Future Air Dominance System

Capt David Goldsmith
DE&S Ships Acquisition – Innovation and Future Capability

Enhancing range/distance/accuracy for future air dominance

- Enabling the UK's next generation air defence capabilities
- How do you achieve autonomous protection with weapon systems
- How the T83 may be the next solution

FADS Concept – <Situation>

Ukraine highlights the effort needed to break into a sophisticated Anti- Access Area Denial (A2AD) architecture and the value of denying another's access.

Recent world events have underlined the need for increased lethality over longer ranges to maintain freedom of manoeuvre. They present an opportunity to re-review the implication for A2AD doctrine and associated enabling technologies in future warfare.

FADS is critical to achieving operational advantage as we exploit the opportunity offered by the upcoming Type 45 Destroyer out of service dates to pivot from defence to lethality.

- Dominating Air Warfare and defeating targets of any shape, aspect or velocity at sea is vital to enable the Royal Navy to conduct Maritime Task Group warfighting 'at reach'.
- The necessary access and manoeuvre to be able to strike from platforms is fundamental to the RN's fighting doctrine: if it cannot protect itself, it cannot fight.
- Proliferation of long range, fast and effective capabilities by peer adversaries require offensive maritime strike capabilities to enable Theatre entry and to strike enemy centres of gravity at range.
- Increasing the strike capability of the RN is a strategically efficient way of not only increasing survivable combat power, but for engagement and deterrence in a more sustainable posture.

FADS Concept – <Requirement WIP>

The ability to conduct strike is fundamental to the RN's vision and FADS must be capable of contributing to this.

Force composition is rarely known in advance of operations; platforms need to be able to turn up, plug into the Force and fight almost instantly.

Use a System of Systems Approach (SOSA)

FADS will be critical in unifying next generation capabilities across the RN, wider Defence and partners to meet the future threat

Transformative Programme:

Delivering credible air defence and long range precision strike is highly complex and challenging

adaptable to **pace a rapidly evolving threat**.

Will require **change in how the enterprise is currently configured** **to deliver:**

- MOD is still learning how to control/own the architectures and standards that will be needed to **decouple systems from platforms** and **open up the supplier base** and facilitate rapid update. FADS will be a key component of the modernise element of the Integrated Review.

Centrality of MDI culture:

- Operating across domains will allow FADS to be the maritime **contributor to wider UK MOD and international partner Air Defence networks and systems (eg FCAS, IAMD etc)**.
- Pan Domain Thinking

FADS Overview

Royal Navy's next generation AAW capability

Contribution to Defence Long Range Precision Strike capability

Maritime contribution to UK IAMD policy through Long Range Sense and Effect

Revolution in deliverability via a SOSA approach – capability driven procurement vice platform constrained

