

# Integration beyond Boundaries

An industry perspective on enabling system of systems approach to delivering military capability

Navy Tech 2025 : Helsinki, Finland

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The ability to make faster and better-informed decisions, combined with access to assets that deliver quick, coordinated, and effective outcomes, is increasingly important.

This requires an integrated approach, supported by autonomy at all levels.

## The changing nature of warfare

The character of warfare continues to rapidly evolve at a pace driven by conflict on our doorstep, with developments happening on the battlefield within hours and days rather than weeks and months.

### UxV

The proliferation of both remotely piloted and AI enabled autonomous systems poses a serious threat to the existing defence products and capabilities.



### Hypersonics

Militaries need to rapidly sense and characterise threats in order to appropriately counter them in a cost effective manner in every domain.



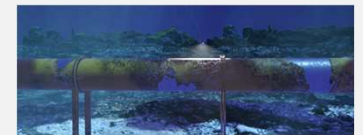
### Cyber

Adversaries use and exploitation of deception & cyber techniques (offensive & defensive) both sub-threshold and during conflict is ever increasing.



### CNI

Protection of Critical National Infrastructure is becoming increasingly important for nations over long distances in complex territories.

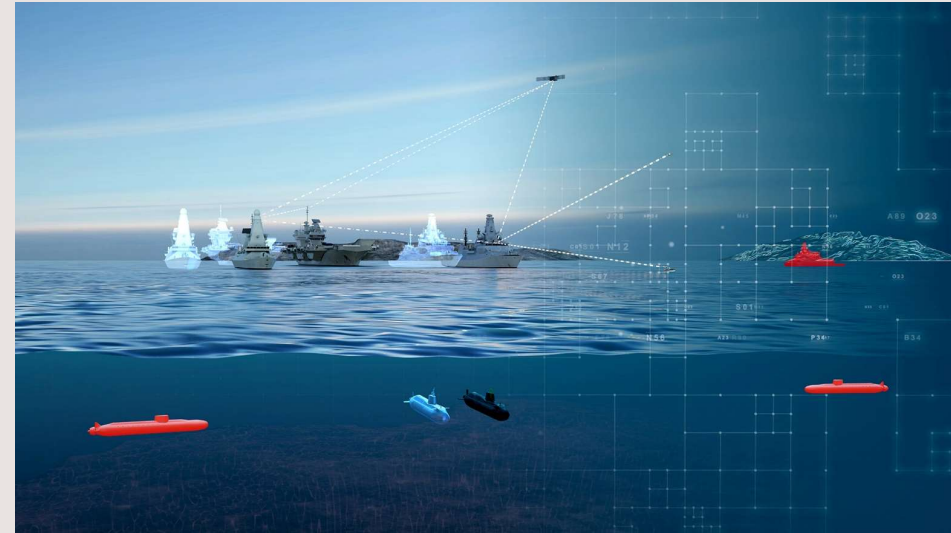


Data Synthetics  
Multi-domain Digital Integrated  
Combat Mass Digital Interoperable  
**Collaboration**  
Disaggregated Resilient Agile Dispersed  
Cloud Autonomous Agile Networked  
Modular Assured AI/ML

# Integrating a multi-domain battlespace...

## Key challenges:

- We cannot revolutionise defence capability overnight
- New systems and equipment must be integrated with existing and be evolved over time
- Common standards are only part of the answer
  - Customer eco-systems need to be **resilient** to change
  - Recognised System of System **boundaries & interfaces**
  - Use of a **common data layer** – translation & other common services
- **Flexible development** – modular architecture as the foundation
- Identifying commonality & solutions from **adjacent industries** – e.g.: Automotive, Fintech SWIFT

