



## *Status of Unmanned Systems: EXECUTING!*

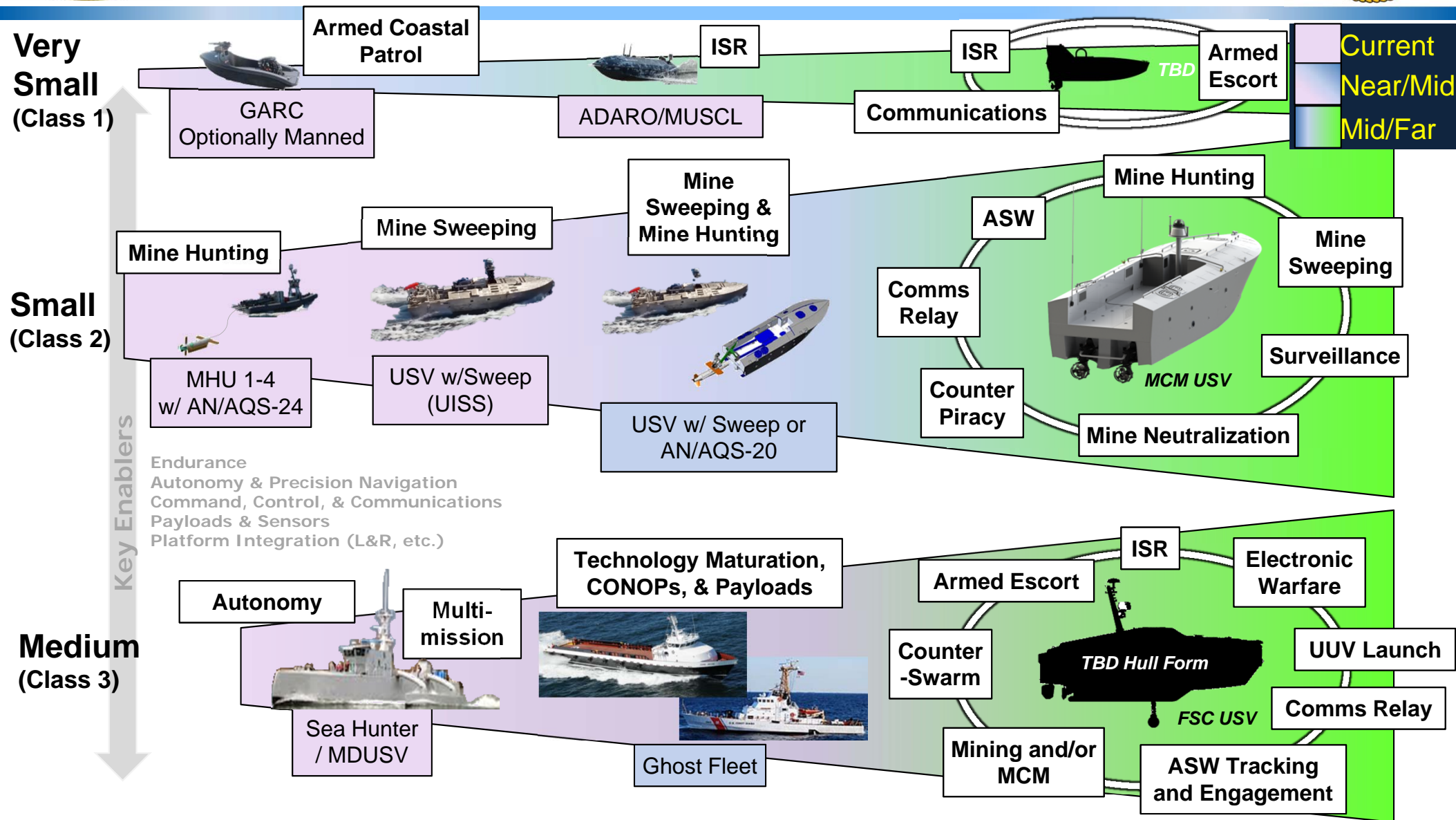
*CAPT Jon Rucker  
Program Manager  
PMS406  
Jan 2018*





