

# Modulare Wasserstoff Antriebs- und Energieerzeugungssysteme – Fallbeispiele

H2 – Innovation Camp 2025

# Company



*Founders Team (left to right)*  
**Maximilian Wack, Daniel Mescheryakov, Silas Hofmann, Jonas Kahl**



Founded 2019 / Spinoff TU Darmstadt



3 pending patents / strong IP in  
Hardware & Software



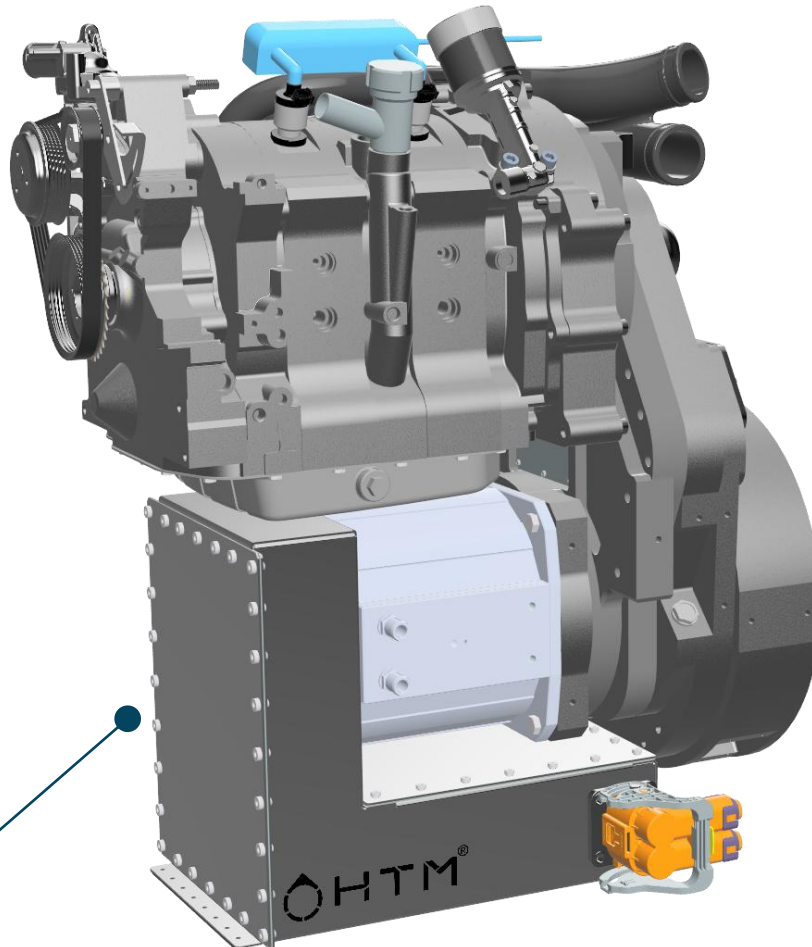
raised > 2 mio. Euro in Venture Capital



Strong Team of 15 professional  
Team Members in all Disciplines

# Technology

Rotary hydrogen  
combustion engine



Electric System

## Key benefits

- no Hydrogen quality requirements
- Low Acquisition costs
- Near zero emission
- Robust and resistant
- Modular for any use case
- High power output / power density
- Avoidance of raw materials

# Use Case

## Mobility



- On-Road & Off-Road Applications
- Cost efficient Retrofitting of existing vehicles without limitations
- Quick refuelling & scaleable range

## „Sustainable Energy Solutions“

## NEW! Energy



- Low acquisition costs
- robust & environment independent System
- supply guarantee by multi use



