MINISTRY OF DEFENCE

MOD Architectural Framework

White Paper on Strategic View 6 (StV-6): *Capability Function to Operational Activity Mapping*

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Approved by:-

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.

Issue No.	Date	Revision Details
Draft 0.1	7 March 2005	First draft for review
Version 1.0	22 March 2005	Finalised for publication

Introduction

The purpose of this paper is to describe the initial content and layout of the StV-6 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 capabilities / systems, provides a common language to describe system designs and is a key enabler to NEC[1]. MODAF will support the entire system lifecycle, to varying degrees, including: concepts and doctrine, capability management, acquisition, operations and sustainment. MODAF not only supports the documentation of project / system architectures but also the generation of broader capability portfolio / programme / system of systems architectures.

The most mature and widely adopted architectural framework in the defence sector globally has been the US DoD Architectural Framework (DoDAF). This framework has its origins in the C4ISR community from the mid 1990s and is seen as a fundamental part of the DoD's drive towards Network Centric Warfare. The MODAF is based on the DoDAF specification for Operational, Systems and Technical Views, and will use most of these aspects of DoDAF largely without alteration. In addition to tailoring a few DoDAF views to align with MOD-specific processes and structures, MODAF adds two new sets of views – the Strategic and Acquisition Views – which permit more coherent analysis and management of the MOD capability portfolio and acquisition programmes (ie clusters of system IPTs). In addition, some views will be modified, based on lessons learned by users of DoDAF.

A high level summary of how the various MODAF views support the MOD business processes is given in the MODAF Concept of Use[2] and will be developed in more detail within the MODAF deskbooks. The Strategic Views are primarily used for capturing information regarding how the MOD's capability is expected to evolve through time – based upon a strategic vision of the future state and how well this is satisfied with available and planned systems at different points through time. The Strategic Views will be generated across capability portfolios (eg all ISTAR capabilities) and represent multiple systems / platforms evolving over a long period of time.

The *Capability Function to Operational Activity Mapping* view is one of the new Strategic Views (StV-6) which MODAF adds to the base DODAF standard. The purpose of the StV-6 is to analyse the operational activities that can be supported by different elements of military capability. Therefore, this analysis provides a link between the capability requirements and user requirements.

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[1] CM(IS) NEC Next Steps paper of April 2003
[2] MODAF Concept of Use, MODAF-M04-003, October 2004

Capability Function to Operational Activity Mapping (StV-6)

Capability Function to Operational Activity Mapping (StV-6) – Product Description

Product Definition – The *Capability Function to Operational Activity Mapping (StV-6)* view describes the mapping between capability elements and the operational activities that can be performed using them.

Product Purpose – The StV-6 view provides a bridge between capability analyses using Strategic Views and operational activities analysed using Operational Views. Specifically, it identifies how operational activities can be performed using various available capability elements.

Product Detailed Description – An StV-6 view shows which capability elements may be utilised in support of specific operational activities by means of a mapping matrix. This view is analogous to the SV-5 Operational Activity to System Function Traceability Matrix – but provides the interface between strategic and operational views rather than operational to system views.

Figure 1 shows an StV-6 extract for a small number of hypothetical land operational tasks. This shows how different capability elements support different stages in the operational process.

Capability Functions (see StV-2)

	ISTAR	Decision Support	Effects – Planning	Effects – Engagement
Prepare Estimate		X		
Plan Collection	X			
Manage Intel Collection	X			
Assess Intel	X			
Maintain Recognised Picture	X	X		
Deconflict Battlespace			X	
Conduct Fires				X
Battle Damage Assessment	X			

Operational Activities (see OV-5)

Figure 1 – Example StV-6 for Hypothetical Land Operational Tasks

Taxonomies

The MODAF Taxonomy is to be developed in a related project in conjunction with the communities of interest. The Integration Authority is coordinating current work and subsequent ownership will rest with DG Info.

UML Representation

MODAF does not mandate the use of UML representation and indeed a number of MODAF views are not amenable to UML. This section describes how a UML representation of the relevant MODAF view may be developed if UML is being used.

There is no readily applicable representation of the StV-6 view in UML.

MODAF Meta-Model Support for StV-6

The MODAF Meta-Model defines a UML profile for exchanging information between MODAF tools using the XMI file format. For StV-6, the appropriate section of meta-model needed to exchange that view's information is shown in Figure 2. 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".

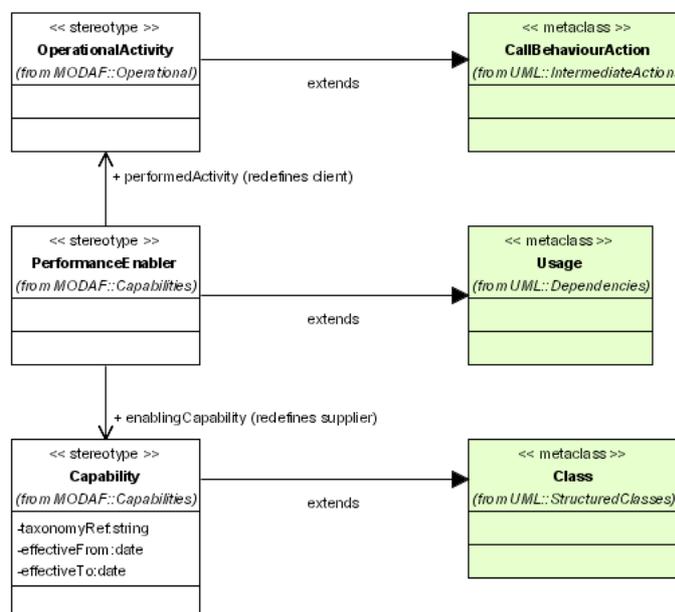For more information on the use of XMI in MODAF, refer to the document "XMI UML & MODAF", available from www.modaf.com

Figure 2 – MODAF Meta-Model Excerpt for StV-6

Model Element Definitions

Capability – A high level user requirement, usually functional.

OperationalActivity – An activity that occurs in the process of achieving a business or military goal.

PerformanceEnabler – A relationship which asserts that a capability (at least in part) enables the performance of an operational activity.