



Arke Ltd



BAE SYSTEMS

# An Affordable Future Surface Combatant

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# An Affordable Future Surface Combatant



## Background

The Future Surface Combatant programme has been in progress for some years.

For the current programme and through the annual planning rounds [PR07, PR08] the acquisition [and TLC] estimates were established and presented to MoD's budgetary authorities.

The overarching principle that FSC has followed has been to Design and build FSC to cost in order to ensure an affordable programme

The presentation is illustrated by a demonstration of the Joint Cost Model.

# Current Programme Assumptions for costing purposes



## **C1 Task Group Enabled Surface Combatant.**

- ASW and other high end war fighting capabilities
- PASE. Early in the next decade.
- Currently going through Initial Gate leading to Assessment Phase

## **– C2. Stabilisation & General Purpose combatant.**

- Follow on after C1.
- Concept studies are in progress with NDP



# Delivering the Affordability Challenge

An aerial photograph of a large naval ship, likely a destroyer or frigate, viewed from an elevated angle. The ship is dark grey and has a complex superstructure with various antennas and radar equipment. The ship is moving through the water, leaving a white wake.

**A Communications and Planning Strategy**  
**A Naval Design Partnership**  
**A Joint Cost Model**  
**Value Engineering and Value Analysis**

## Extensive consultation and support to stakeholders including:

- *DASA-DESA – IAB scrutiny and Finecon*
- *CAAS – cost assurance, modelling and V&V activities*
- *EIPTs - budgets and early internal business arrangements*
- *FSC – PM, RM, Support, Com and Fin – business case reporting requirements*
- *Naval Design Partnership [BAE Systems SS Ltd, Dstl, MoD, Thales, QinetiQ, BMT, Babcock] – to support Trade Studies and DC requirements*
- *Industry [including MBDA, Rolls Royce, Converteam] – to obtain Industry input and ‘buy in’*
- *Naval Command – training, operations, manning requirements plans and constraints*
- *Frigates PT – current T22/23 plans and IA requirements*
- *T45 PT – upkeep and operating plans and information*



# A Naval Design Partnership

## – Objectives:

- Translate capability requirements into concept designs for affordable and cost effective RN and RFA vessels.
- Help sustain within the UK the capability to design complex naval vessels at the platform and combat system architecture levels with an enduring business model.
- Encourage and generate innovation in design with a creative and incentivised multi-company team.
- Influence the direction of research and articulate the “route to market” to maximise technology exploitation for future cost effective naval vessels.
- Support the MoD Project Teams in quantifying performance, cost and schedule risk in the concept phase.

