Maximising MCM Information Sharing
Combined Naval Event – May 2023

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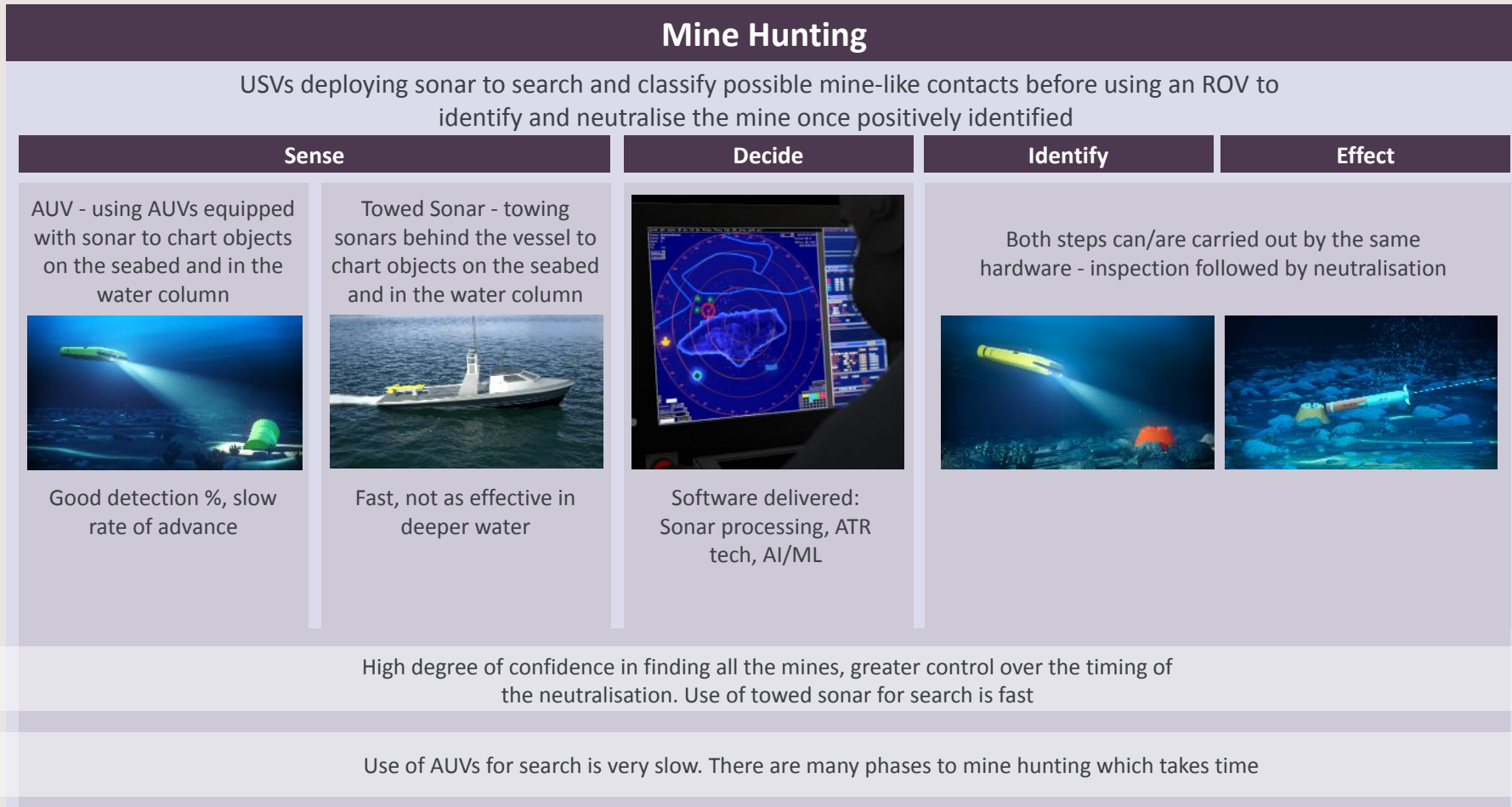© BAE Systems

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Introduction

- The problem
- Technology
- Networks
- Collaboration
- Q&A

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Mine Countermeasures

Mine Hunting

USVs deploying sonar to search and classify possible mine-like contacts before using an ROV to identify and neutralise the mine once positively identified

Sense		Decide	Identify	Effect
AUV - using AUVs equipped with sonar to chart objects on the seabed and in the water column	Towed Sonar - towing sonars behind the vessel to chart objects on the seabed and in the water column		Both steps can/are carried out by the same hardware - inspection followed by neutralisation	
Good detection %, slow rate of advance	Fast, not as effective in deeper water	Software delivered: Sonar processing, ATR tech, AI/ML		

