Unmanned Maritime Systems

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CAPT David Honabach
(202) 781-1393
David.Honabach@navy.mil
PMS406 Unmanned Maritime Vehicles (UMV)

- **Surface Mine Counter Measures UUV (Knifefish)**: Hunting for Volume and Bottomed / Buried Mines in High Clutter Environment
- **Large Displacement Unmanned Undersea Vehicle (LDUUV)**: Intelligence Surveillance Reconnaissance (ISR), ASW, IPOE and Deployable Payload
- **Extra Large Unmanned Undersea Vehicle (XLUUV)**: Deployable Payloads
- **Mine Hunting Unmanned Surface Vehicles (MHU)**: Mine Hunting
- **Unmanned Influence Sweep System (UISS)**: Mine Sweeping
- **Common USV (CUSV) with An/AQS-Q20/24**: Mine Hunting
- **RMMV**: Mine Hunting w/ AN/AQS-20 Sonar

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### Notional UMV Plan

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<td>Gate 4 ADM</td>
<td>PD Assess</td>
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UMV Challenges/Opportunities

- Knifefish
- PLUS
- LDUUV/XLUUV
- MHU
- UISS/CUSV

- Energy
- Reliability
- L&R from host platforms
- Mission planning
- Autonomy
- Affordability
- Collision Regulations

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Mine Hunting Unmanned Surface Vehicles (MHU)

AQS-24A Mine Hunting Sonar
AQS-24A Electronics
Communication Antennas
Day/Night Situational Awareness Sensors
Command & Control (C2) Host Station
AQS-24A Host Operator’s Console

USV (RHIB)
Deploy & Retrieve
Towing Winch

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MHU Payload Deploy & Recovery

TOWING WINCH
AQS-24 & MIW ELECTRONICS
AQS-24 TOW FISH

D&R ELECTRONICS
D&R Capture Boom
D&R Rail
D&R Video

1. Stowed
2. Rail Extended 5 ft
3. Tilt
4. Finish Rail Extension
5. Docking Boom Extended & Vehicle Launched
6. Tow Configuration

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Unmanned Influence Sweep System (UISS)

**Conceptualized images**

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Unmanned Influence Sweep System (UISS) Overview

Requirements Documents

Provides low-cost, long endurance, semi-autonomous mine sweeping capability to counter acoustic and/or magnetic influence mines.

Acquisition Key Milestones

- Draft RFP released: Q1FY13
- Industry Day held: Q1FY13
- RFP release: Q4FY13
- Proposals received: Q1FY14
- MS B Decision: Aug 2014
- Source Selection: Awarded 30 Sep 2014
- PDR: April 2015
- CDR: Jan 2016
- EDM Construction
Unmanned Influence Sweep System (UISS)
Operational Range Extension
Potential Operational Concept

Use tethered Unmanned Multirotor Aerial Relay (UMAR) to extend Mine Countermeasures (MCM) Line-of-Sight (LOS) operations. Expand and enhance Intelligence, Surveillance, and Reconnaissance (ISR) and overwatch capabilities.
Unmanned Multirotor Aerial Relay (UMAR)

Two Main Components:
- Unmanned Multirotor Aerial Relay (UMAR)
- Reel System - “drops in” as replacement hatch