

# MINISTRY OF DEFENCE



## MOD Architectural Framework

### White Paper on Strategic View 1 (StV-1): *Capability Vision*

Version 1.0  
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Prepared by:-



Approved by:-

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## RECORD OF CHANGES

This page will be updated and re-issued with each amendment. It provides an authorisation for the amendment and a checklist to the current amendment number.

<b>Issue No.</b>	<b>Date</b>	<b>Revision Details</b>
Draft 0.1	25 October 2004	First draft for review
Draft 0.2	14 November 2004	Modified layout and introduction
Draft 0.3	21 December 2004	Fixed review comments, and added new MODAF data model excerpt
Draft 0.4	11 January 2005	Changes made following review meeting of 5 Jan 05
Draft 0.5	21 January 2005	Data Model excerpts removed for release
Draft 0.6	27 January 2005	Final revision prior to release
Version 1.0	2 March 2005	Updated to include linkage to MODAF meta model and finalise for publication

## Introduction

*The purpose of this paper is to describe the initial content and layout of the StV-1 view in a way which would allow peer review from stakeholders. With the exception of this section, the rest of the paper follows the layout of the DODAF volume II document. The intention is that this format will be retained and used in the final MODAF documentation, currently scheduled to be published July 2005.*

The MOD Architectural Framework (MODAF) is being developed with the intention of providing a rigorous way to specify systems of systems, and is a key enabler to NEC<sup>1</sup>. The framework will predominantly be used for acquisition purposes, and a key driver for its adoption is the need to improve interoperability between systems. However, MODAF could equally well be used to analyse existing, operational systems and better enable their integration with other systems (both new and existing).

An architectural framework defines a set of key business and technical information for describing a system of systems architecture. The purpose of an architectural framework is to define the operational context (organizations, locations, processes, information flows, etc.), the system architecture (interfaces, data specifications, protocols, etc.), and the supporting standards and documents that are necessary to describe the system of systems. The information presented in an architectural framework is split into logical groupings – usually known as views. The same system and business elements may be present in more than one view, but the purpose of each view is different and so each provides a different viewpoint on the information.

The most mature and widely adopted architectural framework in the defence industry is the US DoD Architectural Framework (DoDAF). This framework has its origins in the C4ISR community and is seen as a fundamental part of the DoD's drive towards Network Centric Warfare. The MODAF is to be based on the DoDAF specification, and will use many of the aspects of DoDAF without alteration. MODAF will also add a number of new views needed to support MOD-specific processes and structures. In addition, other views will be modified, based on lessons learned by users of DoDAF.

The *Capability Vision* view is one of the new strategic views (StV-1) which MODAF adds to the base DODAF standard. The purpose of the StV-1 Capability Vision is to document the strategic vision which guides the specification of military capability. It is intended to be a somewhat general, high-level view that sets the scene and scope for the other views in a MODAF analysis.

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<sup>1</sup> CM(IS) NEC Next Steps paper of April 2003

# Capability Vision (StV-1)

## Capability Vision (StV-1) – Product Description

**Product Definition** – The *Capability Vision (StV-1)* defines the strategic context for the group of capabilities. StV-1 views are usually high level textual descriptions of the capabilities being analysed or procured. The views are high-level and describe capabilities using terminology which is easily understood by non-technical readers – though they may make extensive use of military terminology and acronyms which shall be clearly defined in the AV-2<sup>2</sup> view.

**Product Purpose** – The purpose of an StV-1 view is to provide a strategic context for the architecture. It also provides a high-level scope statement for the architecture. The capabilities described in an StV-1 view may cover many phases, known as epochs, though the details of the epochs need not be elaborated in the StV-1 view. Epochs are described in detail by the StV-3<sup>3</sup> view.

**Product Detailed Description** – An StV-1 Capability Vision is usually presented as text, with accompanying illustrations where needed for clarification. There is no prescribed diagrammatic specification for StV-1. Text (with optional illustrations) is the preferred format, as the aim is to provide a pre-amble and high-level summary for the capabilities to be addressed by the architecture.

