft with 2,200 kg MTOM, a range of 500 NM and a maximum cruise speed of 160 KTAS – competitive performance data comparable to most modern four-seat aircraft.

Employing a hydrogen fuel cell as its primary source of energy makes APUS i-2 100% emission-free, i. e. zero CO_2, zero NOx, zero noise – nothing less than a revolution in emission-free flying! This is achieved through APUS's patented structurally integrated hydrogen storage system. It permits up to 25% higher specific energy density compared with standard hydrogen fuel tanks and ten times better energy density than battery-electric aircraft, all while avoiding the use of rare minerals that batteries employ.

Performance

Cruise	160 kts
Payload	400 kg
PAX	1+3
Range	500 NM
Service Ceiling	16,000 ft

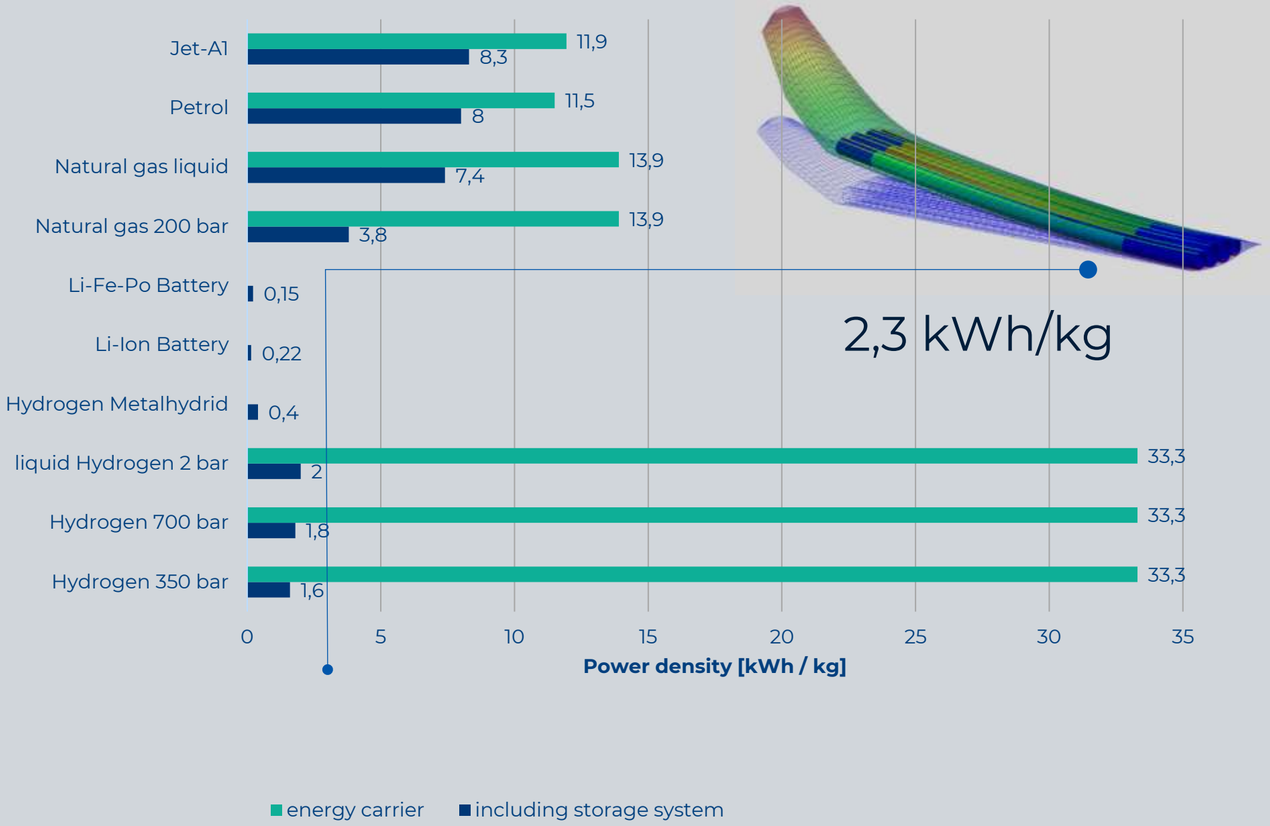
Dimensions

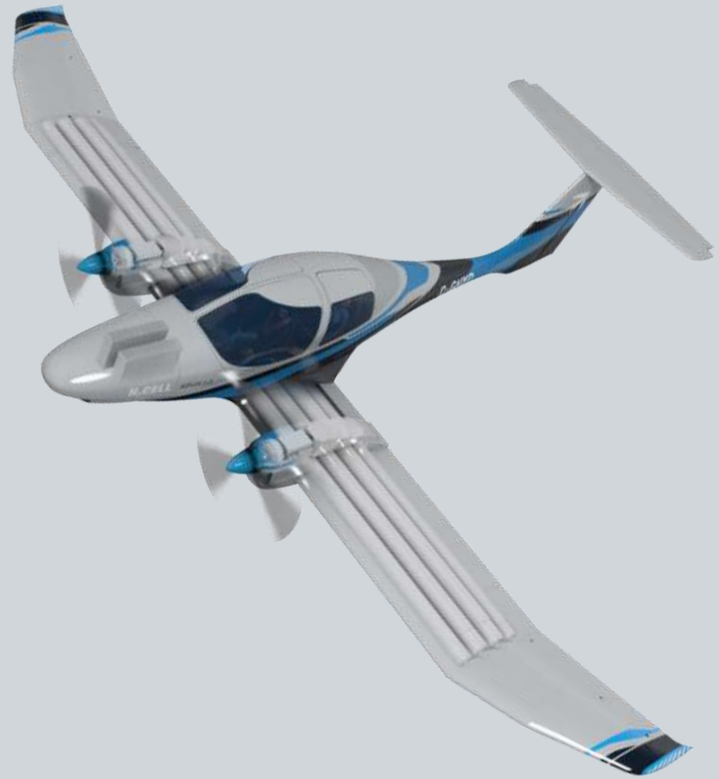
Wing Span	13.2 m
Length	8.86 m
Height	2.88 m
MTOW	2,200 kg

