



***NDIA 20th Annual Expeditionary Warfare  
Conference***

***PEO LCS Mine Countermeasures Update***

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# PEO LCS Portfolio



**PEO LCS SUMMARY**  
 3 – ACAT I  
 4 – ACAT II  
 4 – ACAT III  
 5 – ACAT IV  
 7 – Non ACAT



# Legacy AMCM and SMCM Upgrade Status



## AN/AQS-24B Highlights



### AN/AQS-24B High Speed Synthetic Aperture Sonar

- Completed Testing on MH-53E in Bahrain May 2015

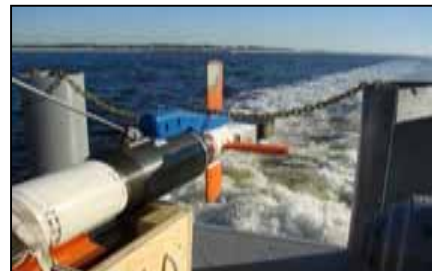
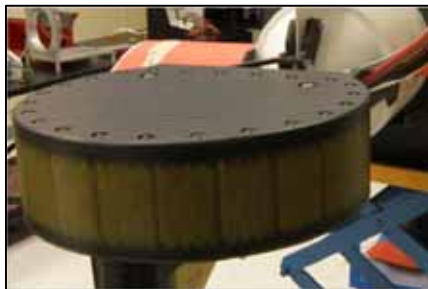
## AN/SQQ-32(V)4 Highlights



### AN/SQQ-32(V)4 High Frequency Wide Band Sonar

- Completed installation of Upgrade on 9 of 11 Ships

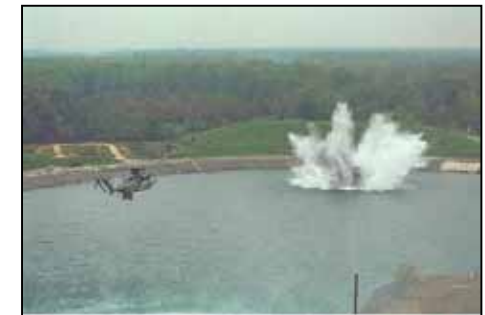
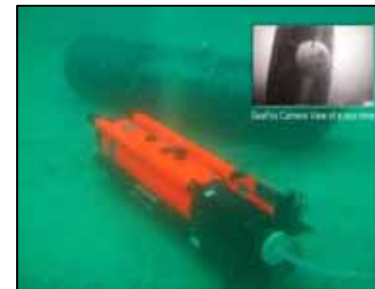
## AN/AQS-24C Highlights



### AN/AQS-24C Volume Search Sonar

- Critical Design Review scheduled for November 2015
  - 2 systems have been procured
- MH-53E testing scheduled for September 2016
  - 10 more systems to be procured FY17-18

## AN/ASQ-232A and AN/SLQ-60 Highlights



### AN/ASQ-232A and AN/SLQ-60 SeaFox Urgent Operational Need

- Installed on 3 MCM Class Ships
- 6 systems for AMCM on MH-53E
- Install on 4<sup>th</sup> MCM Class Ship planned for September 2016