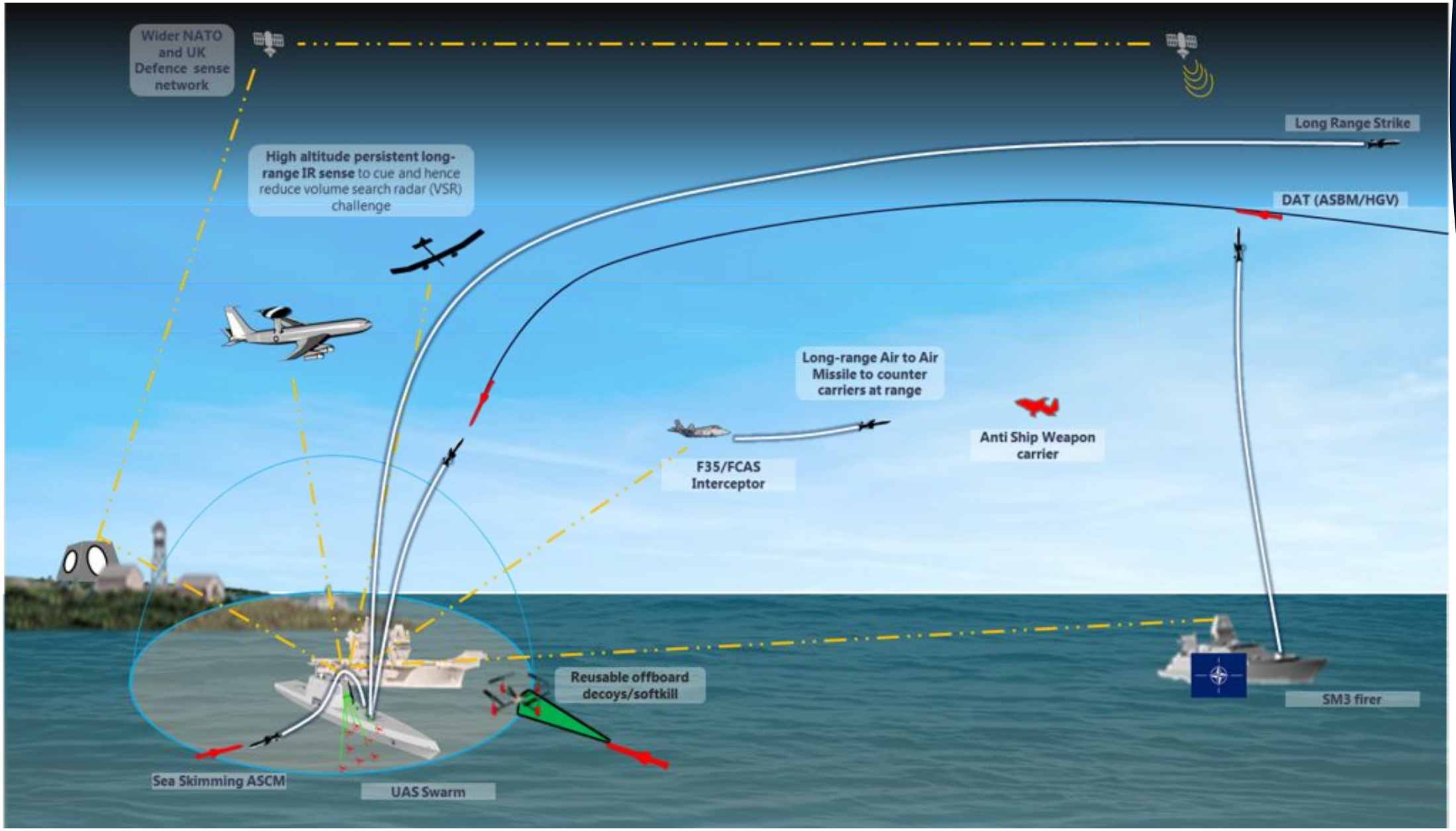
Meshing today's and tomorrow's sensors and effectors to provide 24/7/365 protection for the Carrier Strike Group

New generation platform, minimising crew requirements and maximising technology and autonomy

Seamlessly integrated into the wider battlespace and with our Allies, providing a truly Multi Domain capability

