



The Airboxer - Unmanned Helicopter System

DEFENCE OPERATIONAL PERFORMANCE PROFILE

Persistent airborne ISR without runway dependency



4+ Hours
Endurance, standard configuration

7.0 kg Payload
Maximum payload capacity

VTOL
No runway, launcher or net

300 W
Continuous payload power

Key Characteristics

- ✔ More than 4 hours endurance standard, more than 5 hours with Extended Range Fuel Tanks
- ✔ Maximum payload capacity of 7.0 kg, or 3.0 kg at full standard fuel, multiple positions
- ✔ Continuous payload power of 300 W / 24 VDC with 28 V / 700 W onboard electrical generation
- ✔ Maximum flight range of more than 200 NM / 360 km at 40–75 kts IAS cruise and maximum speed
- ✔ Stabilized EO/IR systems and mission-specific sensors over IP Ethernet connectivity
- ✔ Automated flight functions reduce operator workload while maintaining pilot authority
- ✔ Live distribution of payload video, telemetry and mission data to local or remote users
- ✔ Operation to 25 kts wind, up to 40 kts including gusts, at –10 °C to +45 °C, IP56 / IP67

Primary Operational Applications

TACTICAL ISR & RECONNAISSANCE

FORCE & CRITICAL-SITE PROTECTION

BORDER & COASTAL SURVEILLANCE

Description

The Airboxer is a long-endurance unmanned helicopter developed for intelligence, surveillance and reconnaissance missions requiring persistent coverage, vertical deployment and a limited logistical footprint.

The platform combines vertical take-off and landing, stable hover, controlled low-speed flight and multi-hour endurance. It can be deployed from temporary operating locations, confined areas and configured vessels without runway, launcher or recovery infrastructure.

The Airboxer provides multi-hour rotary-wing ISR while retaining a compact operating footprint and the ability to deploy without dedicated aviation infrastructure.

Positioned between small UAS and larger tactical systems

Small electric UAS are rapidly deployable but typically provide limited endurance, payload capacity and onboard power. Larger tactical unmanned systems offer greater reach and payload capacity but generally require more personnel, infrastructure and logistical support.

Vertical take-off and landing remove dependence on runways, launch rails, arresting systems and recovery nets. The Airboxer can be deployed closer to the area of interest from temporary operating locations with limited infrastructure.

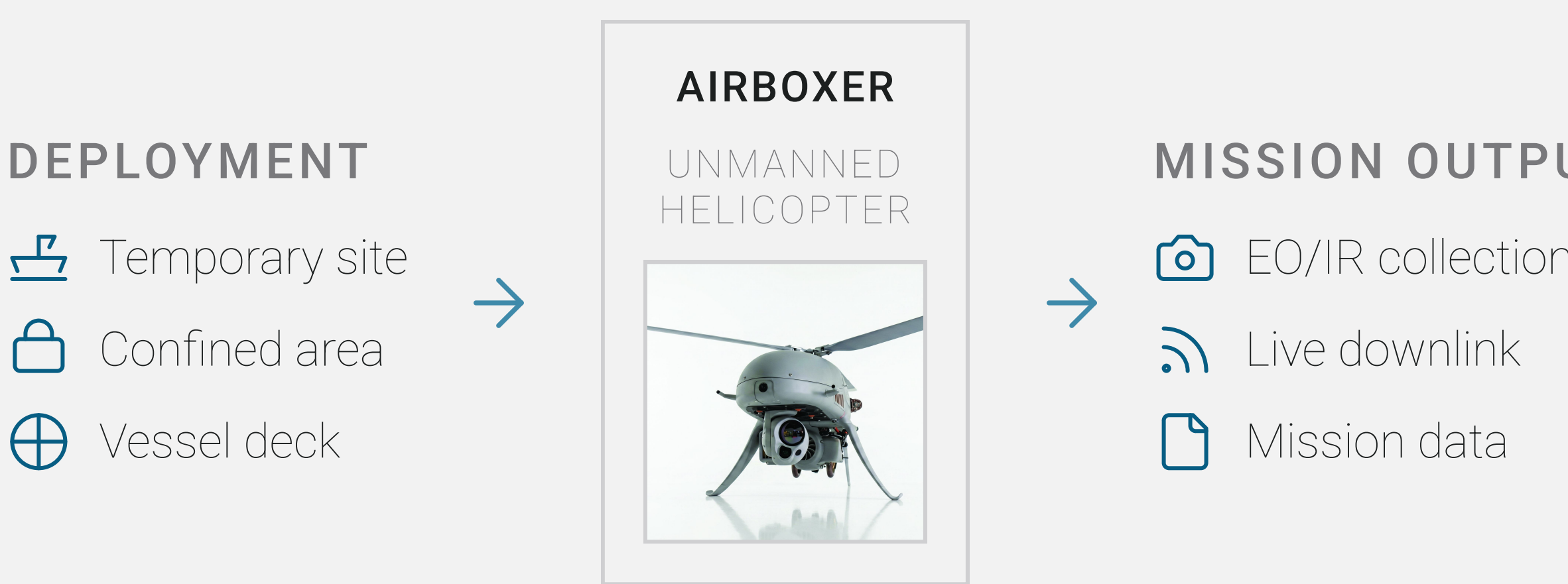
OPERATIONAL EFFECT

- ✔ Persistent ISR - more than 4 hours on station
- ✔ Forward deployment without runway infrastructure
- ✔ Multi-sensor collection with 300 W payload power
- ✔ Reduced logistical burden and networked execution

