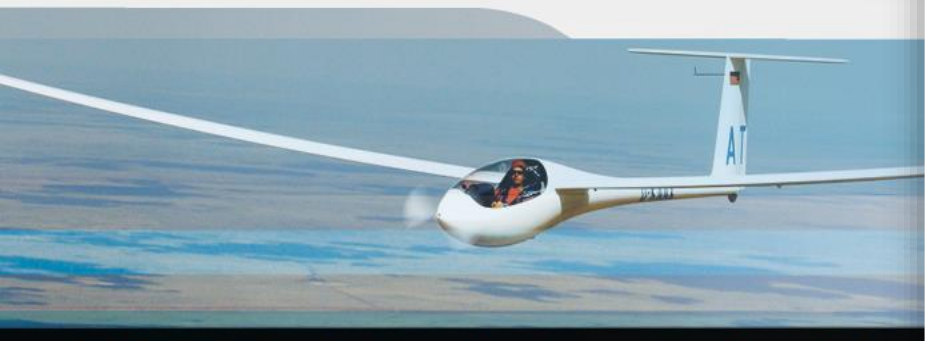
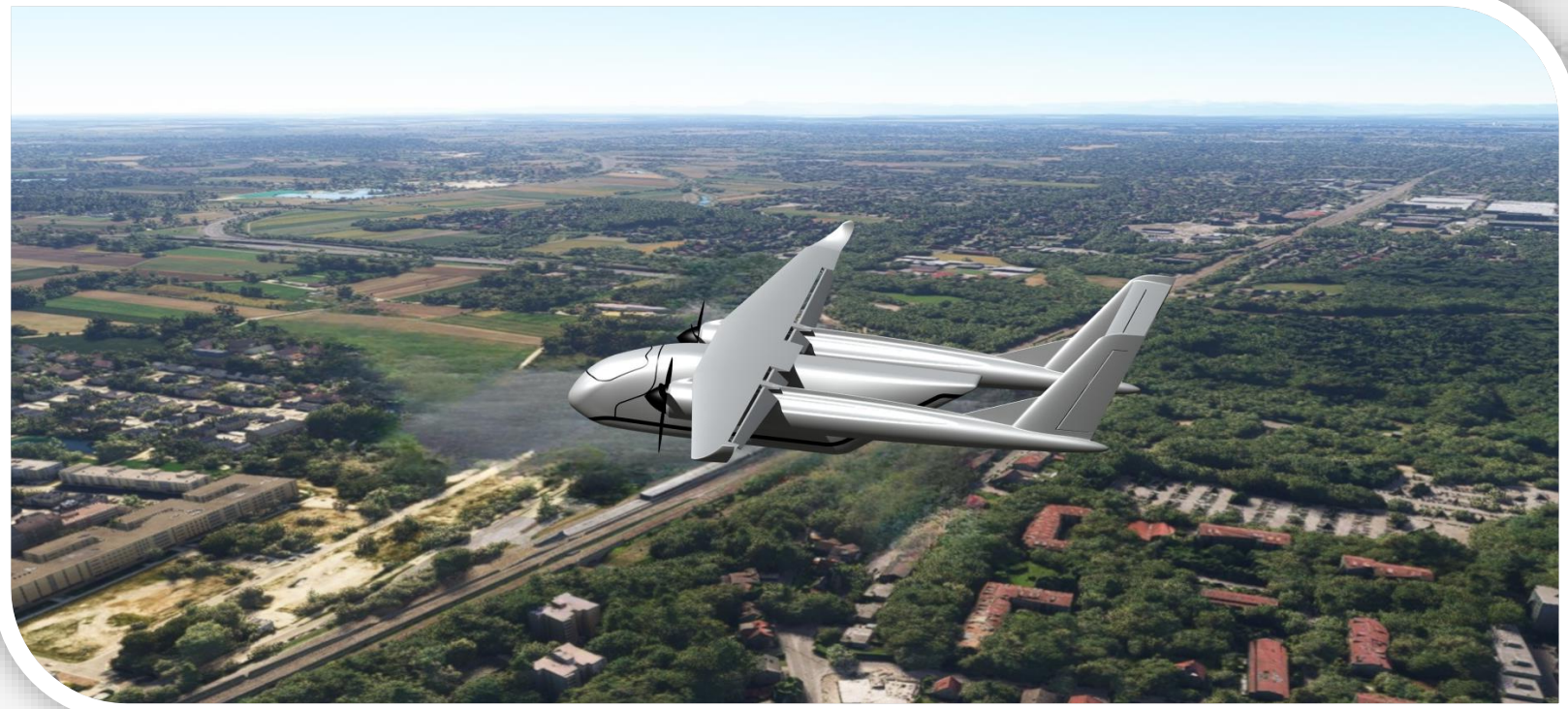
AdvanTec GmbH

HY2DRA



E-ROP electric and rotary-engined hybrid plane



AdvanTec GmbH

HY2DRA

Hydrogen-Driven Range-Extended Aircraft (UAM)

General Specifications

Wingspan: 20 m

MTOM: 2 t

Payload: 1 t, loading and unloading < 20 min.

