

EYE IN THE SKIES

AgustaWestland
AWHERO





SHORT-RANGE TACTICAL R-UAS

The AWHERO R-UAS system exploits the synergy between Leonardo Helicopters extensive experience in rotorcraft development and Sistemi Dinamici's experience in unmanned systems.

The result is a highly technologically advanced R-UAS which includes a range of advanced features:

- Safety Critical Systems Redundancy
- Automatic Failure Management
- Flight Termination System
- Automatic take-off and landing from terrain or maritime vessels
- Automatic Navigation and Mission Task Execution
- Manned-Unmanned Teaming

The AWHERO R-UAS includes:

- A Ground Control Station comprising Command & Control and Payload Management
- One or more Air Vehicles
- A Wide Band real-time Data Link system
- Payload comprising a modular sensor suite

The AWHERO R-UAS development incorporates early design features such as :

- International Aeronautical Standards
- Reliability, Availability, Maintainability, Testability (RAMT) concepts
- Mission oriented solutions such as an optimised three-blade rotor that minimises noise and maximizes payload performance with reduced vibrations



MISSIONS

AWHERO is designed to fulfill the spectrum of short-range civil missions:

- National Security
- Border & Coastal Surveillance
- Vessel Detection, Identification, Monitoring and Tracking
- Fisheries Management
- Migration Management
- Riot Surveillance
- Law Enforcement
- Traffic Management
- Critical Infrastructure Monitoring
- Observation, Mapping, Search & Environmental Monitoring
- Disaster Relief

PAYLOAD

- EO/IR Turret
- Thermal Camera
- Maritime RADAR
- SAR
- LIDAR
- AIS
- Loudspeaker
- Distress Sensor
- Storage Dispenser



MODULAR PAYLOAD BAYS

Two modular payload bays host a range of sensors. The payload can be nose, underbelly or side mounted. The nose bay, as “no dark spot” location, can accommodate a 10” EO/IR turret, while the underbelly and side bays can be used for heavier payloads.

LAND AND SEA OPERATIONS

The AWHERO R-UAS can perform land operations from rough terrain and in harsh environments. At sea, the AWHERO can withstand severe weather conditions and sea states.

Main Naval Capability

- Automatic and Semi-automatic Deck Takeoff & Landing
- Deck Lock system
- Easy handling on the deck
- Minimum Time from Alert to Launch
- Foldable blades to minimize footprint in the hangar

DATA PROVISION AND INTEROPERABILITY

Due to its modular architecture, the AWHERO R-UAS can be readily interfaced with existing end-user networks in order to provide:

- Live Streaming Video
- Radar images
- Identified objects, ships, vehicles and persons
- AIS information and track of vessels
- Georeferenced objects

MAXIMIZED RELIABILITY

- Triple-redundant flight control and navigation system
- Two separated data links and two control positions to segregate Command & Control safety critical functions from payload management
- Dual-redundant electrical system
- Redundant Command & Control station
- Independent flight termination system
- Automatic emergency procedures:
 - Command & Control link loss contingency plans
 - Intelligent Back Home function
 - GPS outage flight mode

MAINTENANCE AND SUPPORT

AWHERO takes advantage of extensive experience within Leonardo Helicopters to ensure effective development and supply of all the required resources and services at competitive Life Cycle Costs. Global and around the clock support is provided by a worldwide network of Supply Centre's through:

- Integrated Logistic Support
- Customized Product Support Programs
- Field Support Services
- After sales activities
- Training programs
- Technical publications

TRANSPORTABILITY

AWHERO can be transported by land, sea, commercial air transport and strategic air lift. The system, including tools and spares, is storable in a 20ft standard container, compatible with global shipping requirement. The AWHERO stowage condition supports parent ship units in high sea state conditions.

AWHERO CHARACTERISTICS

Weights

MTOW	205 kg	452 lb
Empty Weight	120 kg	265 lb
Useful Load (Payload + Fuel)	85 kg	187 lb

Performance

Endurance	6 hours (at 35 kg payload)
Service Ceiling	10,000 ft
Max Cruise Speed	90 kts

Dimension

Main rotor diameter	4,00 m	157,5 in
Lenght	3,70 m	145,7 in
Height	1,20 m	47,2 in
Width (with folded rotor)	1,05 m	41,3 in

Engine Heavy Fuel (JP-5, JP-8, Jet A-1)

Ground Control Station

- Flexible and modular hardware configuration:
 - laptop
 - portable rugged
 - Integrated with Control Room
- HMI designed leveraging the experience of Leonardo Helicopters' test pilots
- Compliant with STANAG 4586.
- Common interface with Leonardo Helicopters unmanned platforms

Data Link

Command & Control Data-link

- Secure encrypted transmission (AES-256)
- Long-range coverage (50NM, optional 100NM)
- Duplex architecture solution provides complete hardware redundancy to maximize mission reliability

Payload Data Link

- DVB-based
- Up to 2 simultaneous full HD video transmissions
- State-of-the-art compression technologies (H.264) and encryption system (AES-256)
- COFDM modulation for multipath immunity
- Long-range coverage (50NM, optional 100NM)
- GPS based auto-tracking capability



Leonardo - Società per azioni
Registered Head Office:
Piazza Monte Grappa, 4 - 00195 Rome - Italy
Tel. +39 06 324731 - Fax +39 06 3208621
Leonardo Helicopters
Head Office:
Via Giovanni Agusta, 520 - 21017 Cascina Costa di Samarate - Italy
Tel. +39 0331 229111



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