FAQs

How does MODAF relate to other Architecture Frameworks?

One of the MOD aims for MODAF is to preserve an appropriate level of international alignment. This is because there is a degree of multinational co-operation in respect of architectures, implying that it is highly desirable that there is compatibility between architectural frameworks, the tools that support their use and the skills and knowledge employed by architects in different nations.

This article refers to the relationship between MODAF and:

US DoD Architectural Framework (DoDAF)

NATO Architectural Framework (NAF). (Access the Framework)

The Open Group Architectural Framework (TOGAF)

Zachman Framework

Relationship to DoDAF

MODAF is based on the DoDAF version 1 baseline, and this section summarises the main distinctions between MODAF – as represented by the MODAF Meta Model (M3) – and the current version of DoDAF. It is recognised that DoDAF is in a state of evolution so the contents of this section should not be taken as indicating significant divergence from the evolving DoDAF.

The effects of the move to DoDAF v1.5 (released in March 2007) have not yet been assessed. Note also that the introduction into MODAF of two new viewpoints has resulted in the need for review of the ex-DoDAF views; some changes have been made to MODAF (at version 1.1) as a result of this review.
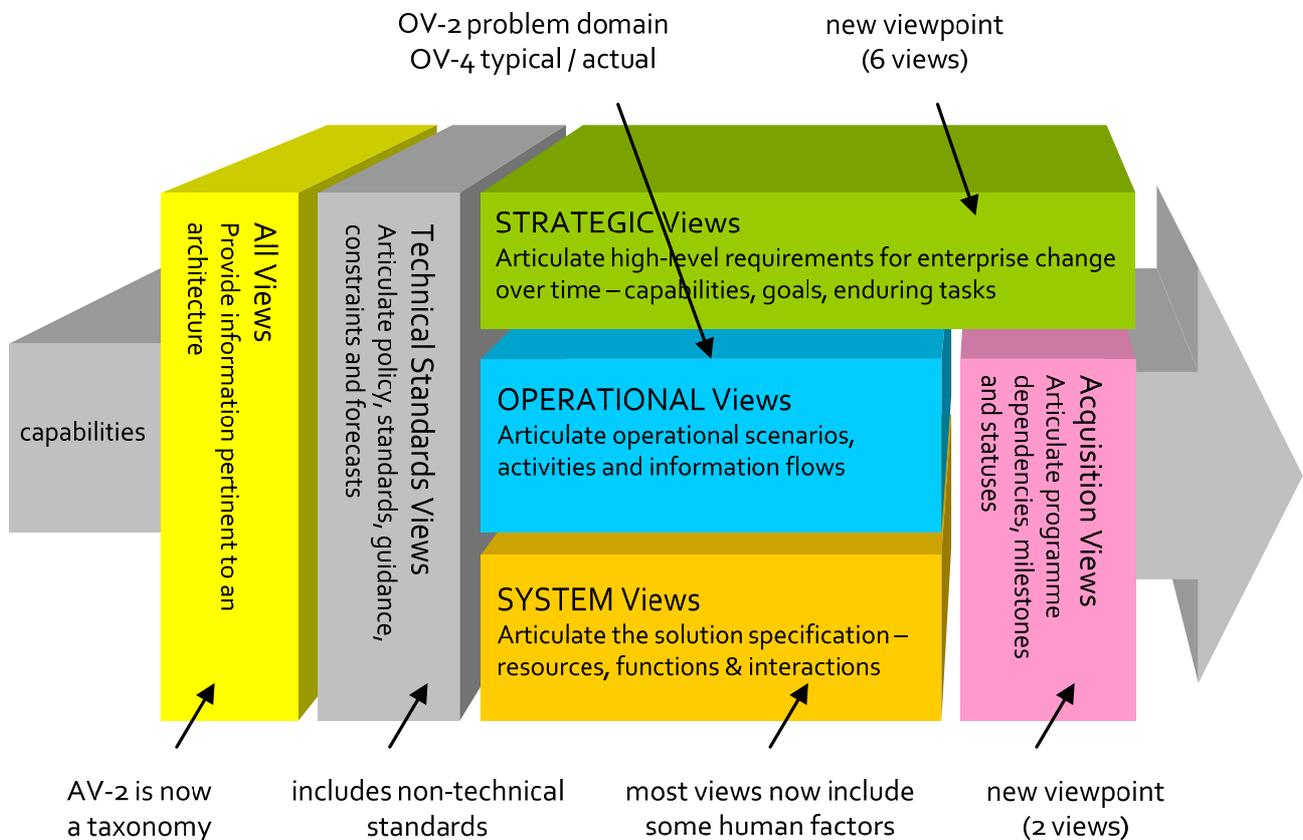
In summary, the following factors have led to differences between core MODAF at version 1.1 compared with DoDAF version 1:

- The need to model incremental acquisition programmes as these represent an increasingly common form of defence procurement

- The need to model transformational programmes and their inter-dependencies

- The need to model capabilities as the outcome from force development and capability integration programmes

- The need to model solution resources in terms of people as well as technical system resources

- The need to model physical attributes and capabilities and, by extension, flows of personnel, energy and materiel not just information

- The need to integrate programme models into traditional architecture models in order to meet the needs of enterprise architects

- A drive towards a more coherent object oriented underpinning for the Architectural Framework.

None of these factors are believed to be specific to the UK procurement regime or UK defence architecture requirements. It is therefore expected that, over time, existing defence architectural frameworks like DoDAF will evolve to accommodate the changing needs of defence architects.