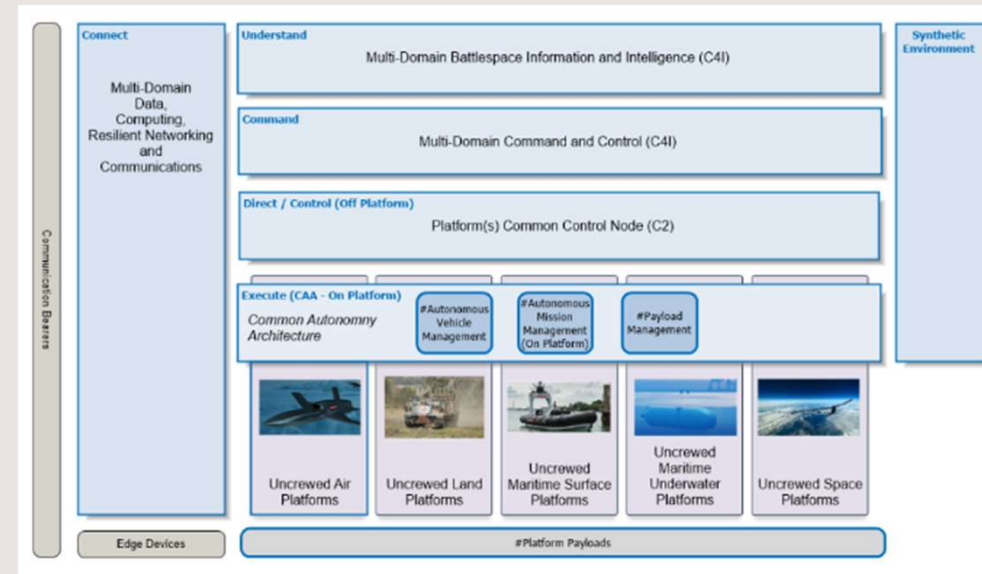


A collaborative and coherent strategy is required to achieve multi-domain integration of the battlespace

# System of Systems Framework

- BAE Systems MDI development is an approach to coherent product and platform integration for a multi-domain system of systems
- The Systems of Systems Integration aims are to work across the different products and platform to:
  - Jointly develop a Common SoS Architecture model
  - Encourage coherence and alignment of products and interfaces within that architecture
  - Co-ordinate work on themes of mutual interest across the ecosystem
  - Help foster integration and co-ordinate SoS integration trials / demonstrations
  - Establish a robust SoS assurance approach

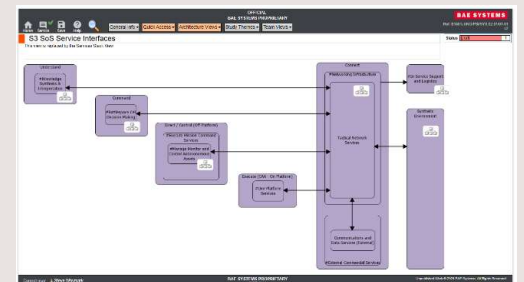
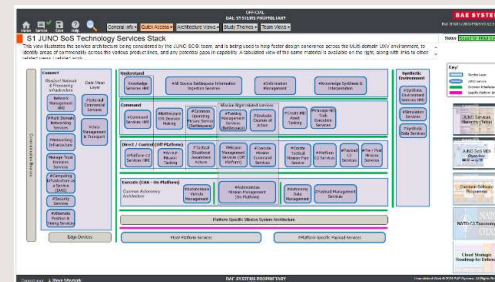
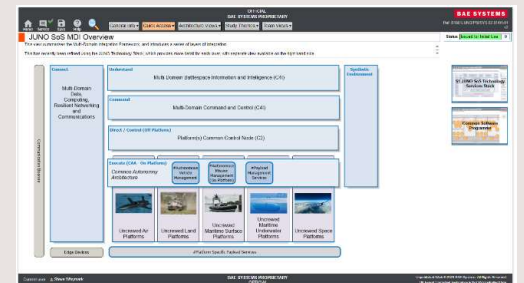
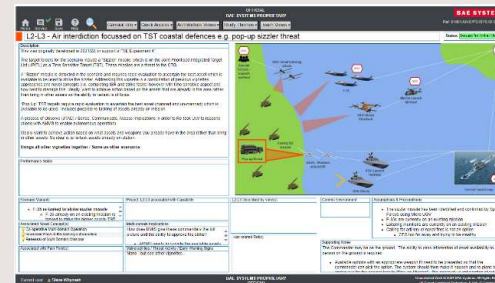
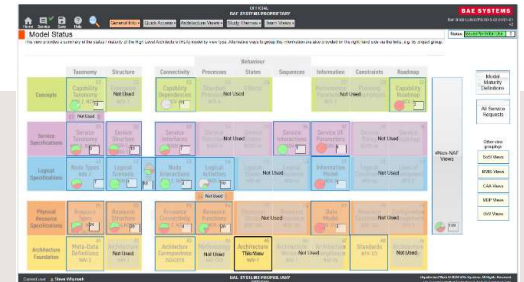
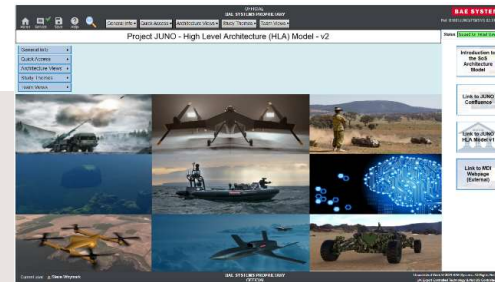
Develop SoS Architecture – Foster Integration –  
Generate Common Topics – Highlight Future Development Needs