Core Performance

PARAMETER	VALUE
Max take-off weight	34.2 kg
Endurance, standard	More than 4 hours
Endurance, ER tanks	More than 5 hours
Max flight range	More than 200 NM / 360 km
Endurance cruise	40 kts IAS
Range cruise	45 kts IAS
Max flight speed	75 kts IAS
Wind limit	25 kts, up to 40 kts including gusts
Temperature	–10 °C to +45 °C

Operating concept





Indicative Capability Comparison

OPERATIONAL FACTOR	SMALL ELECTRIC UAS	THE AIRBOXER	LARGER TACTICAL UAS
Vertical take-off and landing	Common	Standard capability	Configuration-dependent
Stable hover	Common	Standard capability	Platform-dependent
Endurance	Limited	More than 4 hours	Extended
Maximum payload capacity	Limited	Up to 7.0 kg	Higher
Continuous payload power	Limited	300 W	Higher
Launch and recovery infrastructure	Minimal	Minimal	Often required
Deployment footprint	Low	Compact	Higher
Personnel and support burden	Low	Moderate	Higher

The comparison is indicative. Actual characteristics depend on the selected aircraft and system configuration.

Reference System Configurations

CONFIGURATION	TYPICAL EQUIPMENT	PRIMARY PURPOSE
Persistent ISR	Stabilized EO/IR, standard fuel, MIMO data link	Day and night surveillance
Extended-Endurance ISR	Stabilized EO/IR, Extended Range Fuel Tanks	Increased time on station
Specialist Collection	Mission-specific sensor package	RF, acoustic, LiDAR, magnetometer or other sensing
Shipborne ISR	EO/IR, vessel communication system, ship-integrated GCS	Maritime and over-water surveillance

Final payload and communication configurations remain subject to technical integration, flight clearance and operational approval.

Performance and configuration notes

Maximum flight range is not equivalent to mission radius. Mission radius and time on station depend on payload, fuel, atmospheric conditions, communication coverage, flight profile and required recovery reserve.

Published performance values are configuration-dependent. Actual endurance, range, mission radius and payload capacity vary with fuel quantity, payload mass, atmospheric conditions, altitude, communication equipment, operating procedures and required recovery reserve.

Operational Effect

- ✔ **Persistent ISR:** more than four hours of endurance in standard configuration enables extended observation, increased time on station and fewer aircraft rotations. Extended Range Fuel Tanks increase endurance to more than five hours when permitted by the payload and mission profile.
- ✔ **Forward deployment:** vertical take-off and landing remove dependence on runways, launch rails, arresting systems and recovery nets. The Airboxer can be deployed closer to the area of interest from temporary operating locations with limited infrastructure.
- ✔ **Multi-sensor collection:** multiple payload positions, Ethernet connectivity and 300 W of continuous payload power support stabilized EO/IR systems and other mission-specific sensors.
- ✔ **Networked mission execution:** live payload video, aircraft telemetry and mission data can be distributed to the local operator, supported command element or remote operations centre.
- ✔ **Reduced logistical burden:** the compact aircraft, portable Ground Control Station and configurable communication equipment reduce the transport and support requirements associated with larger tactical unmanned systems.

Primary Operational Applications

- ✔ Tactical intelligence, surveillance and reconnaissance
- ✔ Border and coastal surveillance
- ✔ Force, base and critical-site protection
- ✔ Target detection, tracking and identification
- ✔ Counter-smuggling and law-enforcement support
- ✔ Search and incident-response operations
- ✔ Shipborne surveillance and reconnaissance

Payload & Electrical Capability

PARAMETER	VALUE
Maximum payload capacity	7.0 kg
Payload capacity at full standard fuel	3.0 kg
Continuous payload power	300 W / 24 VDC
Payload data interface	IP Ethernet, IEEE 802.3
Onboard electrical generation	28 V / 700 W
Payload arrangement	Multiple payload positions

The Airboxer - Unmanned Helicopter System

SYSTEM ARCHITECTURE AND MATURITY

Integrated aircraft system, communications, maturity and lifecycle support

Mission configuration

- ✓ The Airboxer aircraft
- ✓ Stabilized EO/IR or specialist mission payload
- ✓ Airborne communication system
- ✓ Tracking or fixed antenna
- ✓ Portable, vehicle-integrated or ship-integrated Ground Control Station
- ✓ Pilot and payload-control interfaces
- ✓ Transport and support equipment
- ✓ Mission-planning software
- ✓ Technical and operational documentation
- ✓ Training, maintenance and lifecycle support