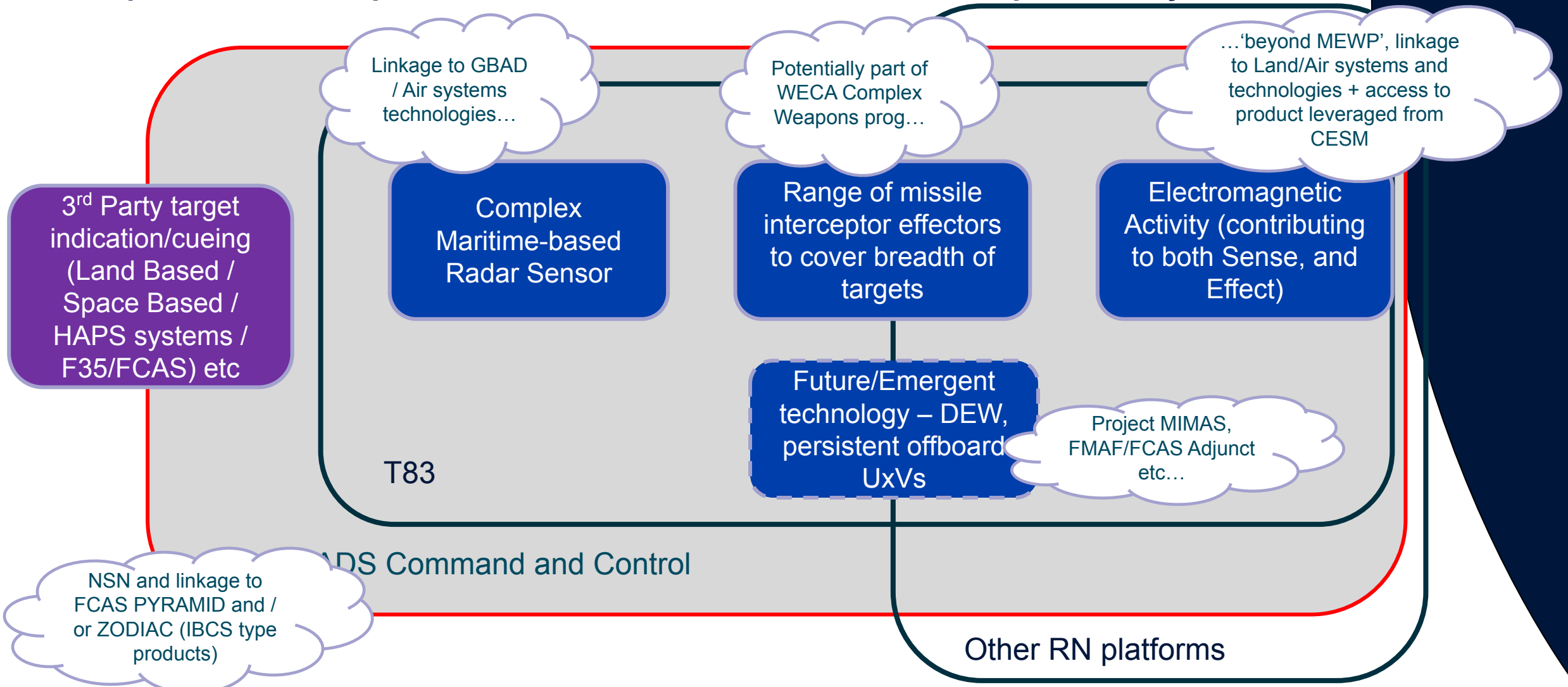
Requiring novel commercial approaches to deliver "Simple Platform – Complex System"

FADS Overview – more than just the T83



Cross cutting nature of FADS - linkage to other MOD programmes

Broad Requirement Assumption: Air Defence of the Maritime Task Group & delivery of Strike



Areas for Exploration

We value: the ability to update and upgrade capability at the pace of relevance through life, achieved through access to a diverse range of industrial partners.

- How might emerging technology assist or hinder this?

We must: be able to identify and manage our span of technological and commercial control.

- We have already shared a draft high level Maritime Service Catalogue with industry and are seeking to make this open source. This decomposes a generic combat system into individual services.
- We will seek to use this alongside any given platform's CONEMP to develop functional architectures describing how these services might be 'bundled'
- Further engagement with this approach would be mutually beneficial

We should: build our skills inside the Department as a better integration partner.

