



MINISTRY OF DEFENCE

Ministry of Defence



Armoured Fighting Vehicle (AFV) Sector Strategy



BACKGROUND

The Defence Industrial Strategy set out the Government's approach to the delivery of the capabilities required by our Armed Forces now and in the future, and the way in which industry could contribute to that. A next step in that work is to articulate an AFV Sector Strategy, as part of the broader Land Sector Strategy, through which MOD, led by DE&S, will engage with an appropriately-shaped industrial sector in order to support the delivery of current and future AFV capability.

The evolving threat we face requires....

- The ability to make intelligent decisions rapidly
- Agile responses from military and industry alike

Our vision for the AFV Sector is:

'To provide Armoured Fighting Vehicles to meet the current and future operational needs of the Armed Forces, from a healthy and sustainable supply base that provides greater efficiency, effectiveness and agility with long term value for money.'



Upgrading our fleet

SCOPE AND APPLICATION

This Strategy does not seek to deliver a specific outcome or attempt to define an industrial construct. The aim is to lay out some guiding principles which will shape MOD's evolving relationship with industry in the AFV sector, in order to set the context for individual project decisions.

When applied, these principles will provide a test for each project in order to ensure that it contributes to a coherent sector programme or, where it deviates, that we understand the implications across the whole of the delivery landscape. As such, it explicitly avoids mandating solutions to projects from either a technical or industrial supply perspective.

Urgent Operational Requirements

The need for a swift and agile response to operational need is a key driver in shaping our approach in the AFV sector. Operations in Iraq and Afghanistan have required us to make considerable modifications and enhancements to our armoured vehicles in order to meet both the environmental demands as well as the evolving threat. Since 2003, we have invested over £2.3Bn in the land equipment area, with several thousand people in both MOD and industry jointly engaged in this work. Warrior, for example, has been fitted with 20 new systems at a cost of £1.1M per vehicle (or about 30% of the base vehicle value). This work, and the speed with which we need to undertake it, drives our requirements for design information, appropriate AIT expertise and a competent MRO organisation.

A global market means...

- Many suppliers
- Competitive pressures
- A range of technologies available
- Few barriers to exploitation

Viking



KEY DRIVERS: OPERATIONAL SOVEREIGNTY AND VALUE FOR MONEY

There are two fundamental drivers which will continue to shape our approach to the procurement and support of our AFV fleet: the need to maintain appropriate operational sovereignty and the need to increase value for money in the sector.

The UK Government reserves the right to maintain an appropriate degree of access to industrial skills, capacities, capabilities and technology to ensure appropriate operational sovereignty in the range of operations that we wish to be able to conduct.

We define operational sovereignty as the ability to use our Armed Forces' capabilities with appropriate UK control and without third party constraints.

In meeting our operational sovereignty needs, we will first look to the open market, and only if that market is not appropriate will we secure AFV-related capability within the UK and, if necessary, within government itself. Where appropriate operational sovereignty can only be achieved through sustaining key industrial skills, capacities, capacities and technology in the UK, we will balance the benefits against the potential costs of such an approach.

A central consideration for the MOD is the securing of long-term value for money (vfm) across the whole delivery landscape, and we believe that competition should be exploited where it is the most appropriate mechanism for delivering this. Where a viable competition cannot be established, then we will seek to deliver vfm through the establishment of long-term partnering arrangements with an appropriate supplier.

In doing this, we will ensure that the use of the Defence Support Group is optimised in order to deliver best overall value for Defence. It will also be important, once a competition is completed, to find a mechanism whereby the winning contractor integrates into extant or new support partnering arrangements designed to secure long-term value.

Bulldog: Investing in What We Have:

Our approach is not simply based on acquiring new vehicles. Part of our approach to capability delivery is prudent investment in what we already have. Since 2006, we have invested over £173M in turning 900 FV 432 into Bulldog vehicles, which have made a significant contribution to operations in Iraq



CURRENT LANDSCAPE AND OUR FUTURE APPROACH

Design Rights

Currently, MOD is often constrained in its ability to modify vehicles because of the limited rights we hold over the use of vehicle design information. This is not a position which we would wish to retain, because it limits our ability to contract for subsequent UK-specific modification activity, as well as routine upkeep and update work, with somebody other than the original design entity. The securing of appropriate rights over the use of design information, where affordable, will be an important element of our future approach to vehicle acquisition.