An StV-1 Capability Vision should begin by describing the high-level concept. This concept should then be further augmented by describing the high-level operational goals and strategy in *capability*<sup>4</sup> terms. As a general rule, the StV-1 view is not intended to specify the system requirements, or even the user requirements. Rather, it has the role of setting the scope for the architecture in terms of future or current capability vision.

The information contained in an StV-1 view is most likely to have originated from operational concepts and research communities. The information will provide guidance on future capabilities and allow equipment capability specialists to identify future needs. The exception to this is when a MODAF architecture is used analyse an existing system - e.g. when reverse engineering a system for integration or upgrade purposes. In this case, the StV-1 role changes slightly in that it should define what the original capability vision for the system was, and what capabilities are to be realised by the integration or upgrade.

An example StV-1 capability vision for the MOD High Level Operational Concept (HLOC) is shown in figure 1. The capability vision for logistics (taken from the MOD AMS website) is shown in figure 2.

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<sup>2</sup> The AV-2 view defines the dictionary for a MODAF architecture.

<sup>3</sup> The StV-3 view describes the phasing of capabilities. Document reference: MODAF-M07-003

<sup>4</sup>

**THE JOINT HIGH LEVEL OPERATIONAL CONCEPT  
CAPPING PAPER**

1. The UK Joint High Level Operational Concept (HLOC) provides a transformational head mark for UK operations in 2020. It is an analytical concept that uses the Defence Capability Framework<sup>1</sup> for which seven separate papers articulate the detail<sup>2</sup>. This paper summarises essential issues. Historical research, a review of current doctrine and analysis of lessons identified in major operations over the last 12 years provides a strong sense of what should endure for future operations as much as what might need to change. This allows the concept to be framed in a way that will help the single Services to interpolate coherent interim steps for their own force development. The HLOC provides guidance for research, experimentation, single Service concept development, force development and future capabilities requirements. The UK may not have the resource to risk large scale intervention in equipment programmes or other lines of development, therefore the concept assumes pragmatic evolution toward the head mark, albeit with the transformational goals below always clearly in sight.

**OPERATE CORE CONCEPT**

An agile task-oriented joint force with freedom of action to synchronise effects throughout the battlespace and with maximum potential to exploit fleeting opportunities.

**Figure 1 – HLOC Strategic Vision**

## THE DEFENCE LOGISTIC VISION

**Defence Logistics will be a highly effective, agile and networked component that underpins the operational commander's ability to execute his mission successfully. It will be joint, integrated and interoperable, tested and developed to provide the military commander with confidence in his ability to deliver effect at the required tempo. Success will be built on balanced, adaptable systems and force elements combined with converged logistic processes and procedures.**

A number of logistic capability goals to be achieved across Defence have been drawn from the Vision:

- **Capability Goal 1.** A truly joint logistic posture and culture, developed to support Effects Based Operations. A joint approach to the planning of future operations will continue to be fundamental and will increasingly include coalition partners, with tight co-ordination of logistic elements across Services. There will be a move towards role specialisation within deployed components and lead Services in the Base. Consistency and coherence of logistic information will be key to building the required trust.
- **Capability Goal 2.** Provision of lean, agile, but robust Support Networks facilitated by the application of networked logistics and underpinned by the Joint Logistic Picture. Agility will remain the dominant theme and the logistic and medical systems must be sufficiently dynamic to respond both to changing operational requirements and to incremental exploitation of innovation.
- **Capability Goal 3.** Design of logistic capability, derived from concepts, in which supportability requirements are minimised. Major contributions to effectiveness can be achieved in design of logistic equipment by keeping pace with the commercial market, particularly capitalising, where appropriate, on the experiences of NGOs in the areas of temporary medical and specialist makeshift supply functions. In turn, the need for increased operational availability, frugality of support requirements, predictive maintenance regimes and fundamental reliability will need to be recognised. A lean supply chain will be the result of "designing out" (or minimising) support requirements, brought about by through life management.
- **Capability Goal 4.** Exploitation of Reach and optimised access to achieve full expeditionary potential. Logistics is key to expeditionary capability. This involves the early delivery of comprehensive enabling capabilities over long distances, of which many will be logistic, as well as the support mechanisms (wholly military or otherwise) required to receive support and sustain the main force elements, globally, on their arrival.
- **Capability Goal 5.** Embedding industrial capability within logistic planning and testing this through a training and exercise regime. The role of industry in the generation of military capability has increased in recent years and this trend will continue in the future. It will also be important to maximise our ability to employ contractors on deployed operations (CONDO), where practical and effective, in order to increase efficiency, reduce cost and release uniformed manpower for other tasks. Mindful of the wish to optimise the logistic footprint, we should nevertheless view Industry as an increasingly important component of logistics within Defence, and work to leverage industrial capability more effectively to generate and sustain our forces.
- **Capability Goal 6.** Convergence of end to end processes and procedures supported by common doctrine and training. All the features of Network Enabled Capability - as captured in the Joint Logistic Picture - must be bound into the logistic component emphasising the importance of end-to-end logistic processes and information flows. The provision of Collaborative Planning capabilities and Shared Situational Awareness should enable a highly capable logistic force that is