Mission change: logistics to firefighting… < 3h

Propulsion: 2 x 475 kW electric engines

Cruising Speed: 170 knots

Range: 650–1,000 km

Take-Off Distance: < 250 m

Grass/Field Runway Capable

REX: H2/E-Fuel direct combustion system.

AdvanTec GmbH

HY2DRA

Hydrogen-Driven Range-Extended Aircraft (UAM)

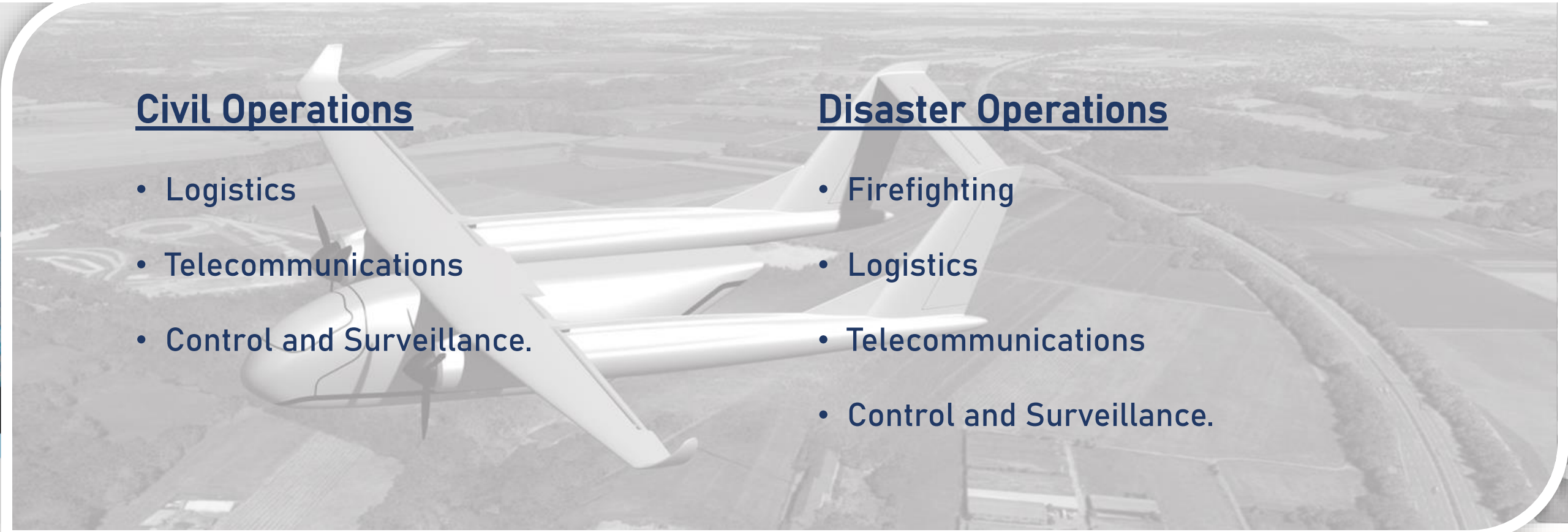
Military Operations

- Tactical Supply and Logistics
- Reconnaissance and Surveillance
- Secure Communications
- Search and Rescue (SAR).

AdvanTec GmbH

HY2DRA

Hydrogen-Driven Range-Extended Aircraft



Civil Operations

- Logistics
- Telecommunications
- Control and Surveillance.

Disaster Operations

- Firefighting
- Logistics
- Telecommunications
- Control and Surveillance.

AdvanTec GmbH

HY2DRA

Hydrogen-Driven Range-Extended Aircraft (UAM)

Investors Wanted

Market Forecast for UAVs up to 2t (west) Global Market 2024–2034:

From 2024 to 2029, the market is expected to grow from USD 17.31 billion to USD 32.95 billion, with a CAGR of 13.74% p.a.

From 2024 to 2034, growth is projected to reach USD 58.4 billion, with a CAGR of 16.4% p.a.

Spending on drone technology is expected to double worldwide over the next ten years.

This is a Blue Ocean Project – it opens up an entirely new market space with no direct competitors.