Maintenance, Repair and Overhaul (MRO)

The UK's continuing ability to maintain and operate its AFV fleet is dependent on two fundamental activities: the ability to understand and manage the structural integrity of the vehicles and the ability to repair and re-generate battle damaged or operationally time-expired vehicles. Both these activities are features of upkeep activity, and are delivered through a competent MRO organisation. It follows that the ability to carry out these activities must be retained on-shore, although the off-platform repair of non-critical sub-systems need not be. The retention of DSG partially meets this need, although not completely or in isolation, and we acknowledge that we will remain dependent on an appropriate industrial component to support DSG outputs.

Assembly, Integration and Test (AIT)

Lessons learned from current operations have re-emphasised the need to be able to make substantial changes to the capabilities of our vehicles in order to respond to rapidly evolving threats. In industrial terms, this requires sufficient rights over the use of vehicle design information (the 'What') and assured access to the design knowledge and design capability (the 'How'), in order to design major UK-specific sub-system upgrades. It also requires the ability to undertake the production, assembly, integration and on-vehicle test of such system upgrades in order to deliver a usable solution.

Conclusions:

There are two major conclusions that we have drawn from our analysis:

- That we are prepared to acquire AFVs from the global market, provided that we can secure appropriate design rights and assured access to design information and design knowledge. This is necessary in order to allow us to modify our vehicles as we wish to meet our needs. However we acknowledge that each case will be subject to affordability considerations.
- That in order then to continue to operate our AFV fleet with appropriate operational sovereignty, we need assured access to a competent AFV system design capability, together with the ability to maintain and operate the fleet through Maintenance Repair & Overhaul activities, to upgrade the fleet through the Assembly Integration & Test of major AFV sub-systems, as well as have available suitable expert advice on system and sub-system integration.

KEY PRINCIPLES:

These conclusions, supported by our other background work, have led to the development of 9 Key Principles which will shape our approach to this sector:

(1) Operational Sovereignty

Operational Sovereignty considerations determine the need for assured access to AFV design expertise, Maintenance Repair & Overhaul and Assembly Integration & Test capabilities, in order to be able to modify vehicles as we wish. This gives us the ability to prosecute operations in conditions of dynamic threat. But there is a requirement, all be it not at any cost, to manufacture UK-specific critical sub-systems on-shore.

(2) Global Market Exploitation

We should, as a default approach, operate as a customer in the global AFV market provided that we can secure appropriate rights over, and access to, design information and design knowledge.

(3) Procurement Focus

At base-vehicle level, procurement should focus on intrinsically flexible vehicles with growth potential and exploitation routes in order to maximise both utility and value for money.

Integration & Test: Remote Weapons System on CR2

An example of the integration and test challenge we face is the programme to design, integrate test and deliver the remote weapon system for CR2. Working closely with the vehicle Design Authority and system supplier, 24 systems were supplied, fitted and delivered within 8.5 months at a cost of £3.9M

(4) Holistic Support Strategy

The integrated nature of operations in the ground environment requires migration to a holistic support strategy for all AFVs, both legacy and future.

(5) Intelligent Customer Competences

We need to be able to define technical standards and architectures. We also need to be able to make intelligent decisions, based on independent advice, on bringing the right technologies into integrated solutions using best systems engineering practice in order both to manage safety and deliver capability through life. Over recent years, we have chosen not to retain many of the competencies we need in house: we acknowledge the need to source them from elsewhere amongst our industrial partners.

(6) Intelligent Customer Obligations

We must continue to develop an approach in which we act as an intelligent customer, allocating risk appropriately, being realistic in our demands and promises and delivering on our commitments and obligations.

(7) Design Information Rights

We must secure sufficient rights over design information, as well as assured access to relevant design knowledge, to allow third party modification of designs where appropriate, and to allow routine maintenance, repair and overhaul activities.

