



# Rapid Environmental Assessment with Iver UUVs



## AT A GLANCE

### WHAT IT IS:

Rapid Environmental Assessment (REA) provides a characterization of the physical environment to increase mission effectiveness, reduce risk, and reduce timelines for operational units arriving onscene. In the REA phase of Unmanned Warrior 2016 (UW16), mobile unmanned systems (Iver 2/3 UUVs) are employed for measurement and data products.

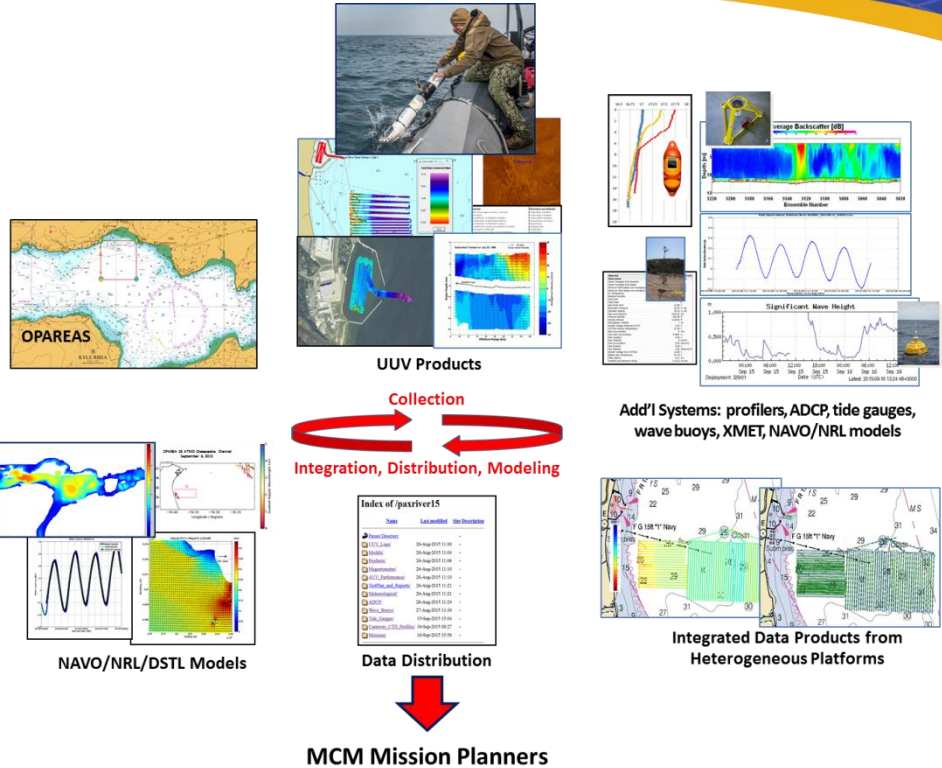
### HOW IT WORKS:

The REA phase of UW16 relies on unmanned (Iver UUVs) and traditional survey tools for environmental characterization. The Fleet Survey Team and the Naval Oceanography Special Warfare Center will support operations. Data product generation will target rapid response (24 hr) to mission planners.

### WHY IT IS IMPORTANT:

An accurate characterization of the physical environment is critical in planning tactical operations. Oceanographic parameters often require in situ sensing, and unmanned systems can be the most effective platform in operational scenarios.

*\*Unmanned Warrior is part of exercise Joint Warrior 2016, hosted by the United Kingdom off the North-West coast of Scotland.*



Rapid Environmental Assessment (REA) enables increased clearance rates for Mine Countermeasures (MCM). UW16 will employ the REA phase of Hell Bay 4 to ensure environmental characterization data can be provided to mission planners early enough to impact operations planning (specific environmental parameter were developed and vetted through The Technical Cooperation Program\* (TTCP), key technical area team and operational units from countries within the TTCP partnership).

Resources and personnel from three of the TTCP nations will be onscene to support execution of REA operations. The key objectives in this project include discernment of the impact provided by REA to MCM effectiveness, and the real and operational costs associated with the REA process relative to the benefit provided.

Early project work by UK MOD teams with both manned and unmanned survey systems will be used to contrast the effort and data product accuracy across a variety of environmental characterization systems and concept of operations. This will be used to evaluate the benefits of manned/unmanned system collaboration in survey operations. The value of unmanned systems in covert environmental characterization will be evaluated through extended transit missions with no onscene oversight.

### Research Objectives for US in Unmanned Warrior 2016:

- Cooperative development of REA survey CONOPS
- Comparison of survey equipment performance and selective application
- Data product refinement and optimal distribution

*\*An alliance between US, UK, Canada, New Zealand and Australia*