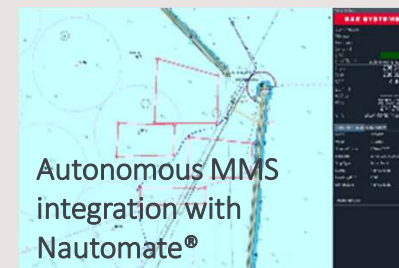
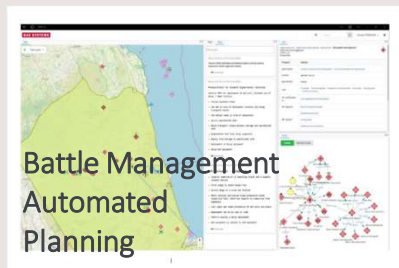
Co-create & Cohere

# System of Systems Architecture

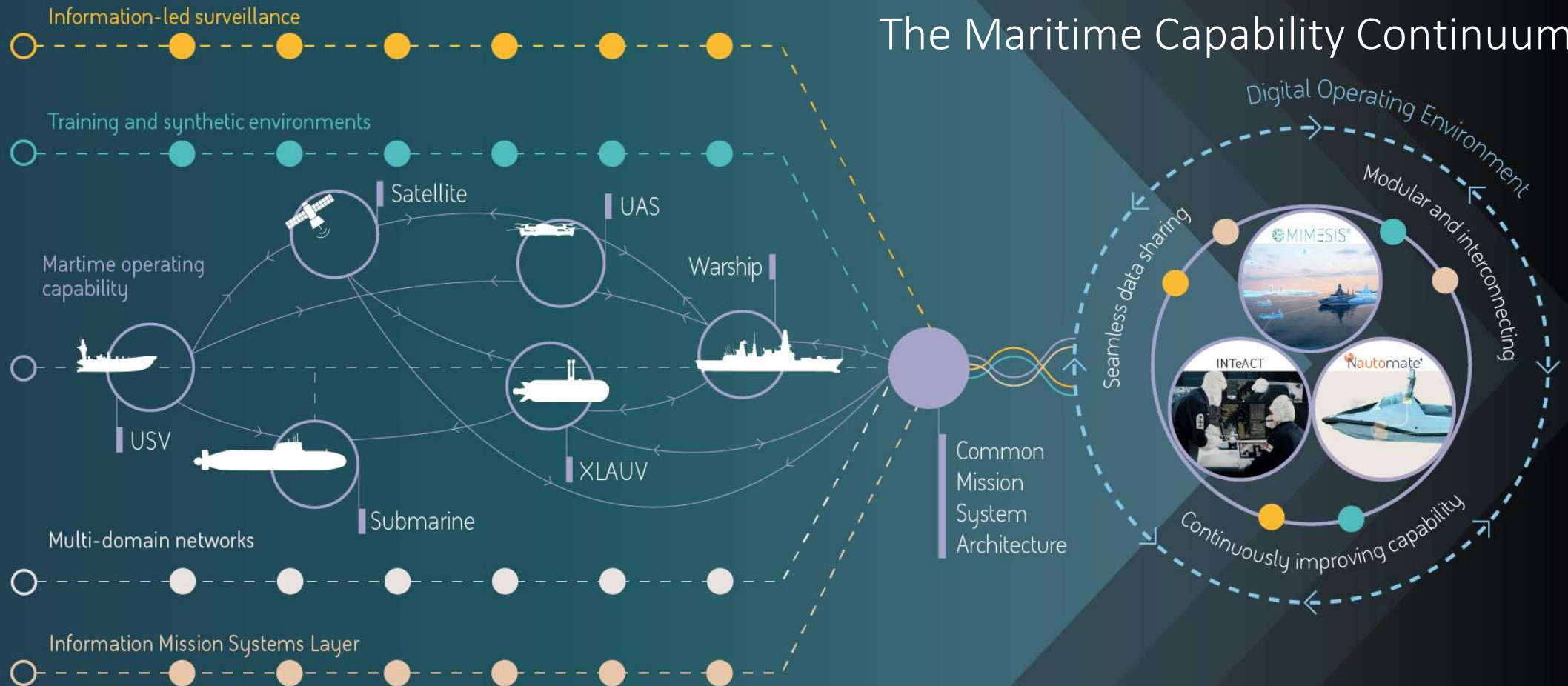
- Problem driven product solutions fitting in an open architecture to meet defence's requirements
- Common integration and test environment
- Common component libraries
- Open interfaces (in line with UK MoD)
- Codeathon – SME engagement and collaboration



# Achievements 2024



# The Maritime Capability Continuum





Questions...?



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11

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