# USV Systems Vision

## Enhanced, Efficient Capabilities



**Efficient, Executable Progression of Capabilities onto Common USV Hull Forms**

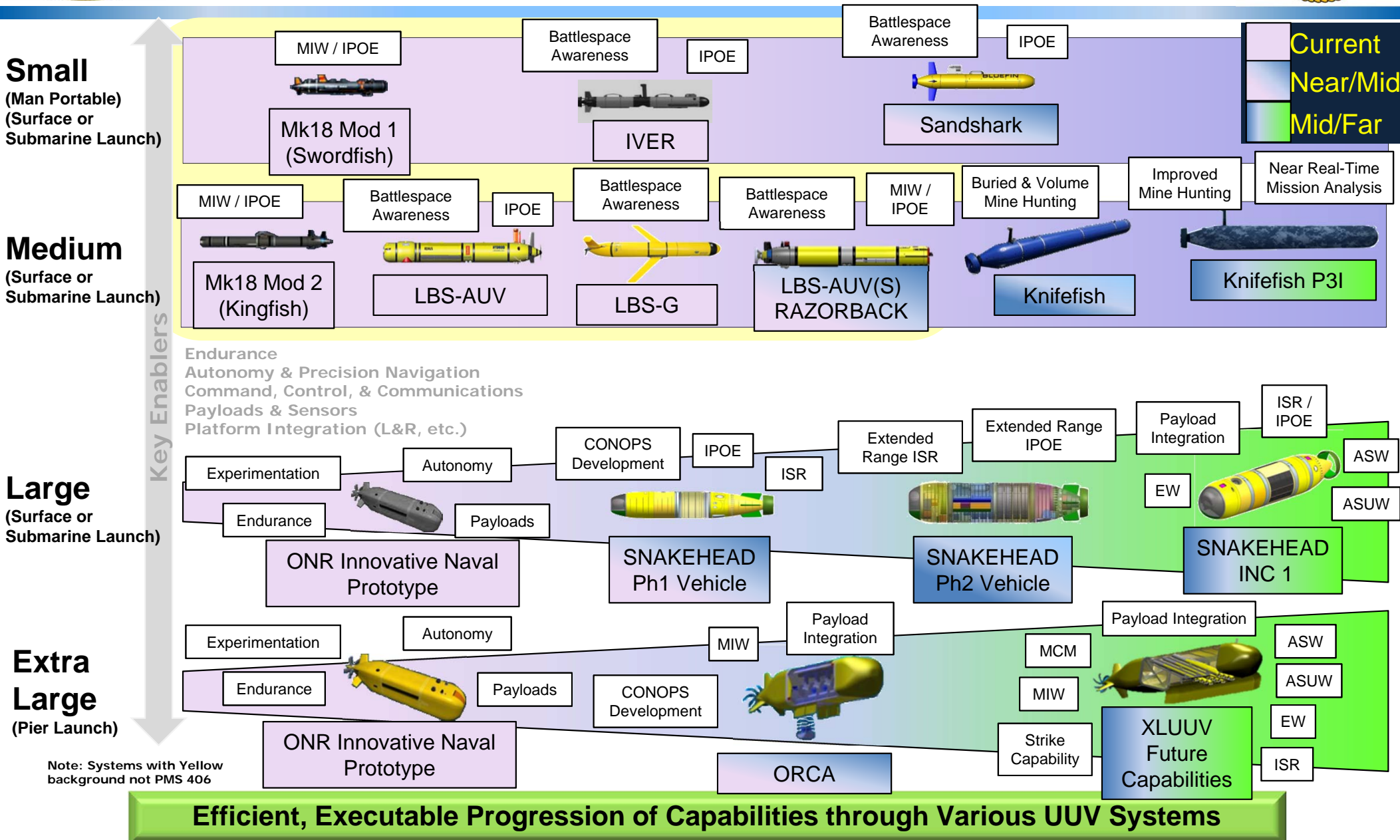
Distribution Statement A: Approved for Public Release; Distribution Unlimited. This Brief is provided for Information Only and does not constitute a commitment on behalf of the U.S. government to provide additional information and / or sale of the system





# UUV Systems Vision

## Enhanced, Efficient Capabilities



Note: Systems with Yellow background not PMS 406



# 2017 USV Accomplishments

## ➤ Minehunting USVs (MHUs) continue to support C5F in-theatre training and operations

- AN/AQS-24B upgrade integrated with MHU in February 2017

## ➤ Unmanned Influence Sweep System continues Contractor Testing

- Completed over 350 hours of in-water testing to date
- Currently in Builder's Trials, will commence Navy DT/OA in the Spring with Milestone C in 4QFY17

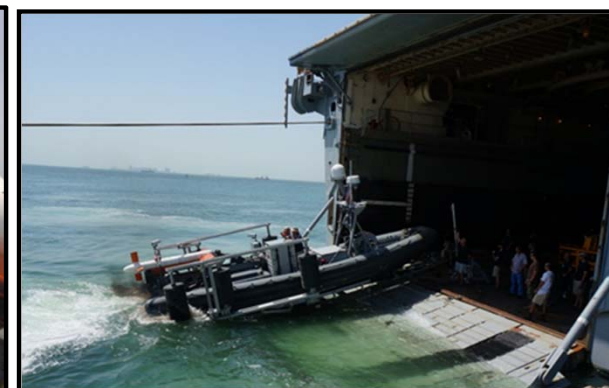
## ➤ MCM USV + Minehunting continues development

- USV craft contract (2 units) awarded in March 2017
- Construction & Payload Integration continue through late FY18 / early FY19, followed by Integration & Testing to support initial Operator Testing in FY19

