



The Contribution of OR in the UK Equipment Capability Audit

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Presentation Structure

- The Equipment Capability Customer
- The Capability Audit process
 - Capability Framework
 - Capability Goals
 - Concurrency Analysis
 - Output
- Contribution of OR



The Equipment Capability Customer (ECC)

Joint Capability Board Members

Deputy Chief of Defence Staff
(Equipment Capability)

Director
General of
Research &
Technology
DG(R&T)

CM(PA)
Precision
Attack

CM(BM)
Battlespace
Manoeuvre

CM(IS)
Information
Superiority

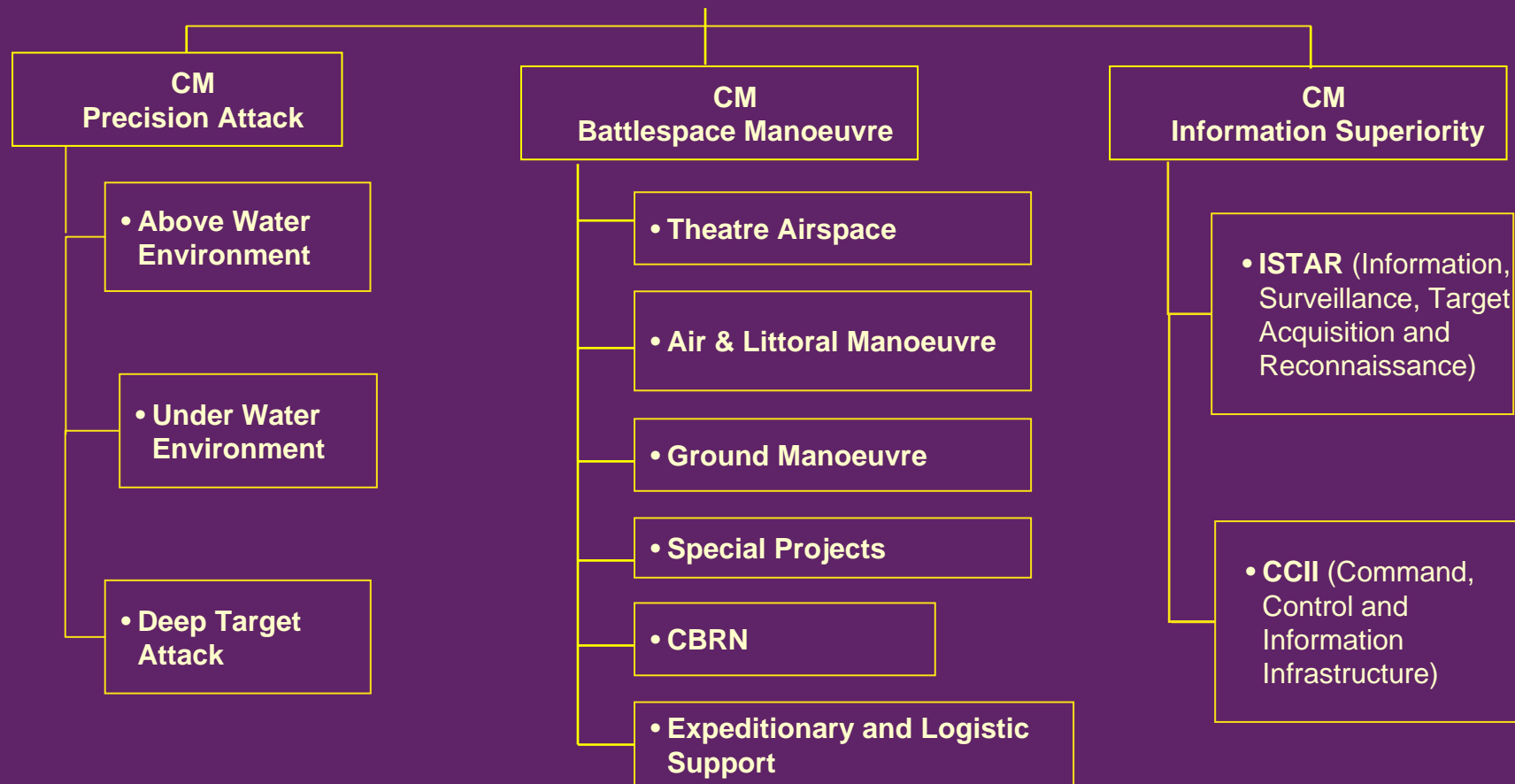
Director
General of
Equipment
DGE

Capability Managers



The Equipment Capability Customer (ECC)