## – For FSC

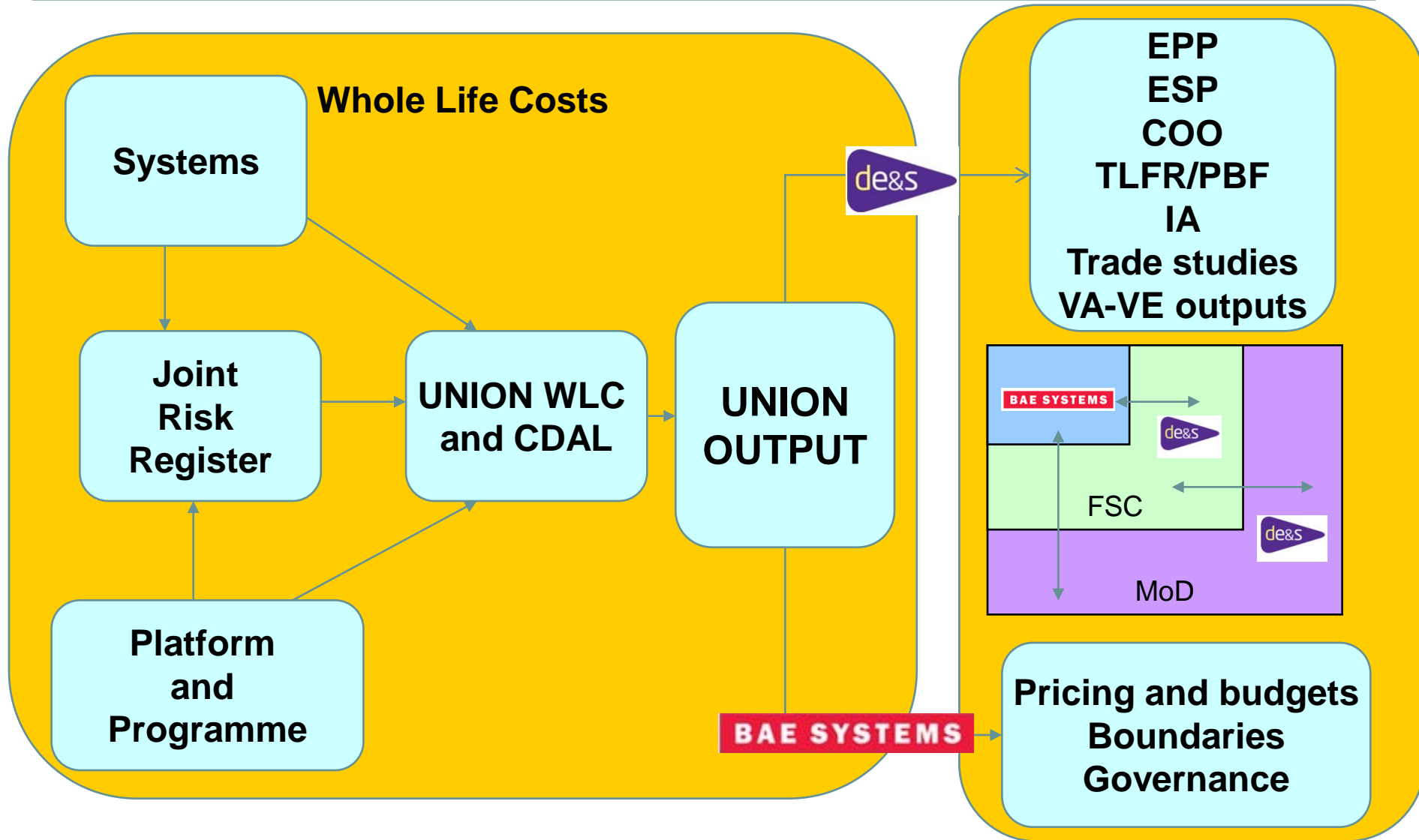
- Performance, cost and risks associated with over 200 wholeship, system and equipment options
- Supported a cost-capability decision conference
- Further development of the baseline design, cost capability trade-offs
- Full technical solution to support initial gate project approval.
- De-risk, the design prior to the transfer of design responsibility to BAE Systems Surface Ships Limited.
- All these activities were underpinned by the Joint Cost Model

# A Joint Cost Model

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- A single source of all costs and assumptions – *coherent*
- A viable configuration control medium – *auditable*
- A method of providing visibility to all stakeholders – *comprehensive*
- Protect commercially sensitive information – *managed*
- Developed, maintained, populated and facilitated by **Arke Ltd** an independent organisation with no commercial or manufacturing interests – *impartial*
- Provides ‘all’ costing and budgeting activities across the programme - *complete*

