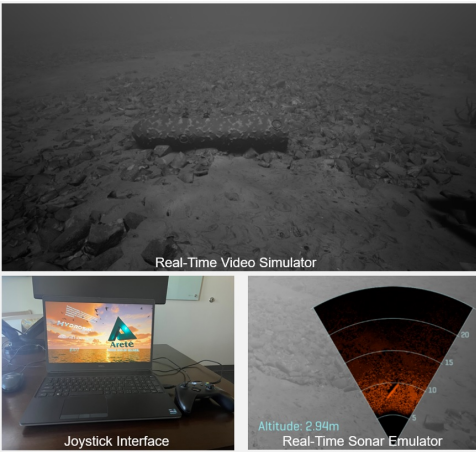


WHO

**SYSCOM:** NAVSEA  
**Sponsoring Program:** NAVSEA  
**Transition Target:** Barracuda Mine Neutralization System  
**TPOC:** (850) 628-6685  
**Other Transition Opportunities:** Navy UUV and ROV Programs

Notes:



Arete Associates

WHAT

**Operational Need and Improvement:** Develop a physics-based simulator providing real-time subsea sensor data for AI/ML algorithm development and operator training.

**Specifications Required:** Realtime subsea video and sonar imagery generation  
Physics-based  
Interactive and automated modes  
Ethernet streaming interface enables Software in the Loop (SiL) functionality  
Automated mode enables AI/ML algorithm development and validation  
Interactive mode enables operator training and mission planning  
Modularity allows new targets / threats to be introduced

**Technology Developed:** HydroSIM Version 1.0

**Warfighter Value:** Synthetic imagery generated by HydroSim reduces the number of missions needed to develop robust AI/ML algorithms for autonomous platforms.  
Real-time interaction enables operator training and mission planning.

WHEN

Contract Number: N68335-22-C-0655      Ending on: Sep 20, 2024

Milestone	Risk Level	Measure of Success	Ending TRL	Date
HydroSim 1.0	Low	Demonstration	6	3rd QTR FY23
HydroSim 2.0	Low	Demonstration	6	4th QTR FY24
HydroSim 3.0	Low	Validation	6	4th QTR FY25

HOW

**Projected Business Model:** Data as a service (DaaS) for AI/ML development and interactive trainers for operators

**Company Objectives:** Seeking new DoD partners who need additional subsea sensory data to train AI/ML algorithms.

**Potential Commercial Applications:** Improving subsea inspection autonomy with physics-based synthetic data.