Strengths

High degree of confidence in finding all the mines, greater control over the timing of the neutralisation. Use of towed sonar for search is fast

Weakness

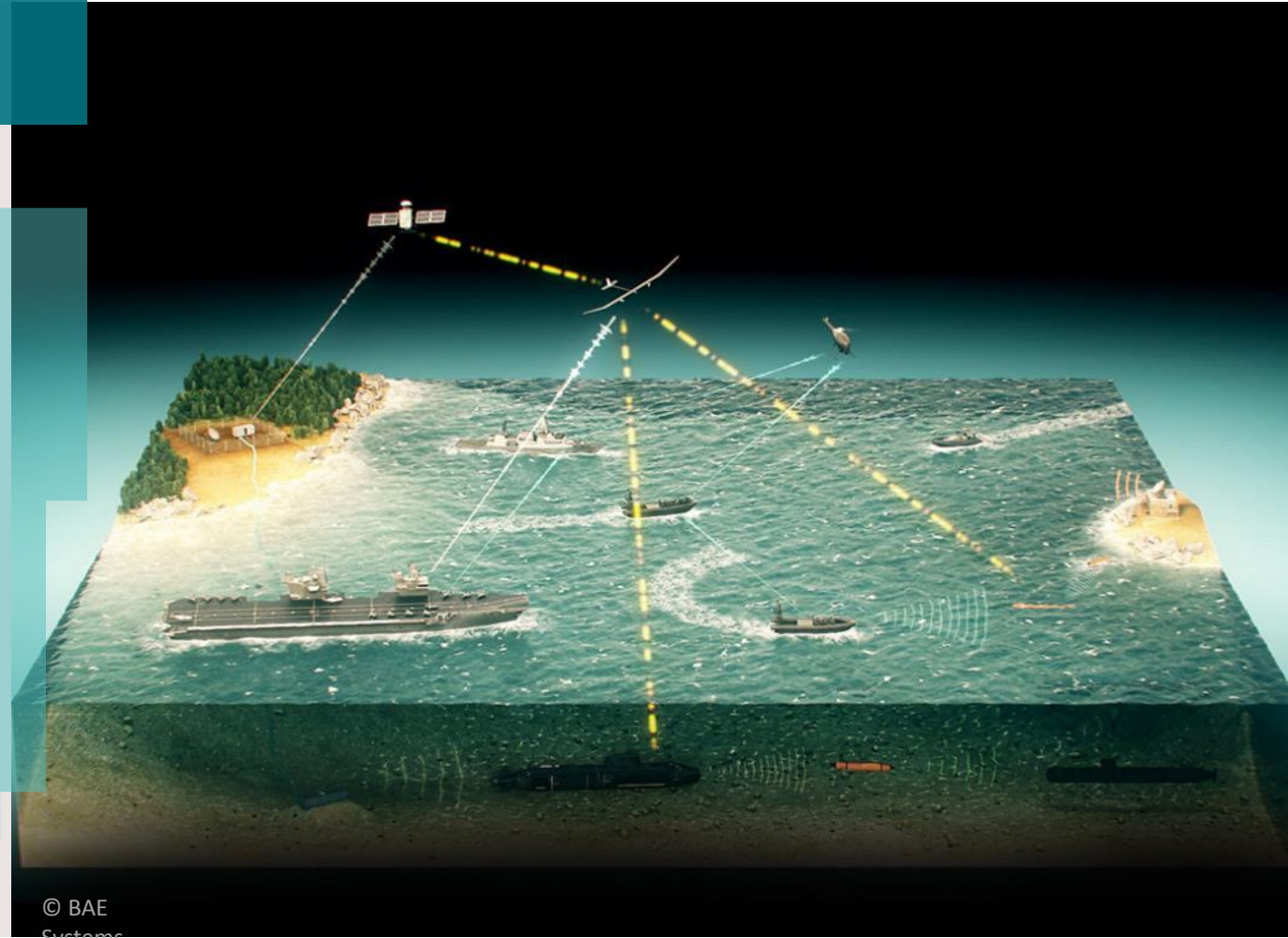Use of AUVs for search is very slow. There are many phases to mine hunting which takes time
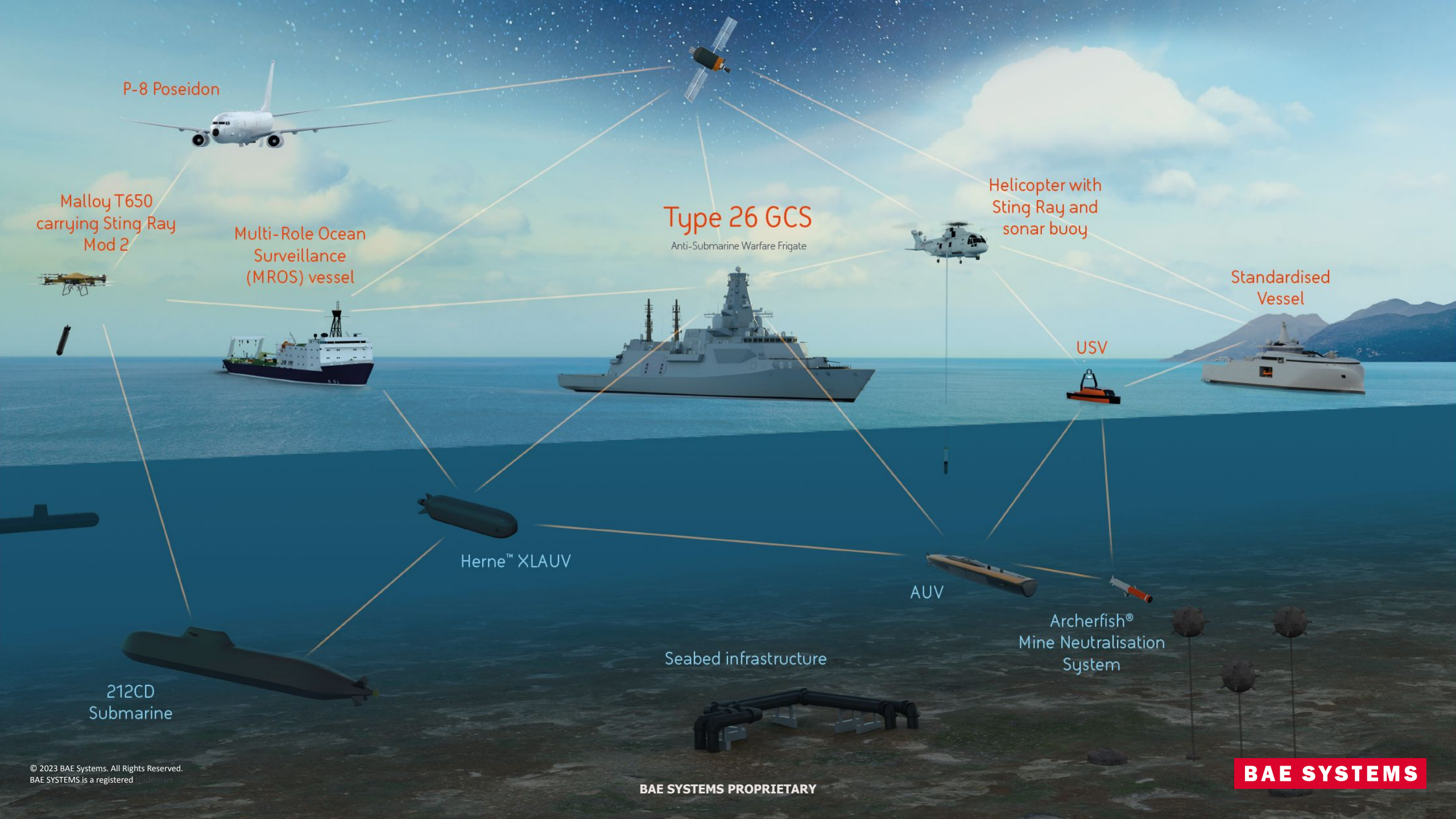
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The problem

- Starting position
  - Current and planned capabilities
  - Mission sets
- Growth in activity
  - Last invisible space
  - Military proliferation
  - Rise in commercial usage
  - Geo-politics
- Scale of the problem

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P-8 Poseidon

Malloy T650
carrying Sting Ray
Mod 2

Multi-Role Ocean
Surveillance
(MROS) vessel

Type 26 GCS
Anti-Submarine Warfare Frigate

Helicopter with
Sting Ray and
sonar buoy

Standardised
Vessel

USV

Herne™ XLAUV

AUV

Archerfish®
Mine Neutralisation
System

212CD
Submarine

Seabed infrastructure

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Networks and bearers

- Need for networks

- Above, below and through the surface

- Likely problems and potential solutions

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Technology solutions

- AI
- Big Data
- Human Machine Interface

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Human machine interface

- People still likely to be key for foreseeable future
- Massive increase in information

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Collaboration

- Why collaboration?

- A military and industry problem

- Need for doctrinal clarity

- Moving forward

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