The Unmanned Maritime Systems (UMS) Program Office (PMS 406) within PEO Littoral & Mine Warfare (LMW), is chartered to develop, acquire, deliver, and support operationally effective, integrated Unmanned Maritime Systems (UMS) for the war fighter and to direct UMS experimentation and technology maturation efforts to meet the Fleet's capability needs. UMS comprises Unmanned Maritimes Vehicles (UMV), which includes both Unmanned Undersea Vehicles (UUVs) and Unmanned Surface Vehicles (USVs), and fully integrated sensors and payloads as necessary to accomplish the required missions.

The U.S. Navy established this program office on 16 July 2010 to manage its UMS efforts, marrying traditional acquisition and advanced development into a single charter. The goal is to coordinate unmanned system acquisition efforts in addition to directing specific experimentation and technology maturation.

PMS 406 has delivered several User Operational Evaluation Systems (UOES) - Surface Mine Countermeasures (SMCM) UUV Increment 1 and SEAFOX USV, currently being operated by Fleet units. Ongoing programs/projects include: Unmanned Influence Sweep System (UISS) comprised of the Mine Countermeasures USV (MCM USV) and Unmanned Surface Sweep System (US3), Anti-Submarine Warfare USV (ASW USV), and the SMCM UUV in support of the Littoral Combat Ship (LCS); SMCM UUV Increment 2 UOES; Modular Unmanned Surface Craft Littoral (MUSCL) USV; and Advanced Development of UMS, including Large Displacement UUV (LDUU V) system development and demonstration for the Navy.

The **Unmanned Influence Sweep System (UISS)** provides the LCS with a stand-off, long endurance, semi-autonomous minesweeping capability to counter acoustic and/or magnetic influence mine threats in the littoral environment. The system, part of a family of systems intended to “get the sailor out of the minefield,” includes the MCM Unmanned Surface Vehicle (USV) designed by the Naval Surface Warfare Center Carderock, Combatant Craft Division; Unmanned Surface Sweep System (US3) - a prototype wide area unmanned magnetic and acoustic influence minesweeping system developed by the Office of Naval Research, USV support container, and USV cradle. The USV Command and Control system, compliant with the Joint Architecture for Unmanned Systems (JAUS), was designed and integrated by Space and Naval Warfare Systems Command (SPAWAR). The system will be operationally employed to evaluate performance characteristics for follow-on MCM vehicles and payloads.

The **Anti-Submarine Warfare (ASW) USV** is a modular, reconfigurable, high-speed mission system within the LCS ASW Mission Package. This unmanned, semi-autonomous Engineering Development Model (EDM) is capable of extended duration operations. Current payloads include the Unmanned Dipping Sonar (UDS), USV Towed Array System (UTAS), and the Multi-Static Off-Board Source (MSOBS). The craft is equipped with surface search radar used for both navigation and detection of other vessels in the vicinity of the USV, as well as advanced communications capabilities.
The **Surface Mine Countermeasure Unmanned Undersea Vehicle (SMCM UUV)** system will address the Navy’s need to reliably detect and identify undersea volume and bottom mines in high clutter environments and areas with potential for mine case burial. The SMCM UUV will also gather environmental data to provide intelligence support for other mine warfare systems. SMCM UUV system will be a part of the LCS MCM Mission Package and will also be capable of operating from a craft of opportunity. The SMCM UUV is one more step towards the effort of “getting the sailor out of the minefield.” The SMCM UUV will employ the Low Frequency Broadband (LFBB) sonar, which has demonstrated excellent minehunting performance with a low false alarm rate in what have been historically difficult minehunting environments.

The **SMCM UUV UOES Increment 1** was employed by the Naval Oceanography Mine Warfare Center (NOMWC) UUV platoon in eight separate Homeland Defense harbor surveys and two fleet mine warfare exercises during FY09 through FY10. The UOES program serves to engage the Fleet to gain experience with new UUV technology and systems, develop and refine system requirements, validate a concept of employment, develop tactics, techniques, & procedures (TTP), assess overall system suitability, supportability, and sustainment, and document lessons learned. The increased capability **SMCM Increment 2** vehicle with Synthetic Aperture Sonar is anticipated to be operational in FY11.

The **SEAFOX Unmanned Surface Vehicle (USV)** is a UOES vehicle that provides a remote, unmanned Intelligence, Surveillance, and Reconnaissance (ISR) capability, supporting multiple mission areas such as: Anti-Terrorism / Force Protection (AT/FP), Riverine Operations, Maritime Interdiction Operations (MIO), Maritime Domain Awareness (MDA), and Port Security. The SEAFOX USV has a JP-5 engine with water jet propulsion and a payload consisting of a Command and Control, Communications, and Intelligence (C3I) system. The C3 portion of the payload has an amplified military band command and control radio, remote camera operation station, remote ground station, autonomous way-point navigation, navigation/stobe safety lights, and amplified communications. The intelligence payload capabilities include: wide bandwidth video, stabilized object tracking, digital zoom Infra-Red (IR) camera, digital zoom daylight color camera, navigation cameras, remotely activated flood lighting, and remotely activated hailer/announcement system.

The **Modular Unmanned Surface Craft Littoral (MUSCL)** is an “X-Class,” man-portable USV platform for Riverine combatant craft support to employ as a waterborne “point man” to increase situational awareness during operations on inland waterways. It supports Navy Expeditionary Combat Command (NECC) requirements and is capable of carrying different sensors and payloads to provide a variety of capabilities such as intelligence, surveillance, and reconnaissance (ISR) and threat detection.

The **Advanced Development Office** plans and executes UMS prototype development, supports UMS experimentation and Fleet exercises, facilitates CONOPS development, matures UMS technologies and transitions S&T capabilities into acquisition programs. The current experimentation focus is on Large Displacement UUVs (LDUUV), leveraging existing commercial capability to demonstrate persistent ISR missions. The Navy’s long-term vision for LDUUV encompasses capability in every dimension of persistence, C3I/connectivity, autonomy, stealth, survivability - providing offensive and defensive roles in every stage of the fight. LDUUV is a game-changing technology, providing force multiplication, increased reach, and awareness into the undersea environment.