APUS GROUP

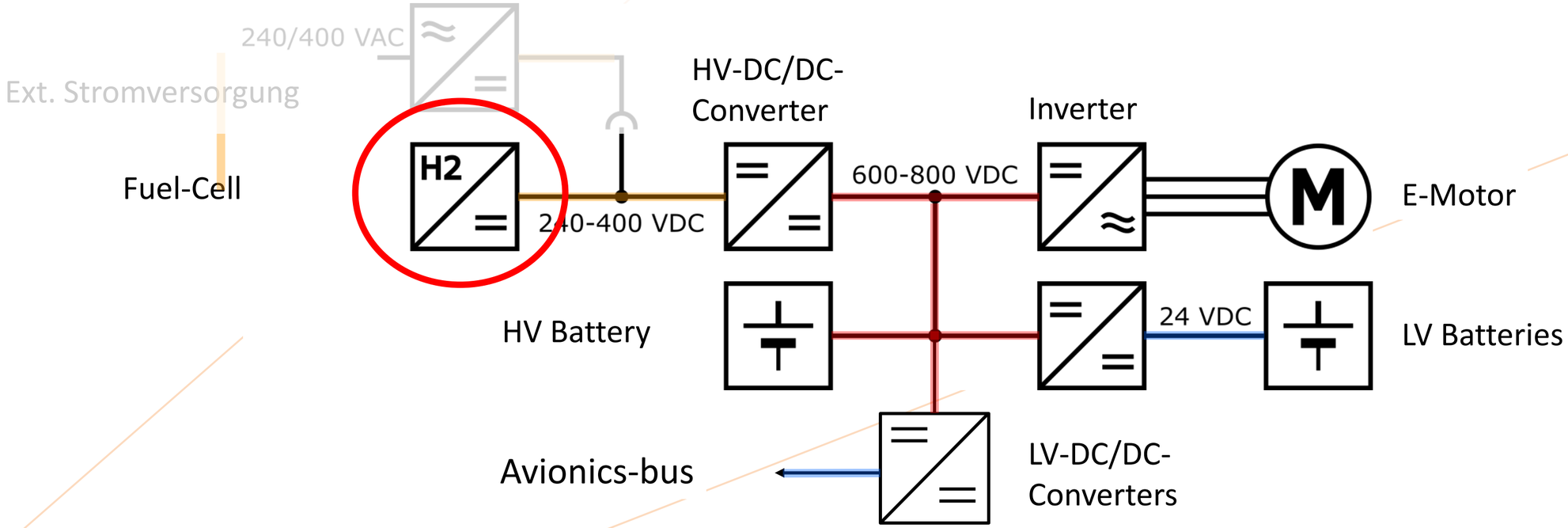
Energy Density – TUBESTRUCT ™

With APUS patented energy storage systems APUS offers best energy density worldwide.