IP56 / IP67

Aircraft and avionics protection



200 V/m

Electromagnetic field tolerance



ITAR-Free

Platform architecture



STANAG 4738

Operational principles alignment

Communication & Data Architecture

- ✓ Systems selected by mission radius, terrain, spectrum availability, network topology and national requirements
- ✓ Encrypted 2x2 MIMO MANET for mobile and distributed operations
- ✓ Directional tracking link for extended line-of-sight operation
- ✓ LTE/5G for network-supported BVLOS operation; SATCOM backhaul for BLOS support
- ✓ Maritime C-band for configured vessel-based operation
- ✓ Aircraft command and control, with aircraft and payload telemetry
- ✓ Payload control, live video transmission and mission-data distribution
- ✓ Connection to local or remote operational users
- ✓ Interfaces with external command-and-control systems can be developed during integration

Capability Maturity



CORE PLATFORM & VTOL - DEMONSTRATED



MULTI-HOUR ENDURANCE - VALIDATED



SHIPBORNE OPERATION - DEMONSTRATED

Integrated unmanned aircraft system

The Airboxer is supplied as an integrated unmanned aircraft system rather than as a standalone air vehicle. A mission configuration can include the elements listed opposite.

The Ground Control Station can be configured for portable, vehicle-integrated, ship-integrated or fixed-site operation.

Flight-control architecture

The flight-control system manages aircraft attitude, heading, trajectory, airspeed and mission execution throughout the flight. Automated flight functions reduce operator workload while maintaining pilot authority over the aircraft and mission.

The architecture incorporates redundant flight-control elements, continuous system monitoring, defined degradation logic, controlled contingency responses and documented operational and environmental limitations. Detailed failure thresholds and recovery logic are excluded from public-release documentation.

GROUND CONTROL STATION

- ✓ Mission planning
- ✓ Aircraft command and control
- ✓ Payload operation
- ✓ Live video and telemetry display
- ✓ Mission-data recording
- ✓ Contingency management and post-flight review
- ✓ Portable, vehicle, ship or fixed-site configuration

Environmental Design

PARAMETER	VALUE
Aircraft enclosure	IP56
Avionics protection	IP67
Relative humidity	95% non-condensing
Electromagnetic field tolerance	At least 200 V/m
Operating temperature	−10 °C to +45 °C
Operational wind limit	25 kts, up to 40 kts including gusts

Environmental limits remain dependent on the complete aircraft configuration, payload installation and approved operating procedures.

Regulatory & Sustainment

FRAMEWORK

 LUC SAIL II

 Safety & risk

 Config control

SUPPORT

 Pilot training

 Maintenance

 Spares & LCS



Capability Maturity

CAPABILITY	CURRENT STATUS
Core aircraft platform	Operationally demonstrated
Vertical take-off and landing	Operationally demonstrated
Multi-hour endurance	Validated
Stabilized EO/IR integration	Available
Portable Ground Control Station	Available
MIMO MANET communication	Available
Directional tracking communication	Available
LTE/5G-supported operation	Configuration-dependent
SATCOM-supported operation	Integration-dependent
Specialist payload integration	Integration-dependent
Shipborne operation	Demonstrated in configured conditions
Precision landing support	Available
Moving-vessel automatic landing	Validation and configuration-dependent

The Airboxer is supported by structured configuration control, training, maintenance and technical documentation.

Operational Fit

The Airboxer is suitable for further evaluation where the requirement calls for:

- Multi-hour airborne ISR
- Vertical operation without runway infrastructure
- Stable hover and controlled low-speed observation
- Deployment from temporary or confined operating locations
- Modular payload and communication configurations
- Reduced logistical burden compared with larger tactical unmanned systems
- Integration into a regulated operating environment
- Structured training, maintenance and lifecycle support

Regulatory, Training & Sustainment

- High Eye's European LUC SAIL II operating experience
- Structured safety and risk-management processes
- Aviation-style operational and maintenance documentation
- Controlled system configurations
- Alignment with STANAG 4738 operational principles
- Pilot, mission-operator and maintenance training
- Simulator and recurrent training
- Operator-level and factory-level maintenance support
- Spare-parts and support packages
- Configuration and obsolescence management
- ITAR-free platform architecture

The Airboxer is developed for operation within professional and regulated aviation environments.

The Airboxer is classified as a dual-use system under European export-control regulations. Operational authorization remains dependent on the mission, airspace, national regulatory framework, operating organization and selected system configuration.

Important notes

High Eye - professional unmanned helicopter systems. higheye.com

Published performance values are configuration-dependent. Actual endurance, range, mission radius and payload capacity vary with fuel quantity, payload mass, atmospheric conditions, altitude, communication equipment, operating procedures and required recovery reserve.

Final performance and system specifications are confirmed for the selected configuration and approved operational scenario.

Export and operation remain subject to applicable national and international regulations.