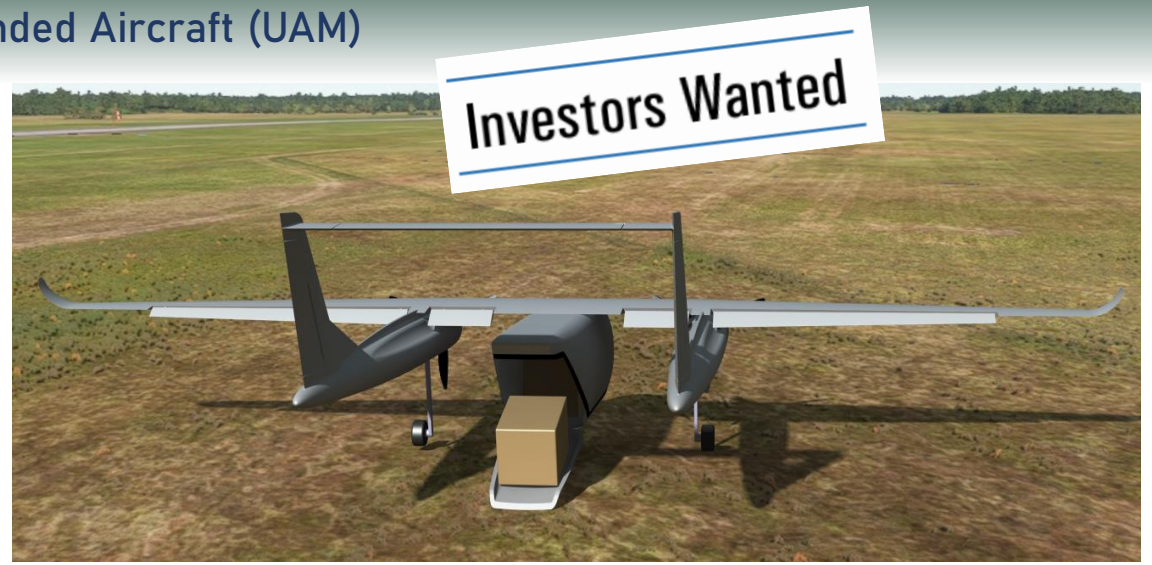
Comparable drone solutions in this scale and versatility do not currently exist.

Sources: Financial Times, December 2024 / MarketsandMarkets, September 2024 / Mordor Intelligence, 2024

AdvanTec GmbH

HY2DRA

Hydrogen-Driven Range-Extended Aircraft (UAM)



Excerpts from the Business Plan

Financial Investment:

30 MEUR within 4 years from project start

- T 0 – T 18: Design and engineering 12 MEUR
- T 19 – T 36: Prototype production (TRL 7/8) 12 MEUR
- T 36 – T 48: EASA certification (Components in Progress) 6 MEUR

AdvanTec GmbH

HY2DRA

Hydrogen-Driven Range-Extended Aircraft (UAM)

Investors Wanted

Exit Strategy – HYDRA

Exit Timing	Timeframe	Trigger Milestones	Exit Options	Target VC Return
Early Exit	T48 (Year 4)	EASA certification complete First Adopter MOUs Series A scaling ready	Trade Sale Option execution by First Adopters	3–5x MOIC (~30–40% IRR)
Strategic Exit	T60 (Year 5)	Revenue traction International expansion Active order pipeline	Strategic Acquisition Management Buy-out (MBO)	5–7x MOIC (~25–35% IRR)
Late Exit	T70 (Year 6+)	Dual-Use scaling (civil & defense) Long-term contracts IP portfolio solidified	IPO Secondary Sale (PE or industry)	7–10x MOIC (~20–30% IRR)

AdvanTec GmbH

HY2DRA

Hydrogen-Driven Range-Extended Aircraft (UAM)

Investors Wanted

First Adopter strategy and EDF funding

Module	Content / Value
First Adopter – DHL	LoI with deployment & purchase options Use cases: logistics, disaster relief Optional equity participation post-pilot success
Public Funding – EDF (European Defence Fund)	Grant application planned for 2025 (€6-10M) TRL 6–8, non-dilutive funding Focus: prototype, testing, navigation, cyber
Combined Leverage	Dual-use validation: civil + defense Two paths to scaling & de-risking Early exit potential via partner equity

AdvanTec GmbH

HY2DRA

Hydrogen-Driven Range-Extended Aircraft (UAM)

Investors Wanted

Market Prospects:

Annual revenue from series production expected at 200–300 MEUR with 5% market share in the European market. Increasing to approximately > 400-600 MEUR CAGR from the second year of full-scale production.

- Components to enter commercialization starting at T–18 months. First ROI expected from 18 months onward, like Battery modules, BMS …

- Military applications, expect further developments: disaster relief missions, Logistic.

- T0–24: 20 jobs; T24–48: 100 jobs; T48–72: > 250 jobs in Bavaria.

- Development and production in Bavaria, Germany.

