

# Coherence across Defence Lines of Development



**Successfully delivering military capability has always been more than just delivering equipment; it is about the coherent delivery of all the elements that make up that capability –the Defence Lines of Development (DLODs). Delays or inadequacies in any one DLOD, whether it is the equipment itself, its support or training solution, the availability of the crew etc, can impact the delivery of the planned military capability to the Armed Forces. Sula Systems has been working with both the Equipment Capability Customer (ECC) and the DE&S's Future Business Group (FBG) to develop a process and associated software tool, based upon extensive experience with various projects, that is available for use by all defence projects.**

## Coherence across Defence Lines of Development

There are numerous well-known examples over the years where major defence programmes have been delayed or the Armed Forces have not received the capability they had planned due to problems not directly related to the equipment. This has included, for example, training systems not being available, infrastructure not being built, or the link to other equipments (often communications systems) not being in place.

It is therefore imperative that Defence establishes systematic processes for this to be done. Over the last few years Sula has worked with DE&S IPTs on programmes such as FRES, DII, Bowman/CIP 5 and 6, Artillery Systems and Network Enabled Air Defence and Surveillance to develop a methodology based upon the use of Capability Maturity Models (CMM). This approach means that:

- All stakeholders agree what level of maturity each DLOD must reach by

key points in the programme, such as Initial Gate, Main Gate and Initial Operating Capability, etc.

- The CMM defines what these levels of maturity mean in terms of measurable achievements.

The methodology then becomes a project management tool that is used by Capability Integration Working Groups (CIWGs) to co-ordinate the actions of stakeholders to ensure the coherent delivery of the DLODs for a particular programme. In turn, this enables the successful delivery of the required military capability – on time and on budget.

The ECC has seen this methodology become established in some key DE&S IPTs and has now sponsored an activity to roll-out this approach across all defence projects to ensure a consistent, methodical, and proven approach to this major issue for Defence Acquisition.

**For more information** about Sula and how we can help you, please contact us on 01453 844660 or email [info@sula.co.uk](mailto:info@sula.co.uk)

# Background

## The Defence Lines of Development (DLODs)

The DLODs, that comprise the various elements of military capability, are generally regarded as:

- Training
- Equipment
- Personnel
- Information
- Doctrine & Concepts
- Organization
- Infrastructure
- Logistics
- Interoperability (Although this can be regarded as an overarching theme for all DLODs.)

## Defence Readiness Level Monitor - Illustrative Output

The screen shots below show a typical output from the Sula software tool. The first shows each of the DLODs on the vertical axis vs. each phase of the CADMID cycle. Each element of the matrix is colour coded to indicate the maturity of that part of the programme – this is termed the 'Defence Readiness Level' (DRL). (In effect, an amalgam of Technology Readiness Levels (TRLs) and System Readiness Levels (SRLs).)

The status of the Training DLOD in the Concept Phase, as an example, is shown in the second screenshot and illustrates how the overall DRL assessment is arrived at by considering the maturity of a number of Critical Success Factors (CSFs), i.e. specific activities that must be completed if the requisite maturity is to be achieved.

The screenshot displays the 'DRL Status Monitor' application. The main window shows a matrix with 'Phase' on the horizontal axis (Gen, Foun, C, A, D, M, I, D) and 'DLOD' on the vertical axis (Sus, Ind, Res, Trg, Eqpt, Pers, Infra, D&C, Org, Info, Log, IO). Each cell in the matrix contains a color-coded status indicator (e.g., Green, Red, Orange) and a small icon. The 'Trg' DLOD in the 'C' phase is highlighted in red, indicating a 'Red' status.

The 'Headline & CSF Details' window is open, showing details for the 'Training' DLOD in the 'Concepts' phase. The 'Headline Details' section shows:
 

- Headline: Training requirements endorsed in User Requirements Document (LRD)
- Status: Green
- Worst Case Status: Green
- Weighting: 1
- Complete?:

 The 'CSFs List (Read-only)' table shows:
 

CSF #	Title	Status	Weighting	Complete?
CSF 01	Customer Supplier Agreements	Green	1	<input checked="" type="checkbox"/>
CSF 02	Training costs included in the V	Green	1	<input checked="" type="checkbox"/>
CSF 03	Training plans included in the T	Green	1	<input checked="" type="checkbox"/>
<b>Overall:</b>		Green	12	<input checked="" type="checkbox"/>

 The 'CSFs Details' section shows:
 

- CSF Number: CSF 01
- CSF Owner: TBD\*
- CSF Title: Customer Supplier Agreements (Acquisition) [CSA(A)] for the training aspects of the programme defined.
- Dependencies: (empty)
- CSF Evidence of Status/Completion: CSA(A) are a key output of the concept phase.
- CSF Status: Green
- Weighting: 1
- Complete?:

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