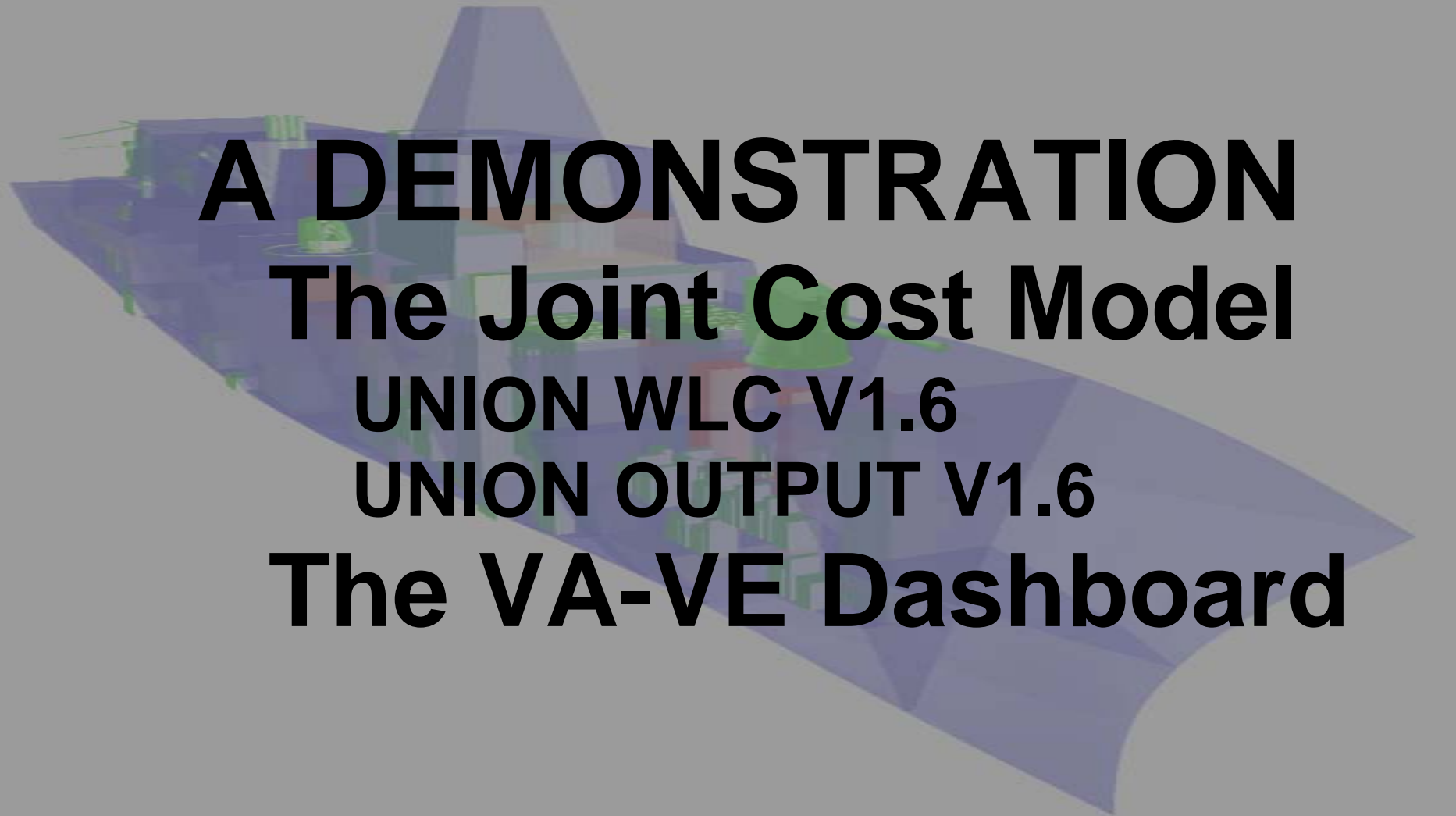
# A Joint Cost Model



## Objective

To deliver an affordable FSC programme and to demonstrate best value for money to HMT

- Supported by both FSC PT and BAE Systems SS Ltd – *a joint strategy*
- Managed by a Joint MoD/ BAE Systems SS Ltd review board – *to promote, sanction or reject VA-VE studies*
- Study team principal TOR - reduce costs [VA] or avoid costs [VE] **not** to trade capability or technical options – *a complimentary activity*
- Linked directly to the JCM, a VE dashboard approach identifying and filtering cost drivers which – *a full audit trail*
- All cost estimates derived from the JCM, analysed through the JCM, and fed back to the JCM – *configuration and budgetary control and progress*
- Proof of process through a pilot study – *a tailored process*
- Will run through AP – *involve all major supply chain participants and EIPTs*

A large, semi-transparent 3D architectural model of a building or industrial structure, rendered in shades of blue and green, serves as a background for the central text.

# **A DEMONSTRATION**

## **The Joint Cost Model**

**UNION WLC V1.6**

**UNION OUTPUT V1.6**

# **The VA-VE Dashboard**