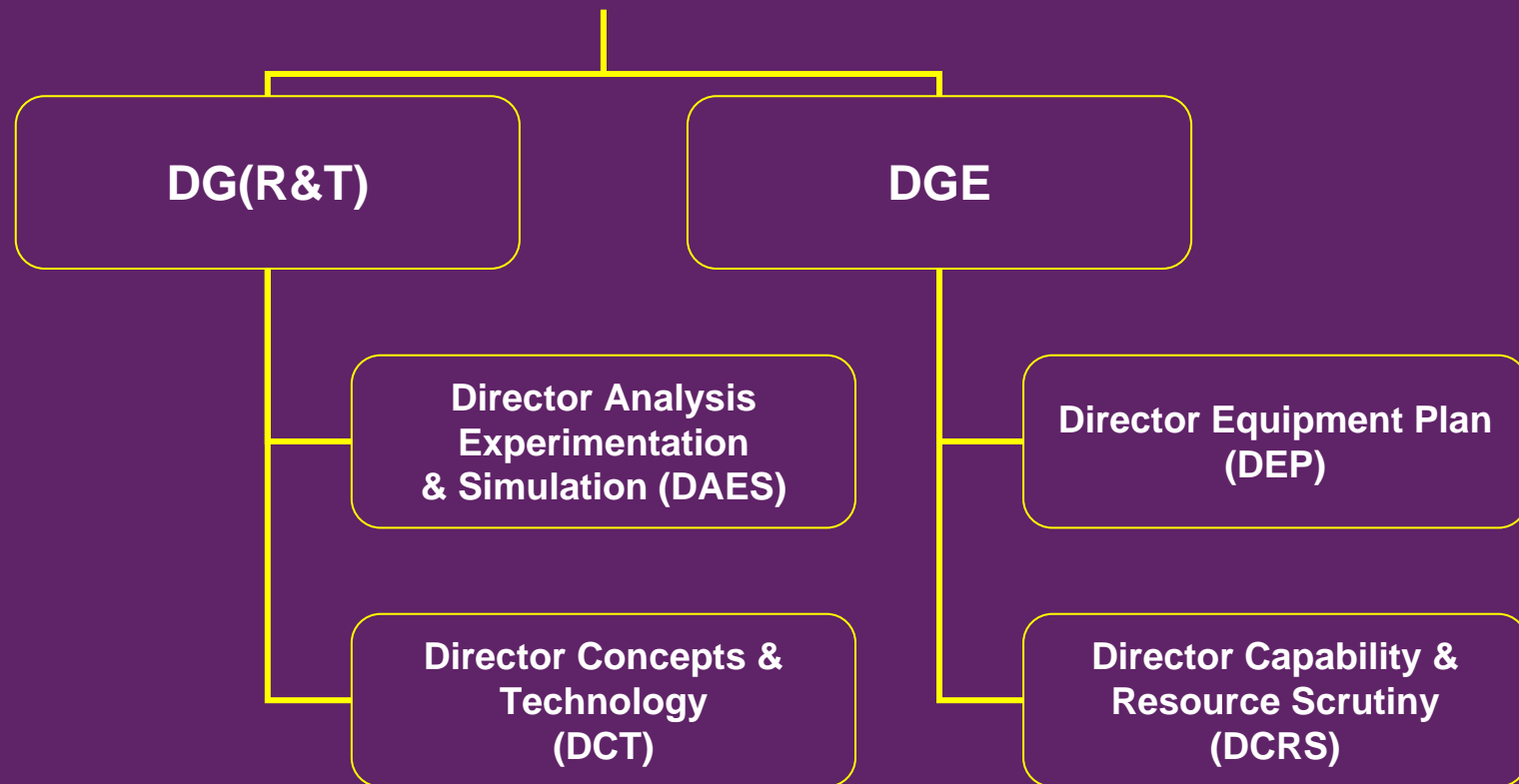
DCDS(EC)