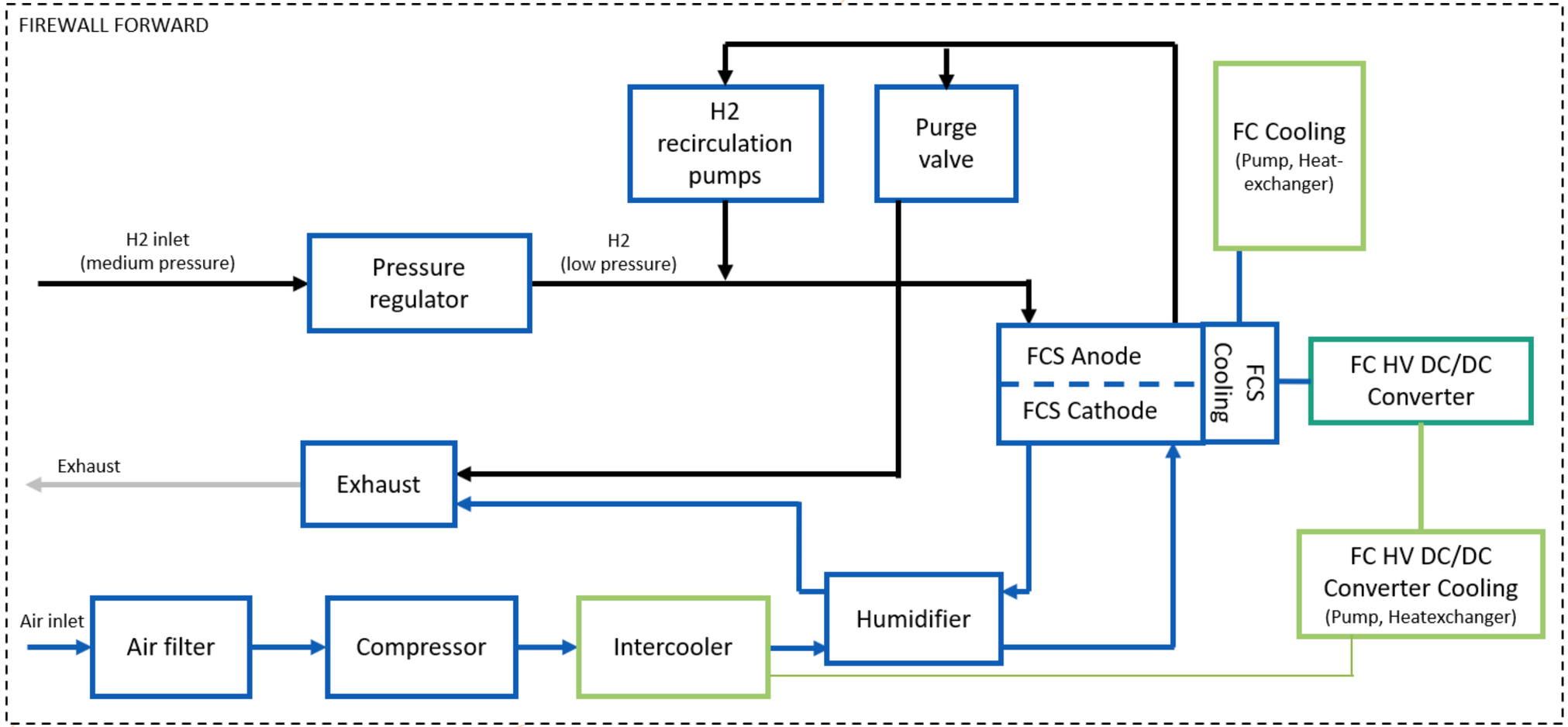




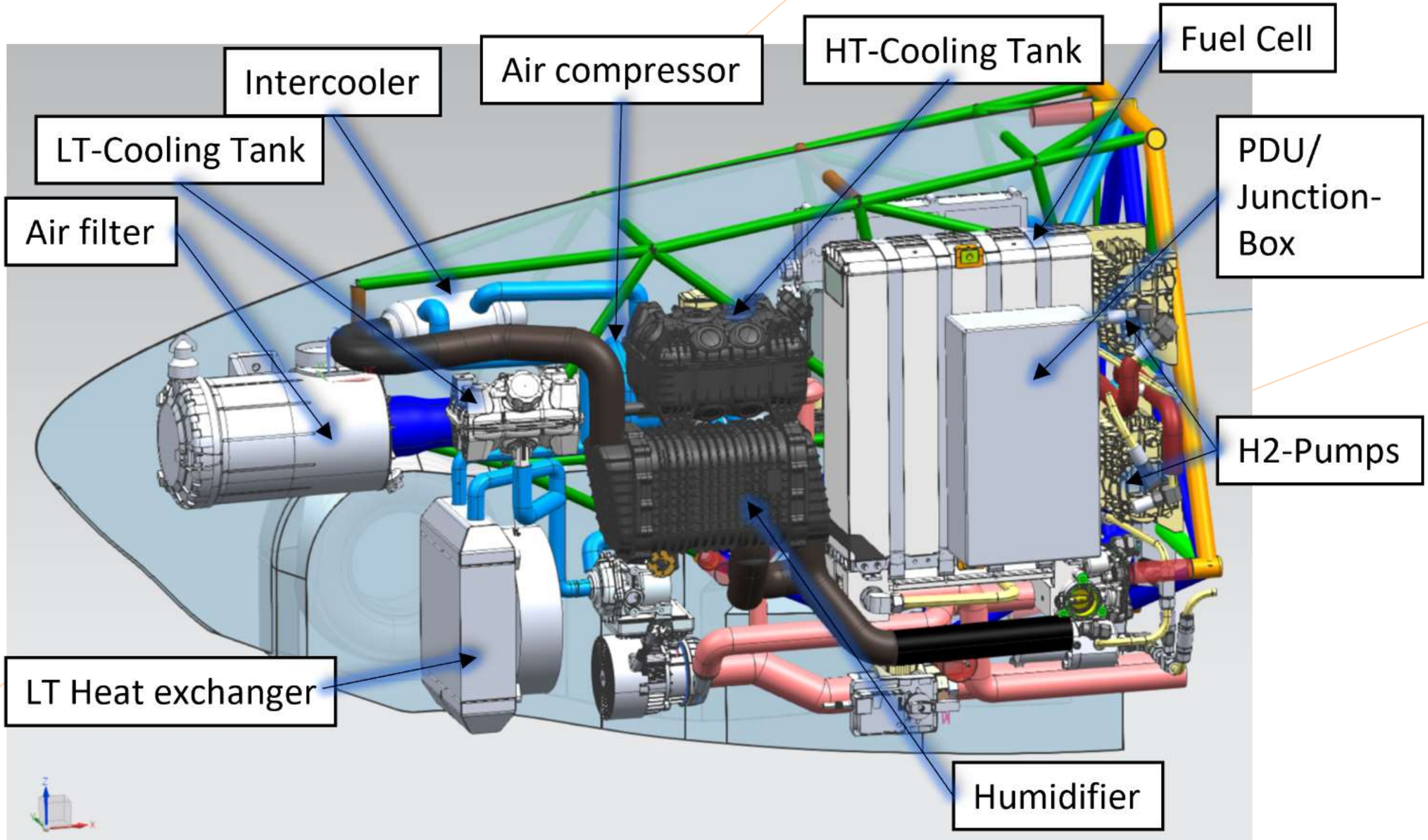