AdvanTec GmbH

HY2DRA

Strategic Advantages Multi-Purpose Operational Capability

Integration of Civil Drone Fleets (e.g., DHL, Amazon)

- Use of existing freight drone networks across Europe
- Experienced drone pilots & proven infrastructure
- No need for national stockpiling of drones or staff

Civil Protection & Defense Benefits:

- Rapid logistics & communication in crises
- Support of military supply chains
- Scalable response via civilian assets
- Public-private synergy (PPP model) for resilience

AdvanTec GmbH

HY2DRA

Hydra – The Modular Drone Concept up to 2 Tons MTOM

Project Overview

Hydra is a highly flexible unmanned aerial system (UAS) with a maximum takeoff mass (MTOM) of up to 2 tons. It is designed as a multi-role platform for civilian, disaster relief, and military operations – scalable, robust, and capable of operating under extrem conditions.

Civil Protection / Disaster Relief

- Supply of isolated or inaccessible regions
- Aerial firefighting & thermal reconnaissance
- Temporary telecommunications during outages
- Support for evacuation and coordination

Military Operations

- Tactical logistics and battlefield resupply
- ISR (Intelligence, Surveillance, Reconnaissance) missions
- Secure airborne communication hubs
- Search and Rescue (SAR) support in combat zones

Civil-Military Synergy through Integration of Private Operators

- Use of DHL freight drones across Europe during emergencies
- Skilled civilian operators & existing infrastructure
- Relief of government logistics through Public-Private Partnership (PPP)

Strategic Advantages

- Highly modular and mission-adaptable
- Deployable in crises and national defense scenarios
- Cost-efficient via civilian-military integration
- Scalable across national and European levels

Positioning

Hydra is a Blue Ocean Project – it opens up a new market space with no existing comparable solutions. It combines versatility, strategic relevance, and cutting-edge technology on a level not currently realized elsewhere.

AdvanTec GmbH

HY2DRA

Hydrogen-Driven Range-Extended Aircraft (UAM)

Consortium Partner HYDRA:

H2/E-Fuel REX

HTM

H2 Integration

AVL

Project Management / Consortiumleader

AdvanTec GmbH

H2 Integration

HYDAC

Industrialization

EVO

AI-Plattform / MBSE

CONTECH Software & Engineering GmbH

Integration of Flight Control / Simulation

DLR Stuttgart

Lightweight construction / automated manufacturing

DLR ZLP Augsburg

Design of Electrical System / Electric Motor

TECHNISCHE HOCHSCHULE NÜRNBERG GEORG SIMON OHM

Power and Control Electronics

Fraunhofer

Strategic Partner:

Flughafen Augsburg

AdvanTec GmbH

For over 20 years, our success story has been unfolding.

AdvanTec Engineering has supported renowned customers in product development and integration.

Our activities span drones, light aircraft, helicopters like EC 135 and NH 90, Tiger.

Commercial aircraft such as Airbus A320, A340, and A380, as well as Boeing, Dornier and Mitsubishi.

We also work in the automotive, mechanical and electrical engineering, also medical technology sectors.

BOEING EVO Mobilität entsteht im Kopf AIRBUS

ALAMO ENGINEERING BMW

AdvanTec GmbH

Thank you very much for your attention and interest!

Learn more about our projects

Innovationszentrum Augsburg

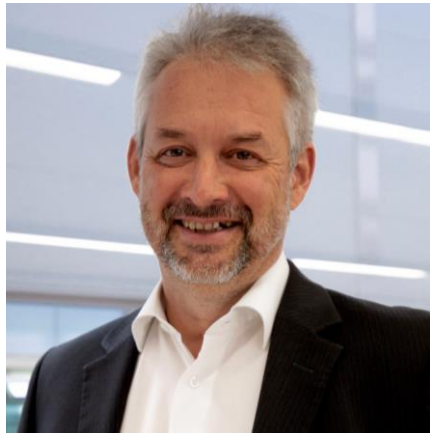
Am Technologiezentrum 5

D-86159 Augsburg

www.AdvanTecGmbH.de

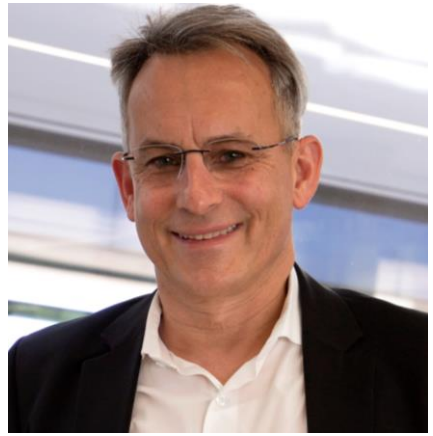
Tel.: + 49 821 65 05 90 20

scan for contact



Stefan Senger CTO + 49 173 25 84 587

Stefan.Senger@AdvanTecGmbH.de



Stefan Gorkenant CEO + 49 163 25 44 882

Stefan.Gorkenant@AdvanTecGmbH.de