



11TH ICCRTS

NCW Risk Assessment Theory

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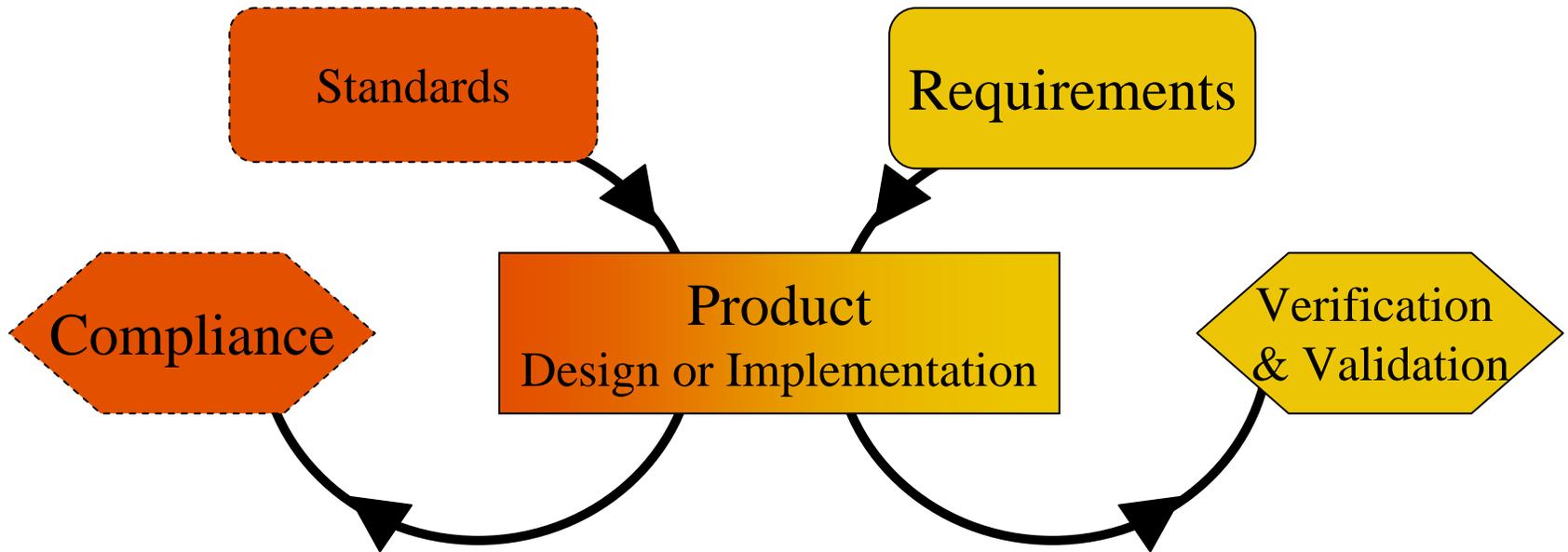
NCW Acquisition Problems

1. NCW aspects of projects are difficult to justify.
2. NCW aspects of projects often fail to combine to deliver an integrated NCW capability.
3. NCW projects often fail to deliver a capability that can be used upon delivery due to the absence of:
 - a. Major and supporting systems which are delivered late, and
 - b. other *fundamental inputs to capability (FIC)* not being considered.



NCW Compliance

Forms of “Compliance”



Compliance
(in the strict sense)