Strategic Viewpoint

The Strategic Viewpoint was introduced into MODAF to address the concerns of Capability Managers. In particular, strategic views describe capability taxonomy and capability evolution. The Viewpoint is an essential component of an enterprise architectural framework, since the Enterprise view is all about strategic change. In DoDAF, it could be argued that this Viewpoint was not needed because, at the time of writing version 1 of DoDAF, it was envisaged that architecture models would be written in one of only two states: 'As Is' (capturing the current capability) and 'To Be' (capturing the intended target capability).

MOD increasingly employs incremental acquisition to help to manage the risks of complex procurements, and there is consequently a need to provide visualisations of the evolving capabilities so that Capability Managers can synchronise the introduction of capability increments across a Programme of Projects. The views included within MODAF's Strategic Viewpoint are based on the programme and capability visualisation techniques that are used by Capability Managers to capture the increasingly complex relationships between inter-dependent projects and capabilities.

Another justification for the Strategic Viewpoint within MODAF is the increasing importance of transformational programmes within the MOD (e.g. NEC, Logistics Transformation). These types of programme do not conform to the standard form of project and tend to be benefit-driven rather than capability delivery focused. An ability to model these transformational programmes, and their inter-dependencies, provides a potentially powerful tool for defence Enterprise Architects.

Acquisition Viewpoint

The Acquisition Viewpoint was introduced into MODAF to address the concerns of Acquisition Managers. In particular, acquisition views describe projects, how those projects deliver capabilities, the organisations contributing to the projects and dependencies between projects.

DoDAF takes a traditional view of architecture in which programme development is considered outside scope; to compensate for this, various DoDAF views represent the evolution of systems, technologies and standards (e.g. SV-8, SV-9 and TV-2).

The integration of acquisition views (organisational and project oriented views) with the more traditional architecture views is a characteristic aspect of MODAF-based enterprise architecture.

This approach provides most benefit when time-based views are accepted as being needed at all levels within an enterprise architecture.

Model Concepts

The following DoDAF model concepts have been amended during the development of MODAF:

- Needline: Node Connections (a new construct) enable modelling of flows of energy, material and personnel flows as well as the information flows that are addressed by Needlines (the M3 has deliberately avoided extending the definition of Needline to retain compatibility with DoDAF).

- Node: MODAF reasserts the logical nature of an operational Node. What DoDAF calls System Nodes are Physical Assets in M3.

- Organisation: MOD requires the preservation of the distinction between organisations and posts; this has been accomplished by introducing the Organisational Resource (in effect Organisational Resource plays the same role in MODAF as Organisation does in DoDAF). MODAF also makes a clear distinction between actual organisations and types of organisation.

- System Function: In order to enable more refined modelling of information-rich equipment capabilities, a MODAF System Function may act on a particular set of Data Elements. Similarly, a MODAF Operational Activity may act on a particular set of Information Elements. In version 1.1, the more general Function has been introduced – this can be provided by any functional resource (capability configuration, system, role).

Specific Views

The DoDAF views relate to the Operational, Systems and Technical Viewpoints in MODAF. MODAF has changed the names of the following ex-DoDAF views to more accurately describe their content: OV-2, OV-7, SV-4, SV-5, TV-1, TV-2.

In addition to the changes associated with the revised model elements, the following DoDAF views have been amended during the development of MODAF:

- SV-1 (resource interaction specification): introduction of Capability Configuration and human solution resources

- SV-2 (system connection specification): refinement of views to address Protocols and Protocol stacks

- SV-11 (data model): greater integration with SV-4 and OV-7.

The MODAF form of OV-5 strives to combine support for object-oriented (UML) and structured methods (IDEF0).

Finally several of the DoDAF views have been amended to reflect integration with the Strategic and Acquisition Viewpoints in MODAF. These changes focus on the relationship between Capability Configurations and Capability Increment (milestones).

Relationship with NATO Architectural Framework (NAF)

NATO has adopted M3 and MODAF (at NAF Revision 3) and has add several new views. In particular, NAF is the source for the System Orientated views being incorporated into MODAF v1.2. The final published version of NAF 3 is available at this site.

Relationship with The Open Group Architectural Framework (TOGAF)

A comparison between MODAF and TOGAF has been carried out as part of the DLO SOA study work. This is available here. (requires registration)

Relationship with Zachman Framework

Whilst considering the relationship between MODAF and DoDAF, it is also worth looking briefly at how MODAF might map onto the widely-used Zachman Framework.

The following points should be considered with respect to this mapping:

- The Strategic Viewpoint in MODAF is about Enterprise Planning, and maps on well to the Zachman Scope/Planner layer.

- The Operational Viewpoint in MODAF is about the business at any one time, and maps on well to the Zachman Business Model / Owner layer.

- The System Viewpoint MODAF is about Capability Specification (effectively, designing and putting together Capability Configurations) and therefore maps on well to the Zachman System Model / Designer layer.

- The Technical Standards Viewpoint in MODAF is about standards applicable to the enterprise as a whole, rather than being specifically about technology. The implementation technology aspects of an architecture are not currently covered in MODAF (apart from the communications details provided by the various parts of SV-2). TV-1 and TV-2 therefore fit in well up in the Zachman Scope/Planner layer.

- The Acquisition Viewpoint in MODAF is really about looking in more detail at the Enterprise Planning process. AcV-2 therefore also fits in well up in the Zachman Scope/Planner layer.

- The MODAF StV-6 and SV-5 views are mappings between layers, and have therefore been shown as such.