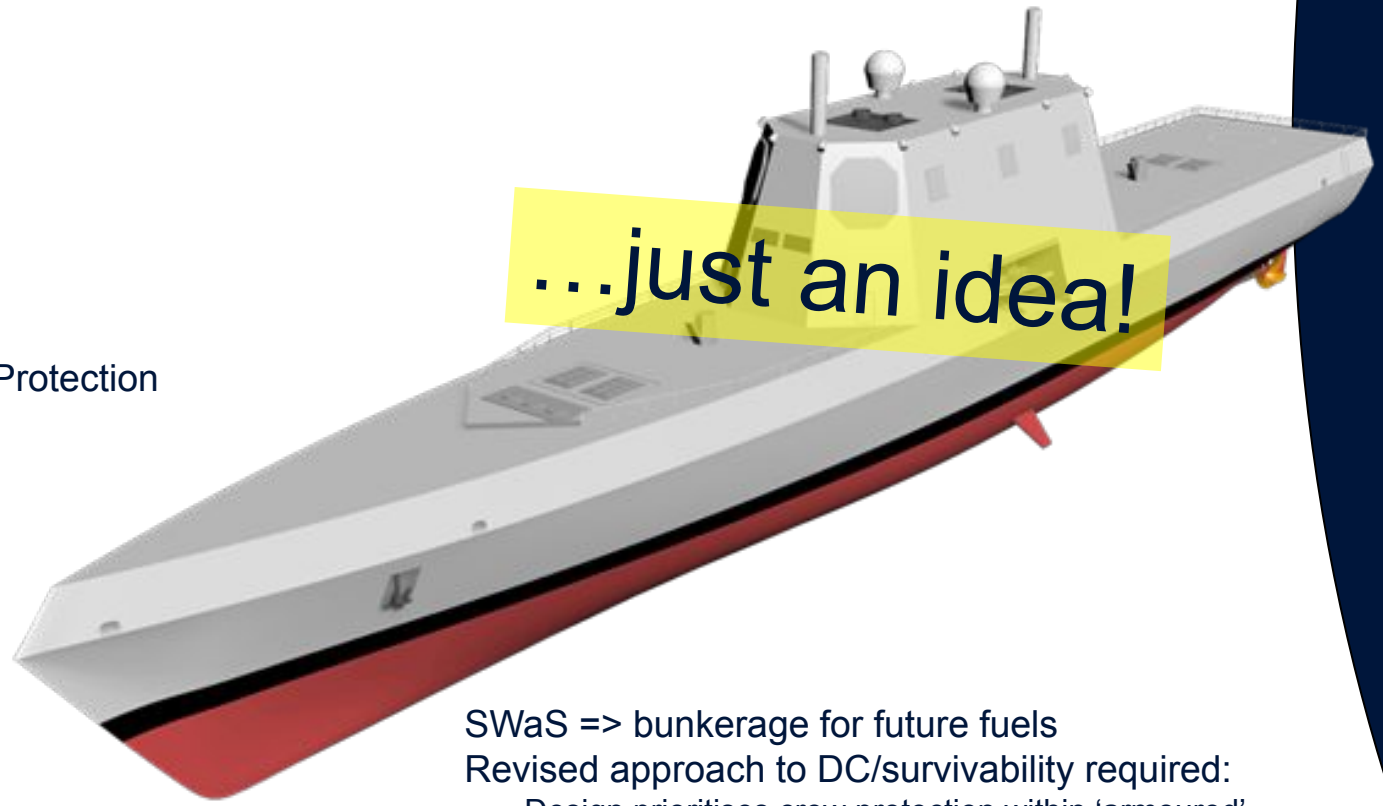
- The steps above are working towards this but we welcome comment/assistance.
- How might industry reconfigure themselves alongside MOD?

Opportunity to do differently…?

- Mk41 + SWaS for APM
- Large fixed face volume search sensor
- Other sensors (horizon scan/EO IR as required
- ‘Organic’ C2 for CD2E
- EA augmenting hardkill

~4000t
Minimal crew <<50 for in situ HOTL C2 and Force Protection
Additional Tiger Teams embark via BTTX/Helo for:

- Berthing
- RASing
- Additional Force Protection - Choke point tx etc
- Preventative maintenance



SWaS => bunkerage for future fuels
Revised approach to DC/survivability required:

- Design prioritises crew protection within ‘armoured’ habitable ‘core’ and then escape/evacuation vice large DC parties to ‘save’ the ship
- Hypoxic (unmanned for majority of time) machinery spaces – no re-entries envisaged

A single role platform focussed on, and excelling in FADS delivery
Driving down UPP and crew size allows for larger class to deliver greater availability and resilience
(broader maritime DD/FF roles delivered by other GP units)