

COordinated Multi-domain Engagement Teams (COMET)



Clockwise from bottom left: Mokai USV FPV image; ScanEagle aerial image of USV pursuing target vessel; SeaFox USVs on Lake San Antonio

Problem Statement

- A hybrid future force will rely on IAS to deliver ISR-T and interdiction capabilities in support of DMO/EABO.
- Successfully engaging targets in GPS-denied areas will require multi-domain coordination by UAS-USV teams.
- Scenario: Enable a UAS-USV team to autonomously find, track, identify, and/or interdict a target vessel
- We will develop and integrate three key components:
 - Perception algorithms for distinct UAS and USV perspectives
 - Methods for GPS-free UAS self-navigation and UAS-aided USV navigation
 - Communication schemes to enable coordinated behaviors

Impact

- Emphasis on field-testing with tactically relevant IAS in realistic maritime environment
- Opportunities for new interdisciplinary research partnerships across NPS (MMT, Secure C2, etc.)
- Student engagement: supports multiple NPS theses
- Warfighting impact: decreasing reliance on GPS and reducing burden on human operators will unleash force multiplication by IAS
- Success metric: field-test and demonstrate capability

Transition

- ONR (Science of Autonomy, Expeditionary Robotics)
- Naval Special Warfare Command (N8, N9, N35)
- NSWG-4, NSWG-8, SRT-1, SBT-12
- PMA-263 provided letter of intent to support
- Ongoing partnerships with PMA-263, NIWC-Pacific, Boeing/Insitu (ScanEagle) and NSWC-Carderock (USV)
- USCG Unmanned Systems Strategic Lead expressed interest in collaborative research & experimentation