Propulsion System: Subsystems



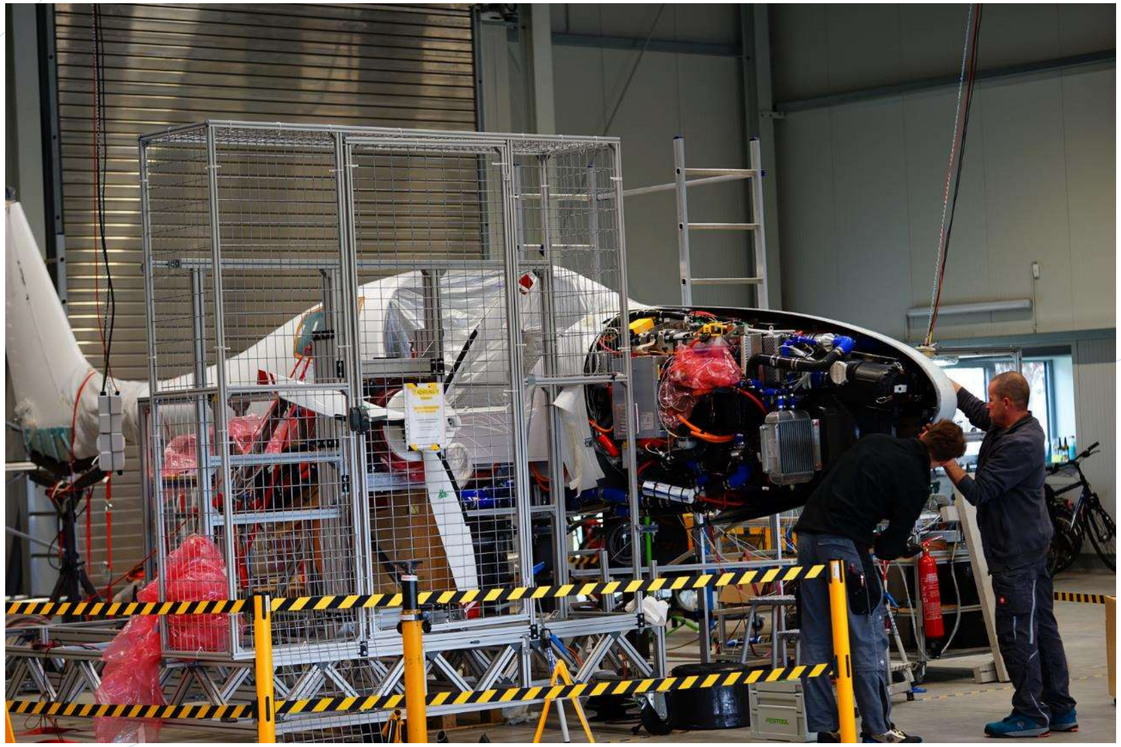
Propulsion System: Fuel Cell

