

Surface Unmanned Systems and the Role of Autonomy's Effect

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Chairman

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About the NATO JCGMUS

- Established as a full Joint Capability Group 2024
 - Thicken pan-NATO linkages
 - Extension of the NATO Maritime Unmanned Systems Initiative started in 2018
- Membership from all NATO nations plus invited Partners
 - 32 + AUS & NZL
 - Several Pacific Partners Observing in 2024



Vision

Improve the operational effectiveness, interoperability and interchangeability of unmanned systems integrated within Allied maritime warfighting structures through life, from research and development through acquisition to operational deployment.

Mission

Accelerate, through multi-national cooperation and innovation, the delivery of Alliance and Partners' maritime capabilities across the DOTMLPFI spectrum, via exploitation of Maritime Unmanned Systems, and contribute to the resolution of maritime capability shortfalls to maintain battle-winning advantage.

- Current use of unmanned systems in the surface world
- How this technology is evolving and what it can bring to the Navy
- Future concepts and usage of autonomy & AI



Current use of unmanned systems in the surface world

- Long Range Plans
- Current Operations
- Alternate Concepts



Fires Capacity/Range



MDA/ISR/IPOE



Current use of unmanned systems in the surface world

Traditional Concepts augmented by UxS

- Shoot, Maneuver, Defend, and Resupply
- Long Range plans augment high-end capacity and capability
- Current efforts offload sensors and effectors
- Alternate concepts challenge the way we hold assets at risk



Terminal Defense



Logistics



How this technology is evolving and what it can bring to the Navy

- Changing the way we think and plan
- Changing the way we operate
- Changing the way we field and service

How this technology is evolving and what it can bring to the Navy

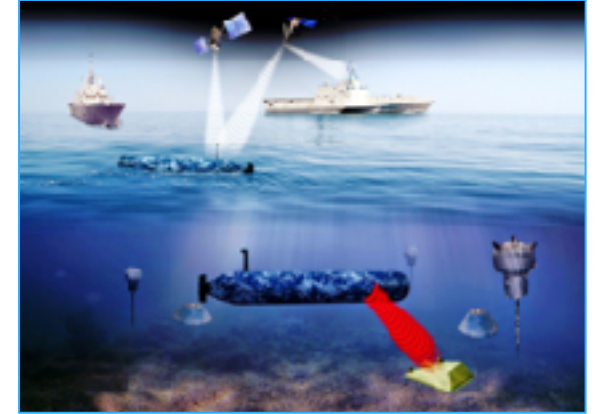
Augmenting the battlefield today, changing the future tomorrow

- Small systems that can be produced quickly during conflict
- Preserving Capital Assets with distributed low end effectors
- Creating transparency to dissuade malign clandestine aggression
- Changing the way we procure and develop capabilities

Low end on demand



Preserve the Force



Nowhere to hide



Civil Augmentation

Future concepts and usage of autonomy & AI

- Autonomy for purpose
- Data as a resource
- Interoperability to scale

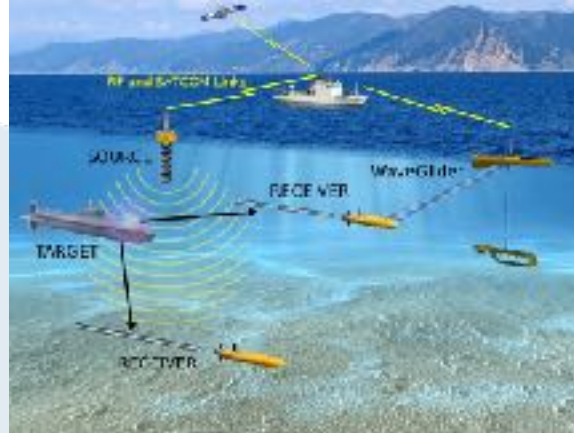


Future concepts and usage of autonomy & AI

Active Efforts within the Alliance

- Smart defense projects and DIANA
- Critical Undersea Infrastructure
- Digital Ocean- Space to Seabed
- I2I to support Transferable MUS

