

MUMT

HELICOPTERS DIVISION

Manned
Unmanned
Teaming



 **LEONARDO**



MANNED UNMANNED TEAMING LEVEL OF INTEROPERABILITY

Teaming of manned aircraft with unmanned air systems (Manned Unmanned Teaming - MUMT) enhances Force air support capability in both the Land and Maritime environments, enabling extended and complex operations to be conducted with a mix of platforms and systems. Uniquely, being the OEM for advanced battlefield and maritime helicopters and the AWhero Rotary Unmanned Air System (RUAS), Leonardo Helicopters is able to provide customers with highly effective, integrated, and low risk manned/unmanned teaming solutions. Leonardo has successfully demonstrated MUMT capability during the European Defence Agency Exercise Italian Blade in 2015, as well as RUAS integration into a ship Combat Management System (CMS) during the Royal Navy Exercise Unmanned Warrior in 2016. Integration of advanced maritime manned and unmanned surveillance capabilities will be further demonstrated in 2019 and 2020 during the European Defence Agency OCEAN 2020 programme, managed by Leonardo.

MISSION PLANNING

Scheduling AWhero within a 24 hour period of flying operations to conduct persistent wide area surveillance enables the optimum use of manned helicopters when required, thereby reducing the risk to aircrews in high threat environments and ensuring crew efficiency is maintained. RUAS can also provide an overwatch capability during maritime interdiction operations and amphibious landings. Combat Search & Rescue (CSAR) and Special Forces operations in support of a Land Force Commander can be also conducted. AWhero can be tasked for non-combat operations in support of Humanitarian Aid and Disaster Relief (HADR) tasking. AWhero, configured with a wide range of mission sensors located in 2 payload bays can relay real-time Full Motion Video (FMV), radar imagery and Electronic Support Measures (ESM) data to other airborne and surface units to augment Maritime Security Operations (MSO) and Battlefield Operations.

AWhero can be teamed with Leonardo Helicopters platforms with varying Levels of Interoperability (LoI) as required by the customer. Command and Control (C2) of AWhero and payload can be exercised via a ship Combat Management System (CMS), Battlefield Management System (BMS), or from the standalone AWhero Ground Control Station (GCS) through independent and encrypted data link systems.

Alternatively, AWhero and payloads have the potential to be directly controlled by other air, land and maritime platforms with AWhero FMV and metadata relayed directly to the manned platform by data link.

MARITIME SECURITY AND INTERDICTION OPERATIONS

The 205kg AWhero tactical RUAS operating with the 15.6 tonne AW101 and/or the 6.0 tonne AW159 multi-role maritime helicopters significantly enhances maritime capability and tactical reach during littoral and blue water operations.

AWhero operating from Surface Combatants, Offshore Patrol Vessels and Fleet Auxiliary vessels provides



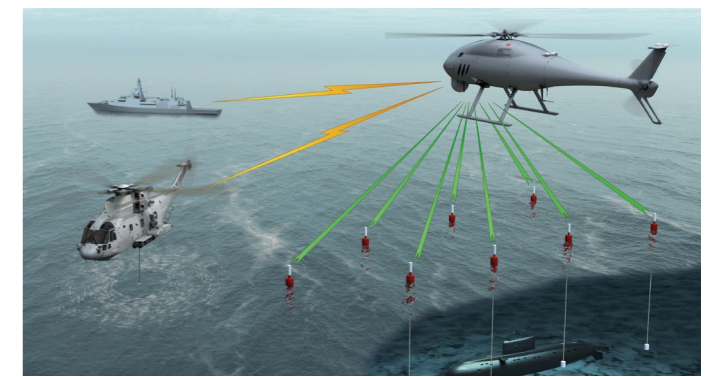
wide area surveillance capabilities for the Maritime Commander. The AWhero modular sensor suite and extended endurance provides persistent surveillance and situational awareness of the maritime and littoral environment Beyond Visual Line of Sight (BVLOS) from the maritime Force.

AWhero configured with Maritime Radar and Electro Optical Device provides 'real time' Pattern of Life (PoL) information of contacts of interest (CoI) under surveillance in the maritime environment. Data is integrated into surface ship Combat Management System (CMS) for interpretation and action.

Multi-role AWhero can be re-tasked to provide an 'overwatch' role during Maritime Interdiction Operations of suspect vessels, relaying real time Full Motion Video (FMV) to the mounting vessel for assessment of the ongoing operation to insert a team on the suspect vessel.

ANTI-SURFACE WARFARE (ASuW) OPERATIONS

AWhero can provide Over The Horizon Targeting (OTHT) information to surface combatants for Naval Gun Fire Support (NGFS) against maritime and land designated targets. Laser targeting capability is available to direct Precision Guided Munitions (PGMs).



ANTI-SUBMARINE WARFARE (ASW) OPERATIONS

Configured with a communications relay system, the AWhero can assist multi-mission ASW helicopters conduct simultaneous active and passive ASW operations. AWhero can relay data from a pre-laid sonobuoy field to both ASW surface combatants and also AW101 or AW159 ASW helicopters conducting active ASW operations. Coordination of both active and passive data can enable rapid classification of possible submarine contacts. An armed AW159 held at deck "Alert" could then be launched and vectored to deliver dynamic ASW force.

SUPPORT TO LAND FORCE COMMANDER OPERATIONS

AWhero can be operated from either a permanent shore base or forward deployed operating base. After launch from a ship, operational C2 of the RUAS and payload can be transferred to the Land Force Commander during transit inshore.

Control of AWhero and payloads within the Battlefield Environment can be conducted through a mobile Ground Control Station (GCS) located in a ground vehicle or by a forward controller using a ruggedised laptop.

CLOSE AIR SUPPORT

Close Air Support (CAS) can be provided by AWhero to both fixed and rotary wing strike aircraft.

To maintain data link integrity of the RUAS within the Battlefield Environment, C2 of AWhero and payload management would be transferred to a forward deployed controller.

Using its laser designation capability, AWhero can direct Precision Guided Munitions (PGMs), launched from strike aircraft, artillery and warships, against stationary and moving ground targets.



Leonardo
Società per azioni

Registered Head Office:
Piazza Monte Grappa, 4
00195 Rome - Italy
Tel. +39 06 324731

leonardocompany.com

MUMT-Mk-0519-017

Leonardo Helicopters

Head Office:
Via Giovanni Agusta, 520
21017 Cascina Costa di
Samarate - Italy
Tel. +39 0331 229111