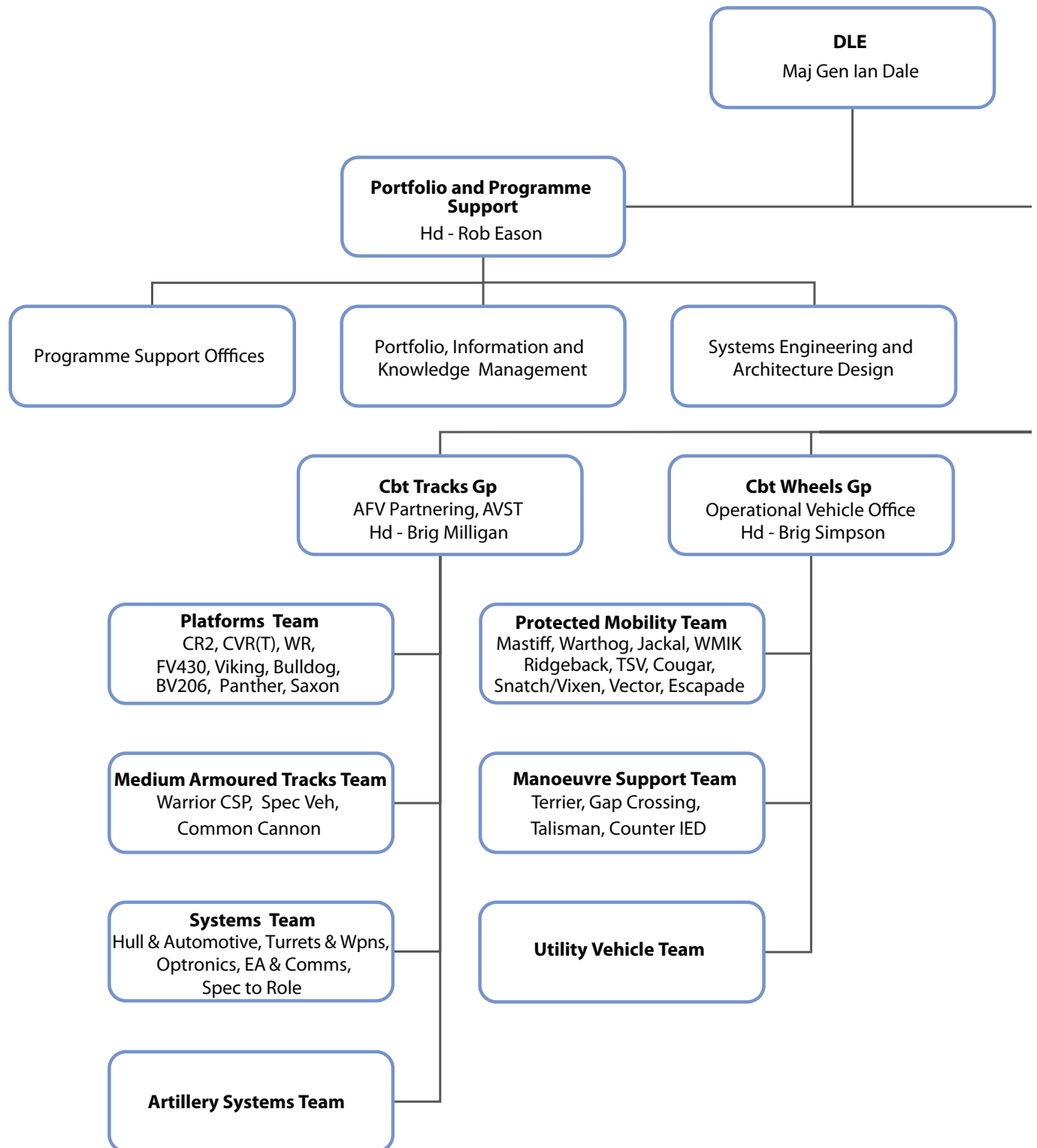
(8) Defence Support Group (DSG) Leverage