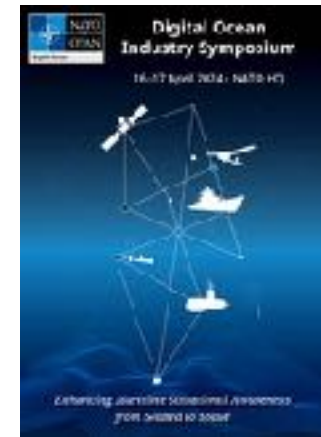
ASW SDI



CUI



Transferable MUS



Digital Ocean

ASW Barrier SDI as a Digital Ocean Pilot

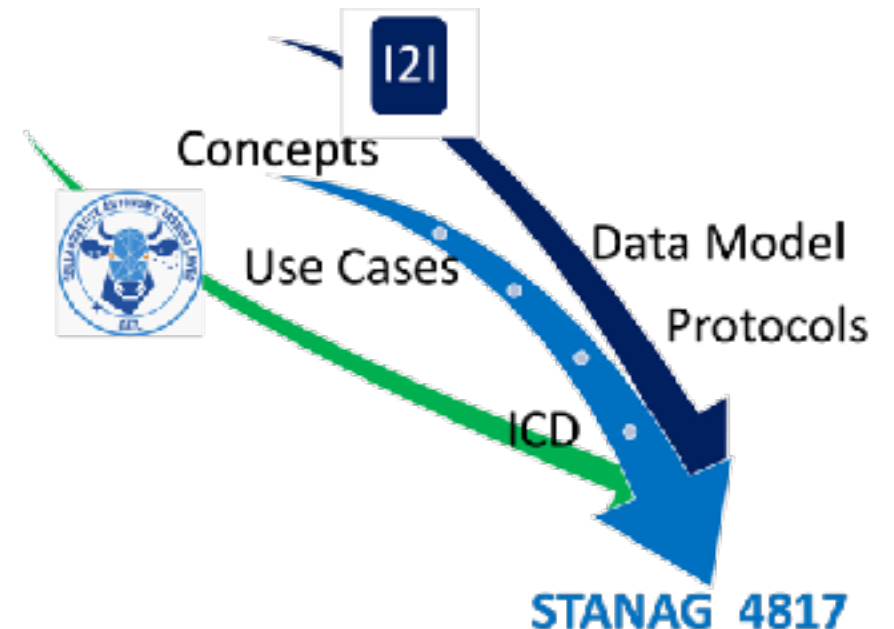
Develop a technical demonstrator comprising both legacy and interoperable MUS to securely provide a force multiplying ASW capability - 'Hold at Risk'

- 12+1 nations plus signatory stakeholders (NATO CMRE and MARCOM)
- 5 work packages spanning concepts, doctrine, maturity frameworks, C2 & interop
 - Each owned by a nation/entity to drive concurrency
- Allied Underwater Battlespace Mission Network - *common digital backbone* - seen as a key enabler
 - Industry challenge launched to develop a Reference Architecture and a Test and Reference Environment
 - Goal is to deliver a demonstrator at REPMUS 25



Interoperable Command and Control (C2) of multi-domain Unmanned Platform Control Systems

- Enable NATO missions to incorporate UxS across multiple vehicle domains
- Achieve desired mission effects as part of a coordinated multi-national force
- 2024 roadmap
 - Data modelling: convergence into a common model
 - Reference implementation
 - Improve architectures
 - Implement new services (e.g. chat)
 - REPMUS 24 focus for validation and refinement





OPEX & REPMUS



Future concepts in operational environments

- True Multinational I2I at the mission, system, and C2 levels
- Current C2 ashore driving to C2 Afloat
- Validating Interoperability at scale

A row of international flags on tall poles against a sunset sky. The sun is low on the horizon, creating a warm, golden glow. The flags are of various colors and designs, including the German flag, the United States flag, and others. The sky is a mix of blue and orange.

Key Points:

- US, NATO, and broader Allied Naval Communities are all in for autonomous systems. This is a global effort for good, not a heroic effort of the few.
- Build for interoperability if you want scale.
- Systems don't have to be exquisite for use today, but they have to work within the context of where we plan to send them.
- We have as many challenges in the handling, employment, and sustainment of these systems as we do with the performance at large.
- The defense enterprise must change if we are to field Autonomous systems together, we must build trust in peacetime as we cannot afford to progress autonomy in crisis only.



Questions ?

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