

Contract Award – Aerostat For Unmanned Surface Vessel

Carolina Unmanned Vehicles, Inc. (CUV) announces the award of a contract for a portion of the Aerostat SBIR Modular Aerostat Communications Relay (MACRel) program. CUV is a subcontractor to Robotic Research, LLC (RR) of Gaithersburg Maryland. Robotic Research was awarded the prime contract by the Navy under the Small Business innovative research (SBIR) program, specifically Topic N131-039, Aerostat Communications Relay from Unmanned Surface Vehicle. To meet the Navy’s requirements the MACRel program will combine the CUV 12 years of development of small lightweight aerostats with Robotic Research 11 years of expertise in advanced robotics.

Under the new contract CUV will develop a new version of their Lightweight Aerostat System (LAS) for operation from an Unmanned Surface Vessel (USV), with the objective is to increase the communications range between the Littoral Combat Ship (LCS) and USVs operating in the Mine countermeasure (MCM) Mission. The MACRel will be a module mounted on the USV, which will be launched and recovered from the LCS. The program included developing the ability to semi-autonomously inflate, deploy and recover the aerostat with the communications payload. The MACRel module will be adaptable to small Coast Guard and naval vessels as well as USVs, providing extended range communications and wide area surveillance.

Carolina Unmanned Vehicles has delivered versions of the Lightweight Aerostat System (LAS) to various customers. The most recent was delivery of the Small Tactical Multi-Payload Aerostat System (STMPAS), for deployment to Afghanistan. STMPAS combines the ground and airborne hardware from CUV and payloads developed by Georgia Tech Research Institute for the Army Rapid Equipping Force. It provides Intelligence, Surveillance, and Reconnaissance (ISR) capability for small tactical units in Afghanistan, such as small Forward Operating Base (FOB) that cannot meet the logistic requirements of a larger aerostat system.

Traditional aerostats cannot operate in high winds unless fairly large, typically with 200 Lb of lift or more. This large size makes them unsuitable for deployment to small isolated bases or ships. LAS uses the patented Helikite lifting aerostat from Allsopp Helikites of Great Britain. Helikites have lifting surfaces that generate aerodynamic lift to support the blimp in winds which would drive traditional designs into the ground. With the Helikite, LAS can be smaller than traditional aerostat systems yet still operate in high winds. This smaller aerostat in turn will facilitate launch and operation from the USV in the MACRel program.

LAS is suitable for surveillance, communications relay and research for DOD and Homeland Security missions. CUV is a small Woman-Owned company focused on small aerostats and Unmanned Aerial Vehicles, and has previously provided aerostat systems for the USAF, Sandia National Laboratory, and Lockheed Martin. Contact: Mike Rogers, (919) 851-9898, merogers@carolinaunmanned.com

Small Tactical Multi-Payload Aerostat System (STMPAS)



HMMWV / MRAP Compatible
Trailer Carrier With All Equipment

Helikite Lifting Aerostat

Gyro – Stabilized Camera Payload

Other Possible Payloads Include:

Networked Comm Payload

Acoustic Gunfire Detection



Fig 1