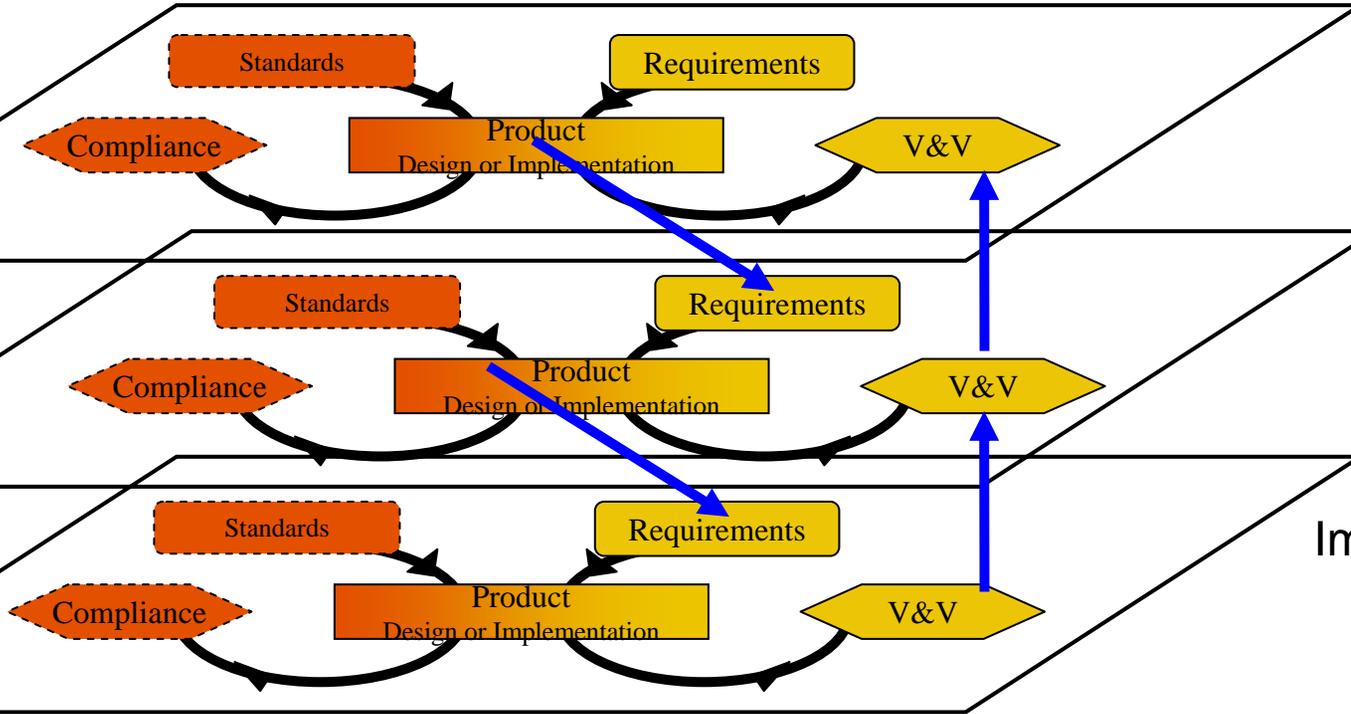
Verification
& Validation



System of
Systems

System
Design

System
Implementation





Comparison of Compliance Methods

Methodology	Form of Compliance	NCW Acquisition Problems
AS NCW Prioritisation Integration Analysis Method (NPI) – see <i>paper 85 at CCRTS '06</i>	<ul style="list-style-type: none">▪ SOS Design V&V▪ System Design V&V	1, 2, 3 (partial)
US Net-Ready Key Performance Parameters	<ul style="list-style-type: none">▪ SOS Design V&V▪ SOS Design Compliance▪ Systems Implementation Compliance	
UK NEC Benefit Analysis	<ul style="list-style-type: none">▪ SOS Design and V&V	1, 2



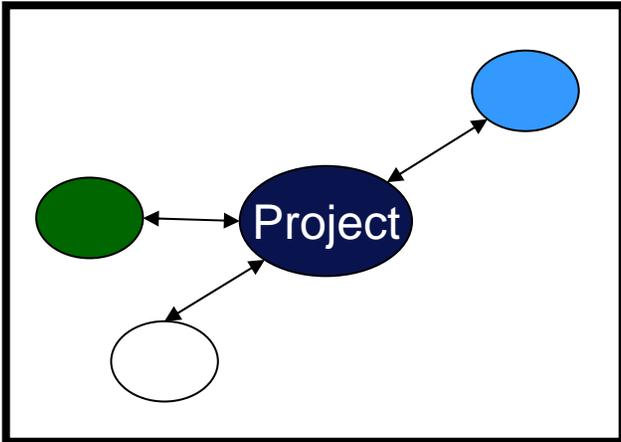
Assessment Philosophy

- To build on existing roles and responsibilities within Defence.
- The Compliance Process and Results must be easy to use and understand.
- Compliance Process to merge smoothly into existing processes and procedures within Defence.
- Simple expansion of the framework as requirements change and grow.