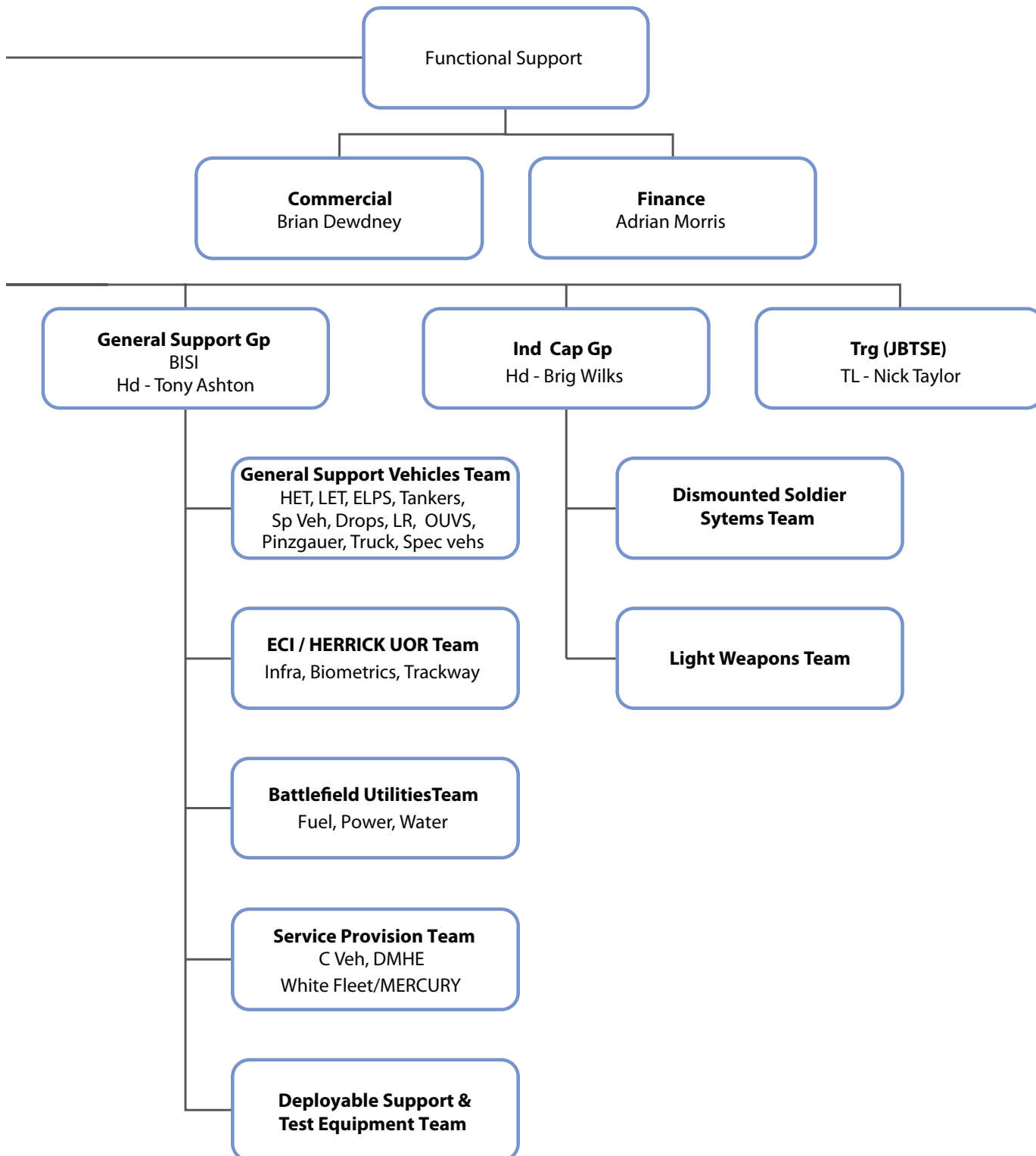
DSG capability and capacity should be utilised to the maximum extent possible in individual project delivery strategies, in order to provide best value for Defence.

(9) VFM on Through Life and Whole Solution Basis

In striving for vfm, the focus should be on leveraging both industry and our own resources to realise vfm both through life and across the whole delivery landscape, in order to avoid a series of sub-optimal decisions at individual project level.

DIRECTOR LAND EQUIPMENT - ORGANISATION:





Assembly, Integration and Test (AIT) is important to us...

- It enables the rapid upgrade of our vehicles to meet new threats (e.g. additional armour protection)
- It enables the long-term evolution of our fleet to meet our needs
- We are developing AIT expertise more widely through current UOR work with a number of contractors





MINISTRY OF DEFENCE

Design/Photography: DE&S Graphics & Photography
Print: Corporate Document Services
BTH0002680



© Crown Copyright 06/09
Published by the Ministry of Defence UK