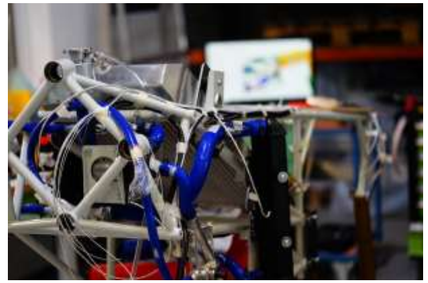


Propulsion System: FCS-Integration



IMPRESSIONS APUS I-2





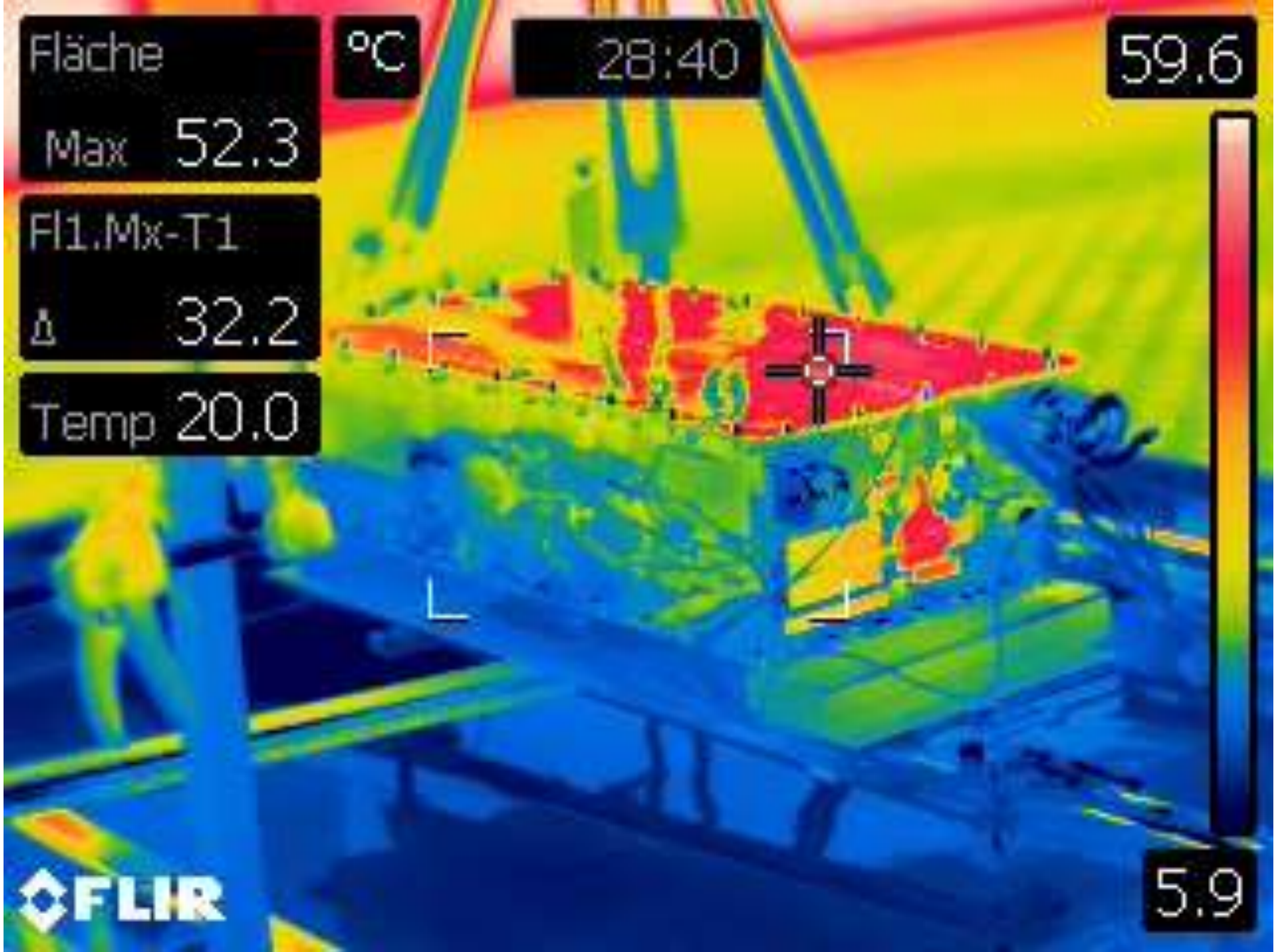
Rollout Event 06.09.2024

Test Impressions:

HV-Battery:
Thermal Runaway / Thermal Propagation

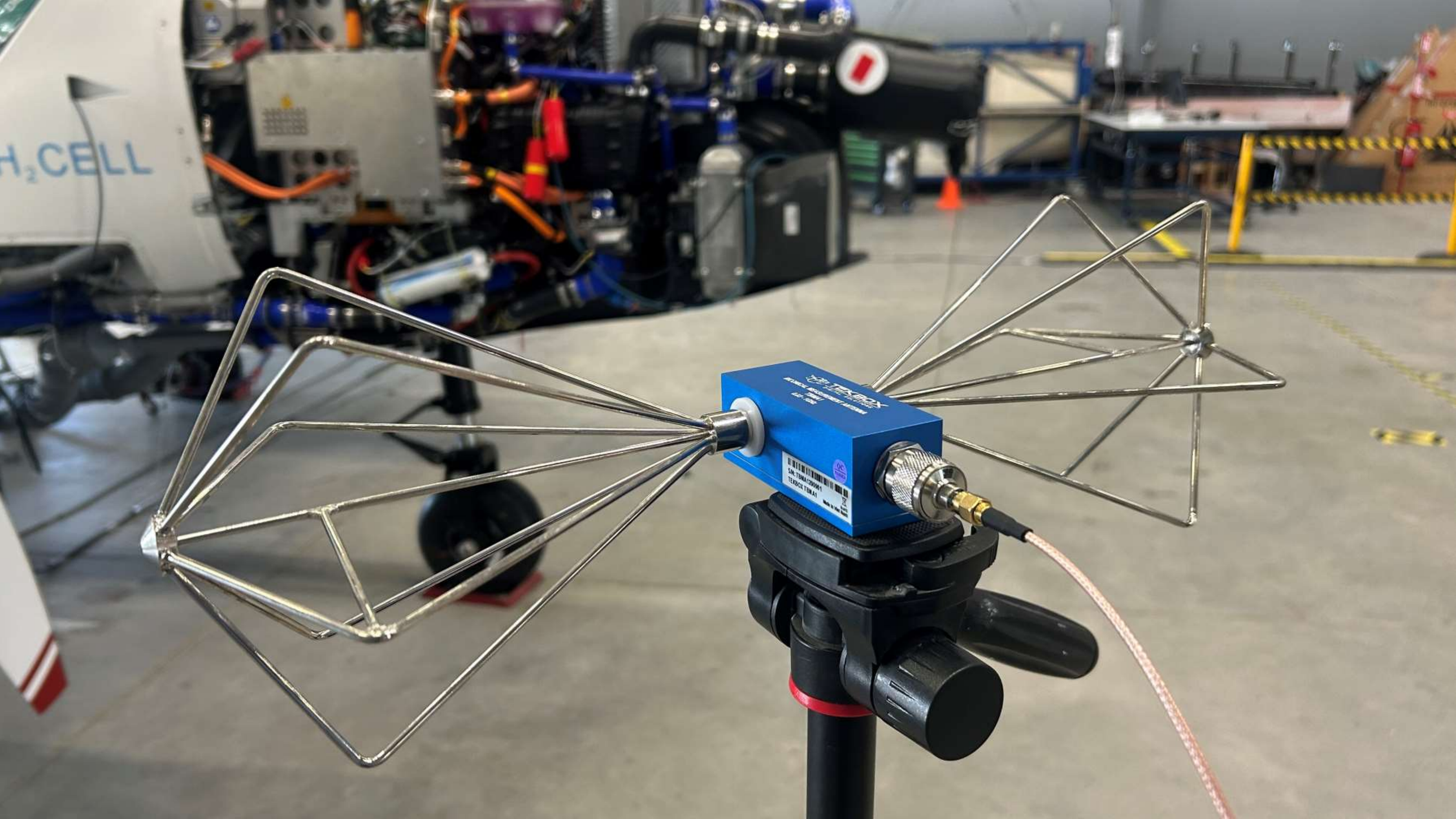

D-EOMA


Mockup only
for ground use
21
20
HV Battery BM576-600 (Mark II) - RH
GROUND USE (TR/TP-Test) ONLY
apus


Fläche
Max 52.3
°C
28:40
59.6
Fl1.Mx-T1
Δ 32.2
Temp 20.0
FLIR
5.9

Test Impressions:

Propulsion System:
EMI / Radiated Emissions: Pre-Evaluation


H2CELL
TEKBOX

Test Impressions:

Full System Run:
Fuel Cell with internal H2-Tanks


APUS
D-IHYD
APUS i-2


DAU P
DAU A
DAU 1
DAU 2
COM1
COM2
XPDR
AT-1
RPD
BEACON
USB
ANNUN
SMS
TLMTR


APUS
APUS i-2 H2CELL

Thank you!