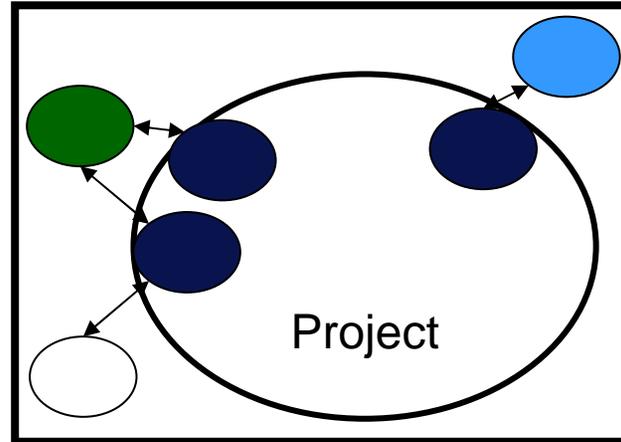
Goal: An approach that enables systems to evolve rather than enforcing standards



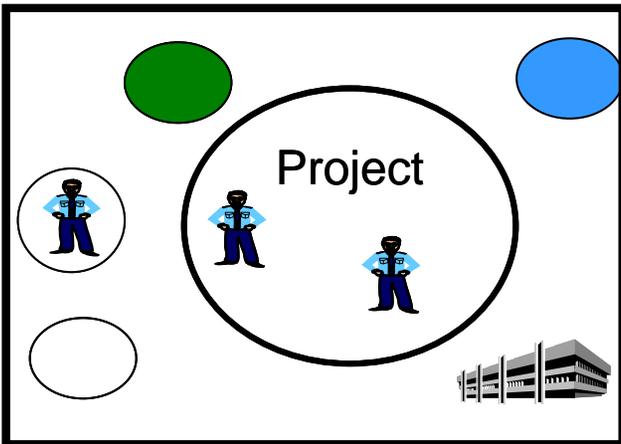
Analysis Areas - Development



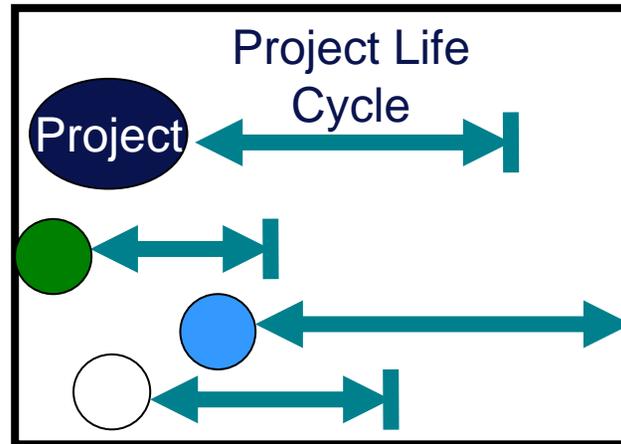
NCW Requirements Analysis



NCW Systems Analysis



NCW Fundamental Inputs
to Capability Analysis



NCW Force Analysis



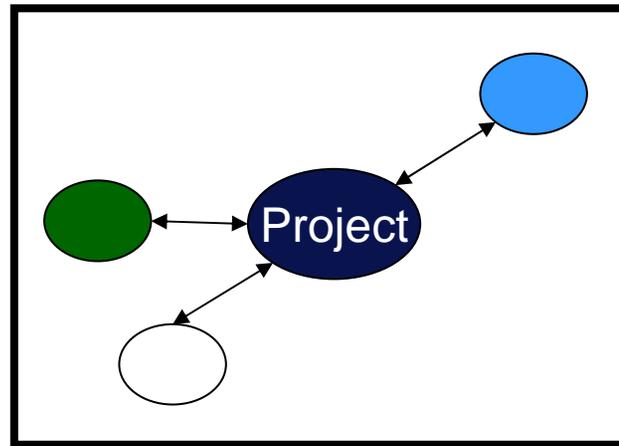
Analysis Areas Development

- **Interviews (For NCW Requirements Analysis, NCW Force Analysis)**
- **Literature Analysis (For NCW Systems Analysis)**
- **Evaluation of initial question list (Completed for NCW Requirements Analysis & progressing the other areas currently)**

NCW Requirements Analysis



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This analysis area explores the high level context for the capability. It analyses the justification for the NCW-related requirements, including the NCW effects to be delivered, the NCW characteristics of the project and the relationships required with other capabilities.