**Figure 2 – Capability Vision for Defence Logistics**

## Taxonomies

An MOD taxonomy will be developed to support MODAF, and will specialise the ERM data element definitions with terminology and classifications that support MOD business.

## UML Representation

The information contained in an StV-1 view does not lend itself well to UML representation.

## MODAF Meta-Model Support for StV-1

The MODAF Meta-Model defines a UML profile for exchanging information between MODAF tools using the XMI file format. For StV-1 the appropriate section of meta-model needed to exchange that view's information is shown in Figure 3. It should be noted that the classes shown for one view may be used in several other views.

The classes defined in the MODAF Meta-Model specify the allowable UML stereotypes that may be exchanged in an XMI file. As it is a meta-model, all relationships that feature in the view are also modelled as classes. Rather than define a class for every conceivable item that could appear in a view, the meta-model defines generic classes and allows references to the MODAF Taxonomy. For example, the MOD would be represented in XMI as an Organization stereotype, with a tagged value referring to the element in the taxonomy which says "Ministry of Defence".

For more information on the use of XMI in MODAF, refer to the document "XMI UML & MODAF", available from [www.modaf.com](http://www.modaf.com)

NOTE: Epoch and CapabilityVision are not related, to find the correct epochs for a vision, dates should be compared

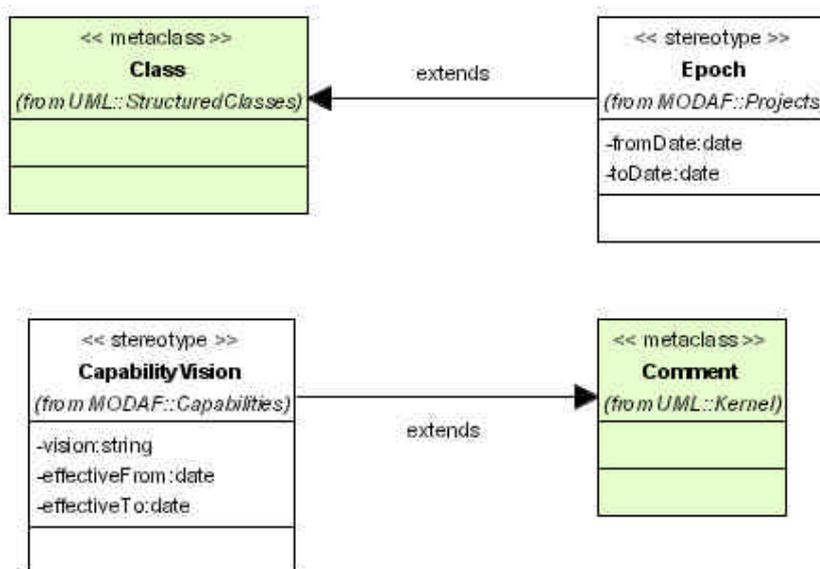


Figure 3 – MODAF Meta-Model Excerpt for StV-5

## **Model Element Definitions**

*Capability Vision* – A description of the overall aims of an enterprise colleague

*Epoch* – A period of time, defined by start and end dates. Epochs may overlap.

### **MODAF Partners**

This document has been prepared by MODAF partners with contributions from David Mawby (PA Consulting Group), Fariba Hozhabrafkan (Cornwell Associates), Ian Bailey (Cornwell Associates), and David Pile (PA Consulting Group)