# Milestones

Launch of  
HTM

2019

Engine on  
Testbench

2022

Technology  
Demonstrator  
Vehicle

2023

Hamburg Airport  
Vehicle  
Conversion

2024

**NEW!** Pilot  
HyGen  
Generator

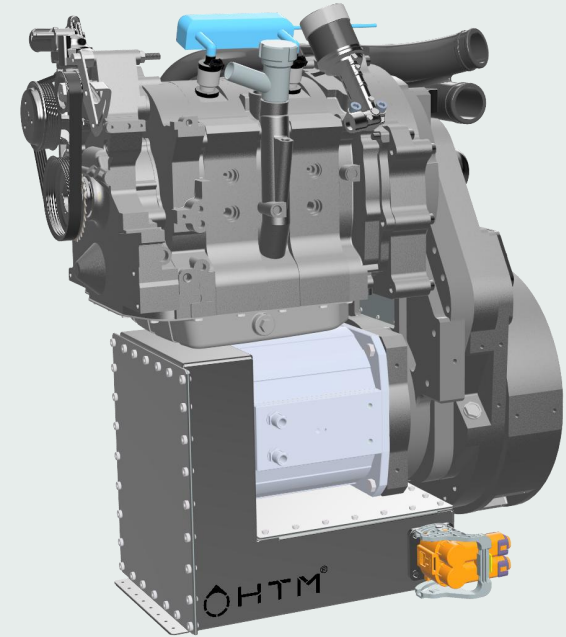
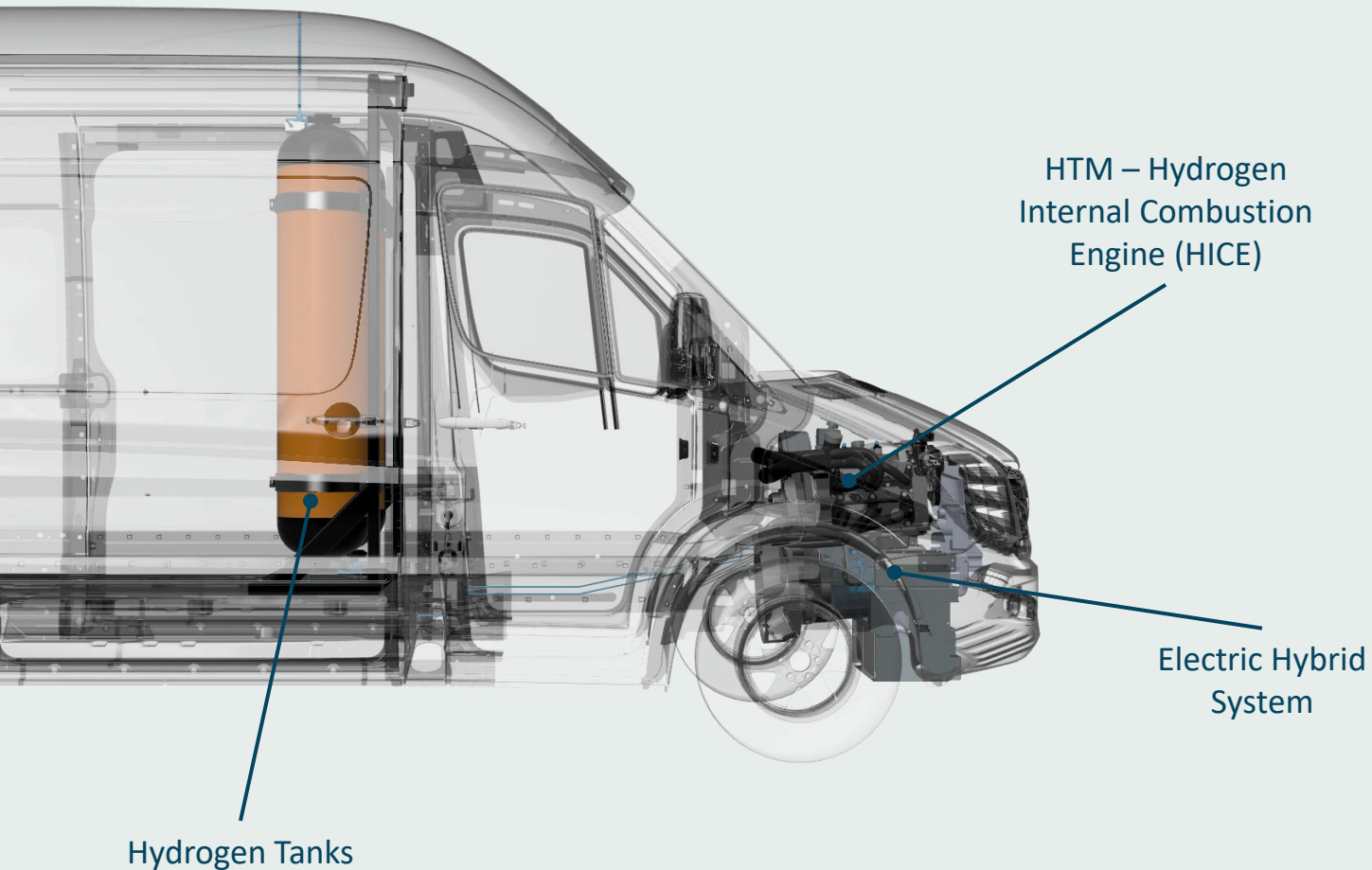
2025



# 3,5t Van retrofitting project - technology demonstrator -



# Mobility



- High flexibility in usage
- High peak loads possible
- Retrofitting possible
- 24/7 operation possible
- Fast refueling