NCW Requirements Analysis Areas

Background

- Is to determine if an NCW Assessment is necessary
- And to capture information about the project that can be used in the analysis

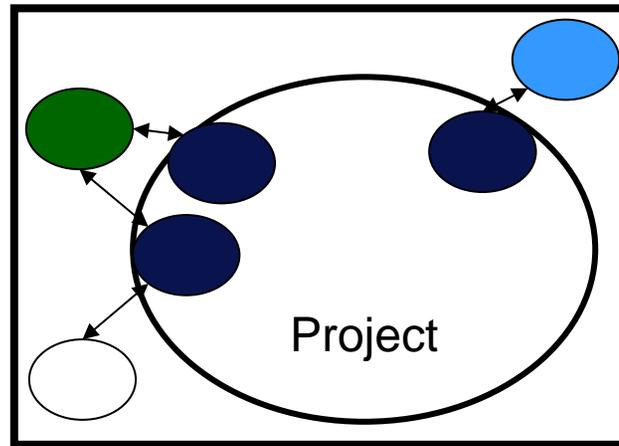
Justification

- The objective this criteria is to ensure that the project will deliver:
 - the required NCW capability,
 - the interfaces required by other capabilities, and
 - that other projects will deliver the capability required by the project being assessed.

NCW Systems Analysis



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This analysis area explores in more detail the requirements placed either on the capability by outside capabilities that are in service, under development or planned and vice versa. This dimension corresponds roughly to the *Network* dimension of the *NCW Roadmap*.

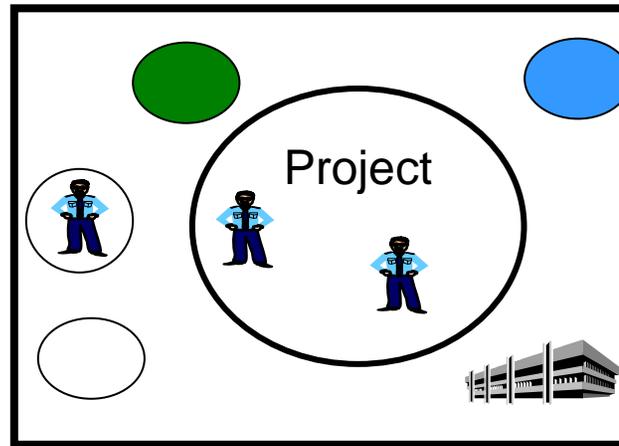
NCW Systems Analysis Areas

Adopted	ISO	LISI	Tolk
			Political
			Doctrinal
			Operations
Operator Connectivity		Procedures	Procedures
			Knowledge
Applications	Applications	Applications	
	Presentation		
Information Management		Information	Information
		Data	Data
Network Management	Session		
	Transport		
	Network		
Physical and Communications Connectivity	Data Link		
	Physical		

NCW FIC Analysis



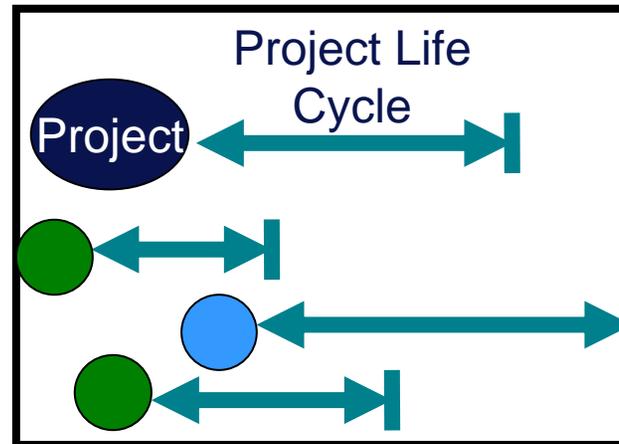
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This analysis area explores if there are any *fundamental input to capability* issues with the introduction of the capability and its NCW elements. This could include training to exploit new NCW elements and the processes, doctrine etc that result.



NCW Force Analysis



This analysis area is focused on assessment of the project in the context of the Capability Life Cycle (CLC) and the Defence Capability Plan (DCP), and covers issues such as the how the capability options fits with other capability (options). It is intended to provide information on the dependencies between projects in the DCP to facilitate decisions on scheduling, resources, and revising the DCP.



Conclusions

- A combination of NPI and NCW-RMR is recommended.
 - NPI for SoS Analysis and Summary
 - NCW-RMR for System Requirements and Summary
 - NCW-RMR and NPI for System in a SoS Analysis
- NCW-RMR NRA Area is fully tested.
- AS NCW Program Office have been trained in NCW-RMR and have trialled NPI.
- Augmentation with analysis methods for specific types of capabilities (C2, ISR) should be considered on an as-needed basis.



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Questions

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