## ➤ AQS-20C production units continue contractor testing

- Delivery of 10 units starting in Spring 2018
- Navy DT is on track for Q3FY17

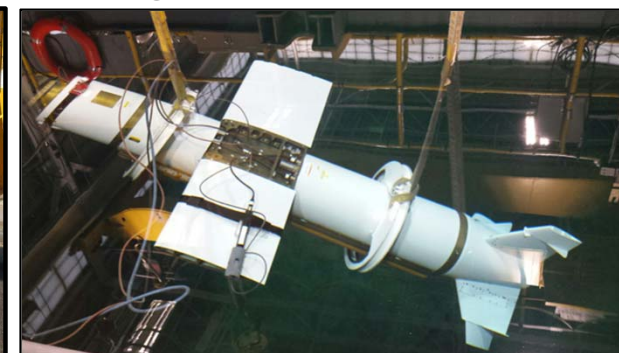
### MHU Operations



### Unmanned Influence Sweep System (UISS)



### AQS-20C Testing



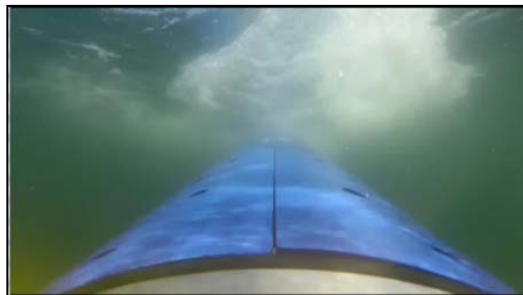




# 2017 UUV Accomplishments

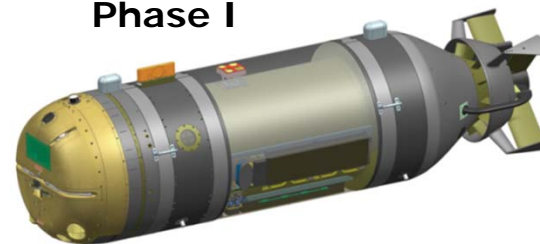


## Knifefish Testing



- **Knifefish UUV will provide LCS and Vessels of Opportunity volume, bottom, and buried minehunting capability**
  - Contractor Trials completed & the system performed extremely well
  - Sea Acceptance Trials are currently in progress
  - DT/OA will commence in February with Milestone C planned Q3FY17
- **Snakehead LDUUV is executing design efforts**
  - Program completed Phase I system Preliminary Design Review
  - Detailed design is in progress
  - Initial hull long-lead raw material is on order
- **Orca XLUUV will be a modular, open architecture UUV, with a payload section**
  - Phase I Design Contracts awarded to Lockheed Martin & Boeing, 28 September 2017
  - Executing design efforts with follow on production starting in FY19

## Snakehead LDUUV Phase I



## Orca XLUUV Concepts





# Summary



- **Unmanned systems are high growth**
  - Key component for both LCS & Undersea Enterprise
  - Integrated with manned platforms to provide warfighting advantage to commanders at all levels
- **Family of Systems approach and Visions provide path for executing Navy's plans**
- **Technology and innovation are our enablers**
- **Key technical areas for USV/UUV development**
  - Endurance
  - Autonomy & Precision Navigation
  - Command, Control, & Communications
  - Payloads & Sensors
  - Platform Integration (Launch & Recovery, etc.)

**Unmanned Systems are Vital Part of Future Navy Force**



*Questions?*







# Acronyms

- **ASUW: Anti-Surface Warfare**
- **ASW: Anti-Submarine Warfare**
- **AUV: Autonomous Unmanned Vehicle**
- **C2: Command and Control**
- **C5F: Commander, Fifth Fleet**
- **COMMS: Communications**
- **DT: Developmental Testing**
- **EW: Electronic Warfare**
- **FSC: Future Surface Combatant**
- **FY: Fiscal Year**
- **GARC: Greenough Advanced Recovery Craft**
- **IOC: Initial Operational Capability**
- **IPOE: Intelligence Preparation of the Operational Environment**
- **ISR: Intelligence, Surveillance, & Reconnaissance**
- **L&R: Launch and Recovery**
- **LBS: Littoral Battle Space**
- **LCS: Littoral Combat Ship**
- **LDUUV: Large Displacement UUV**
- **MCM: Mine Countermeasures**
- **MDUSV: Medium Displacement USV**
- **MHU: Minehunting USV**
- **MIW: Mine Warfare**
- **MUSCL: Modular Unmanned Surface Craft Littoral**
- **OA: Operational Assessment**
- **ONR: Office of Naval Research**
- **Ph 1: Phase 1**
- **REMUS: Remote Environmental Monitoring Unit System**
- **SAS: Synthetic Aperture Sonar**
- **UISS: Unmanned Influence Sweep System**
- **USV: Unmanned Surface Vehicle**
- **UUV: Unmanned Undersea Vehicle**
- **XLUUV: Extra Large UUV**