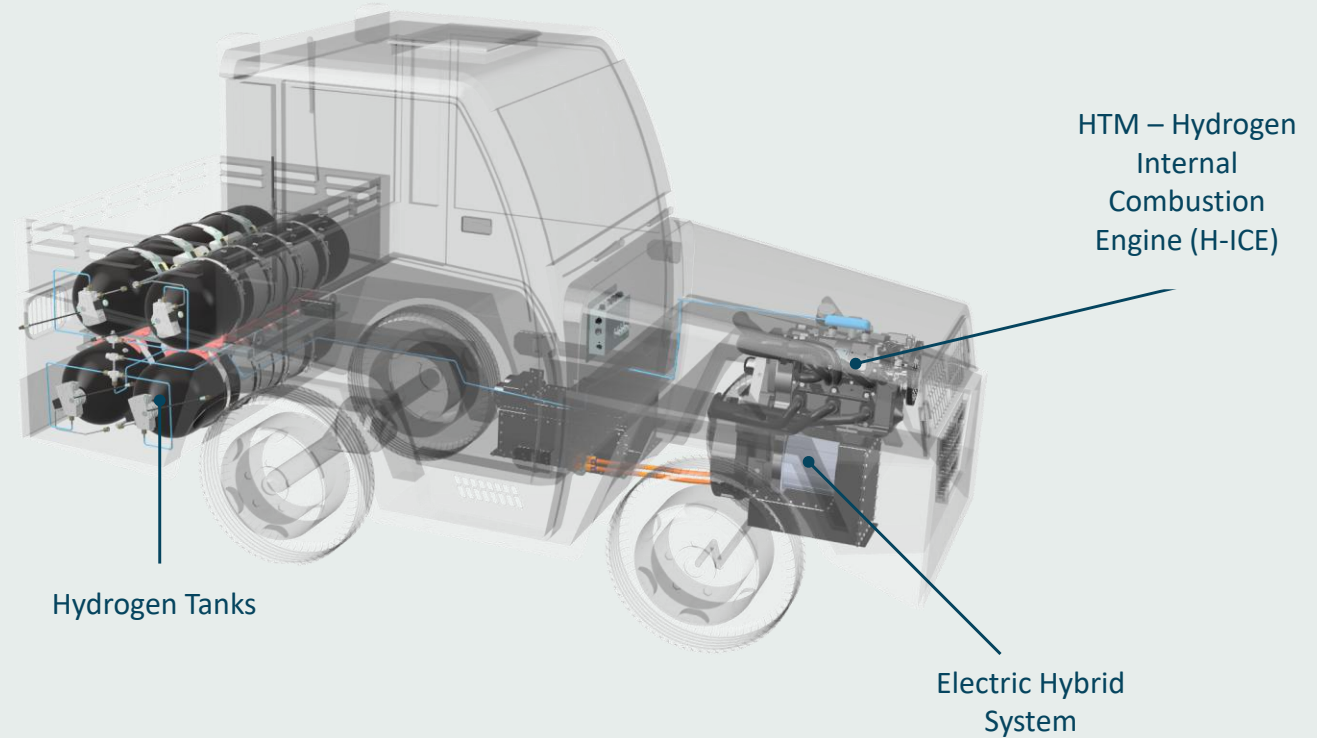
# tow tractor retrofitting project at Hamburg Airport



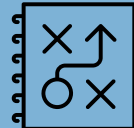
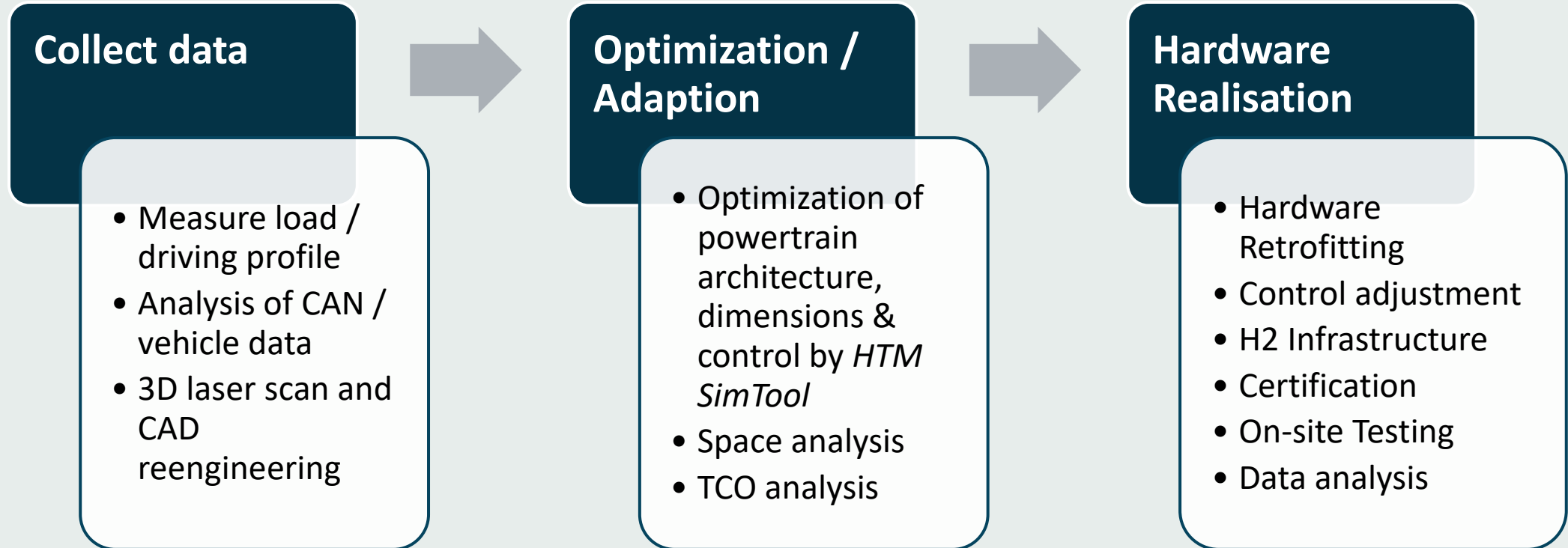