The Equipment Capability Customer (ECC)

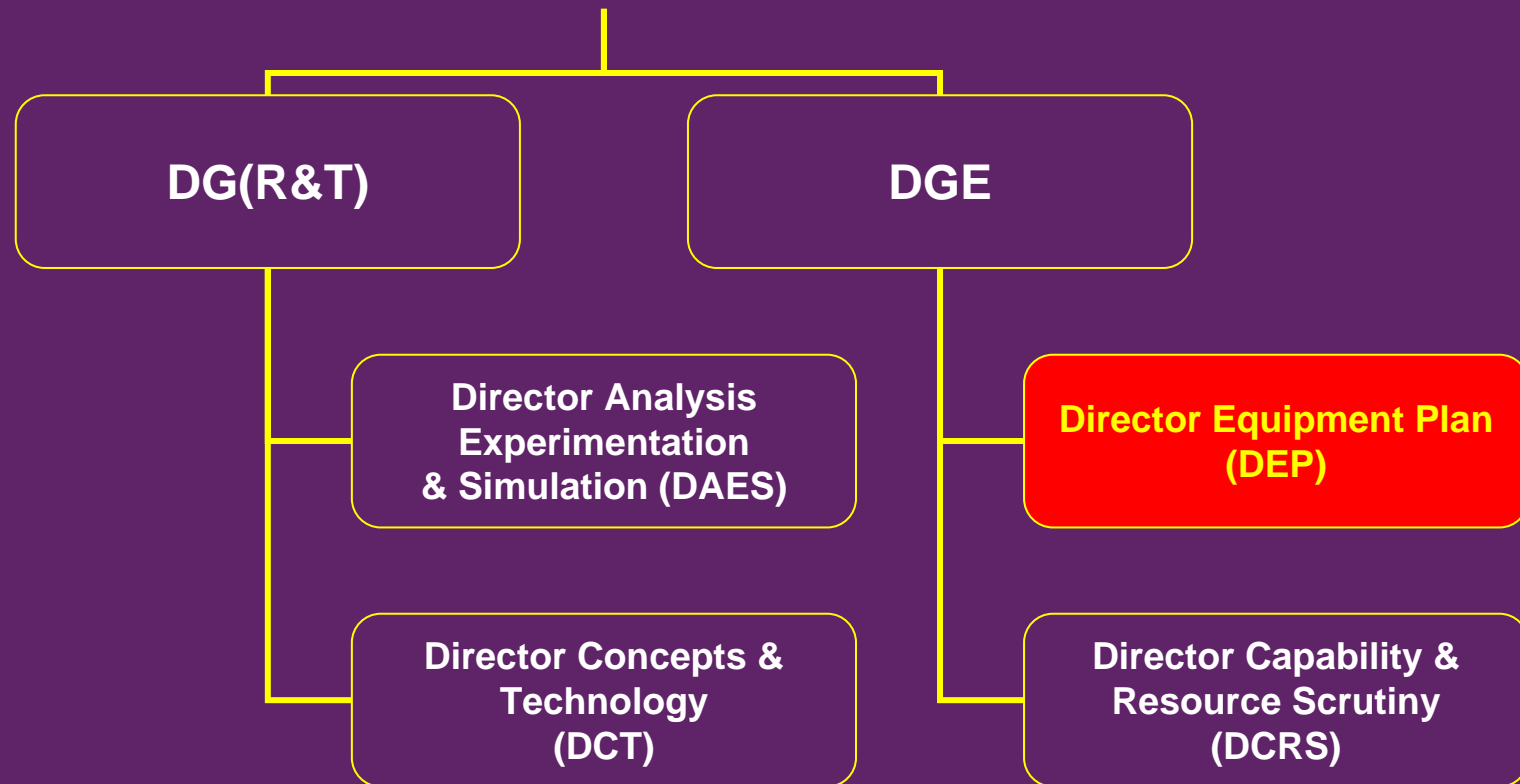
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The Equipment Capability Customer (ECC)

DCDS(EC)





The Capability Audit

- The ECC's process for assessing the expected collective operational capabilities of UK forces employing the equipment being procured or continued in service under the current and projected Equipment Plan.