# Mission Package Defined



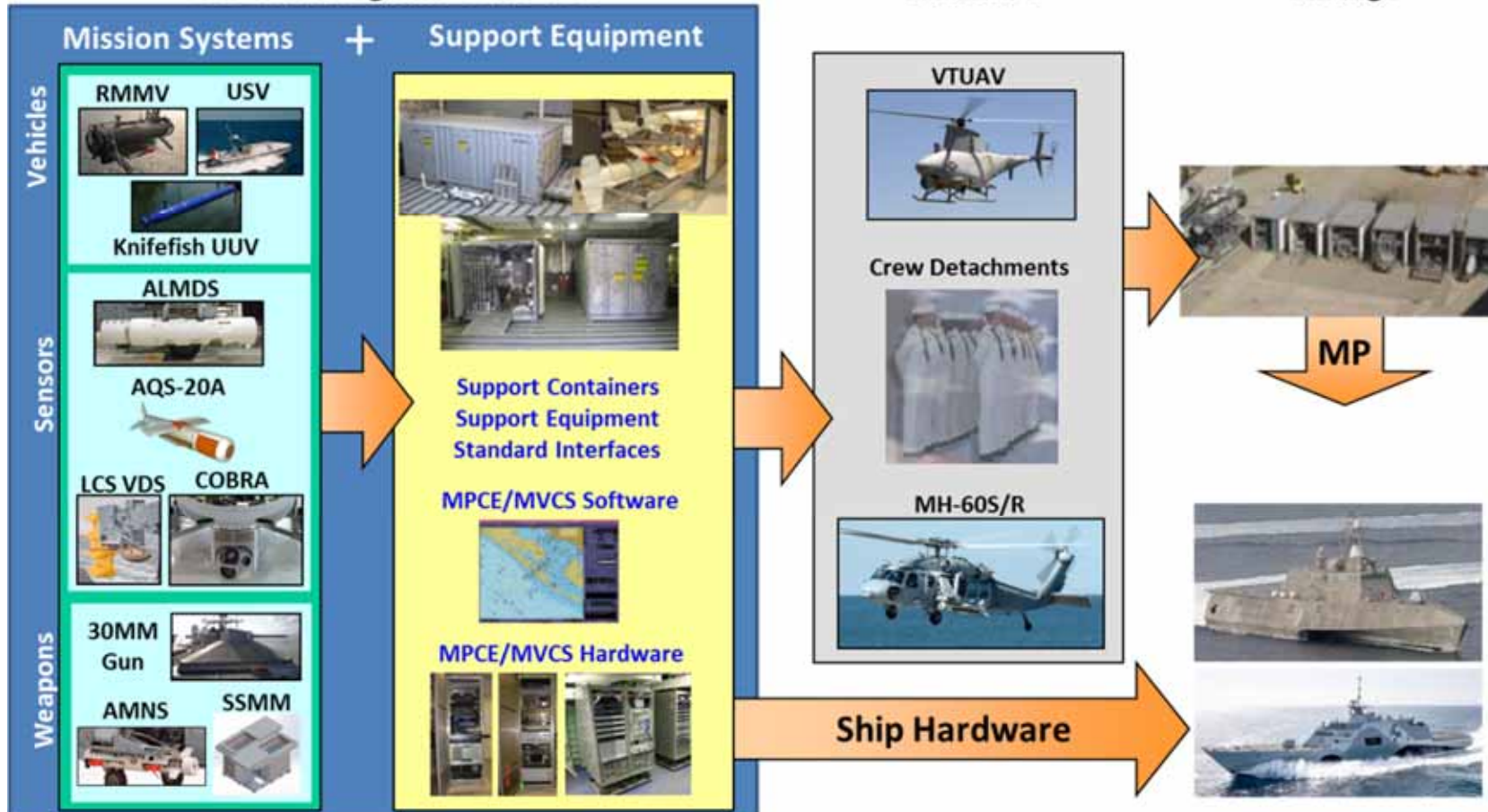
MISSION MODULE  
LCS MM Program – PMS 420

+

CREW & SUPPORT  
AIRCRAFT

=

Mission  
Package



Mission System = Vehicles, Communications, Sensors, and Weapon Systems

Mission Modules = Mission Systems + Support Equipment + Software

Mission Package = Mission Modules + Crew Detachments + Support Aircraft



# LCS MCM MP Increment 1 – Mission Overview



Preparation to deploy  
(BIT Check)



Mission system mounted  
on vehicles (Q20 to RMMV)



Mission vehicles launched from the ship



Begin conducting mission  
operations



Conduct ALMDS search mission  
(3 + 1 Tactic w/ PMA)



Conduct RMS Search, Pruning, and PMA mission



Conduct RMS EOID  
(Bottom Mines)

OR



Conduct AMNS ID/Neutralize  
(Volume/Bottom Mines)



Recover vehicles



# LCS Mission Modules Technology Interest Areas



## **Autonomy**

- In the absence of communications, the ability to stay on mission or recover to a safe point and seamlessly integrate with a common communications architecture
- Obstacle Avoidance, both surface and submerged

## **Efficient Off-board Vehicle Management**

- Ability to coordinate and monitor multiple off-board systems with minimal manning
- Common control architecture/systems

## **Over the horizon high band width vehicle/sensor data transfer**

## **Mine Countermeasures (MCM) specific:**

- Detect to ID in single pass; low cost ID and neutralization
- Automated Target recognition. Rejection of false (non-mine) sonar calls
- Highly accurate navigation (LAT/LONG/DEPTH)
  - Ability to place towed/fixed sensors to support reacquisition of underwater targets



**QUESTIONS?**