# Pilot Project

## – Retrofitting baggage tractors



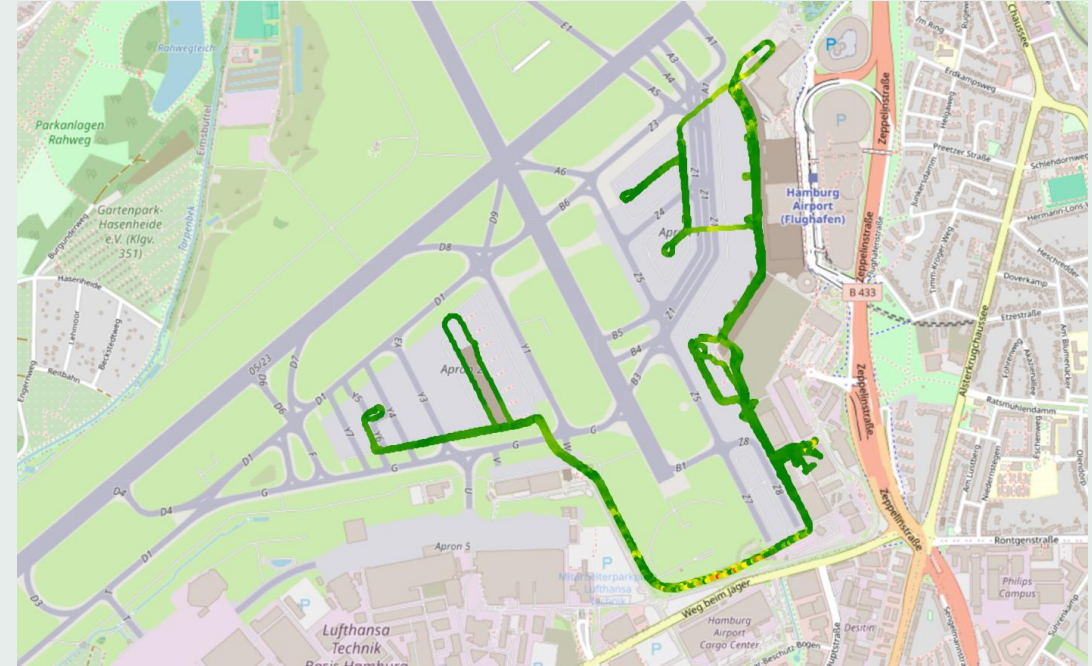
# Powertrain Adaption Process



„Individual systems for individual requirements“

# Data Collection on Airport Site

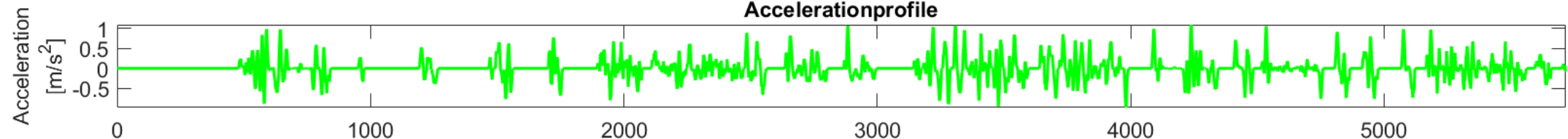
- Recording of driving and slope profiles as well as engine speed / torque profiles over a two-week measurement phase on the original CNG vehicle
- Derivation of the vehicle model and a representative driving profile



Speedprofile



Accelerationprofile





# Process of Retrofitting



Electric Machine &  
Inverter Group

Battery system



Combustion Engine





# Comissioning and internal testing at TU Darmstadt airfield



# H2 – Generator - technology demonstrator -





# Partner

**HENKELHAUSEN.**  
IHR MOTOR. IHRE ENERGIE.



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Verbrennungskraftmaschinen  
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UND WEINBAU

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