The Capability Audit

- Designed to:
 - Determine whether the current plan will enable the UK Armed Forces to fulfil the tasks required of them by policy;
 - Hence to inform decisions on any required changes to the plan.



The Capability Audit

- Should identify *surpluses* in capability as well as shortfalls.
- Should be *quantitative* rather than qualitative.
- Measures the expected output of the *current* plan.



Capability Framework

- Has three dimensions; capability, operation type and timeframe:
 - A taxonomy of capability that:
 - Focuses on effects not means
 - That is expressed purely in capability terms
 - not confused with platforms, doctrinal concepts or operation types
 - Covers all capability areas
 - The operation type dimension is captured through a representative set of endorsed planning scenarios
 - These scenarios are replicated for different timeframes



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Capability:

The ECC Capability Taxonomy

Top Level Equipment Capabilities

- C4
- Force Readiness
- Strategic Mobility
- Intra-Theatre Mobility
- Intelligence, Surveillance and Reconnaissance
- Information Operations
- Control & Denial of the Above Water Battlespace
- Control & Denial of the Under Water Battlespace
- Control & Denial of Theatre Airspace
- Control & Denial of the Land Battlespace
- Deep Attack
- CBRN Defence
- Counter Terrorism
- Logistic Support



Operation Type: Scenarios

- Set of scenarios provide operational context for the Audit
 - Coverage of policy priorities
 - Test military capabilities
- Mandated core set for all areas
- Additional scenarios used where necessary



Timeframes

- The basic requirement is for audit of one near-term timeframe and one ten years subsequent to it.
- Additional timeframes can be audited by DECAs if they consider that these would provide important additional information.



Capability Goals

- **Goal:** *the effect the capability is intended to achieve.*
- **MoE:** *how we measure the effect it is achieving.*
- **Benchmark:** *how much it needs to achieve.*








Capability Audit

- For each combination of capability, scenario and timeframe:
 - Set a benchmark for the required level
 - Map all of the contributing systems to build an assessment of the forecast achieved level
 - Compare the two values to determine whether there is a shortfall, sufficiency or affluence
 - If a shortfall, assess risk and possible mitigation
 - If sufficiency or affluence assess scope for savings



Capability Score colour system

	Capability delivered exceeds goal by 25%
	Capability goal met and exceeded by up to 25%
	Capability shortfall of up to 25%
	Capability shortfall of more than 25%
	Not Assessed



Capability Score objectivity system

A	Assessment achieved by means of subjective judgement only
B	Assessment achieved by means of subjective judgement informed by objective evidence
C	Assessment achieved by means of judgmental interpretation of existing objective evidence
D	Assessment drawn directly from objective evidence



Concurrency Analysis

- Capability Goals test our capability within a specific operational context.
- Concurrency Analysis tests whether there would be sufficient numbers of equipments available to meet the capability requirements of a number of concurrent operations.



Concurrency Analysis

- Concurrency sets are derived from current policy, as laid out in Defence Strategic Guidance.
- DIDO generates demand streams of operations over time
- AENEAS assesses ability to meet demands



Specimen Output

				Scenario 1		Scenario 2		Scenario 3		Peace		
		Level 1	Level 2	Year X	Year Y	Year X	Year Y	Year X	Year Y	Year X	Year Y	
Top level Capability Area	Sub-area	Sub-area	C	B	C	B	C	B	C	B	C	B
		Sub-area	D	A	D	A	D	A	D	A	D	A
		Sub-area	C	A	C	A	C	A	C	A	C	A
		Sub-area	D	A	D	A	D	A	D	A	D	A
		Sub-area	D	A	D	A	D	A	D	A	D	A
	Sub-area	Sub-area	D	A	D	A	D	A	D	A		
		Sub-area	D	B	D	A	D	A	D	A	A	A
		Sub-area		A		A		A		A		
		Sub-area	D	B	D	B	D	B	D	B	D	D



OR in the Capability Audit

- High Level OR develops and assesses the scenario campaigns.
- Lower level OR can assess whether particular benchmarks can be achieved.
- Concurrency Analysis assesses our ability to meet the demands of concurrent operations.



OR in the Capability Audit

- The Capability Audit is a structured, objective, scientifically-based approach to aiding senior decision-makers faced with a complex real-world problem.



The Capability Audit is OR

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Questions?



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