Learning Through a Capability Investigation

(Paper 046)

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16 June 2009

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Why does DSTL exist?

- Deliver value to the UK taxpayer by providing outputs of research, timely advice and solutions to the Government's defence and national security related problems
  - Analysis support to evidence based decision making
  - Analysis and systems engineering in support of future concept development
  - Sensitive subsystem and component-level research
  - Identification and evaluation of potential 'battle-winning' technologies
  - Specialist S&T services.

Create the winning edge for UK forces and Government through the best use of S&T

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What is Capability?

UK definition of “Capability”

“The ability to generate an operational outcome or effect in the context of defence planning”

(Acquisition Operating Framework, 2009)

US definition of “Capability”

“The ability to achieve a desired effect under specified conditions through combinations of means and ways to perform a set of tasks”

(US Joint Staff Doctrine, 2007)

Integration of contributing components to achieve defence aims

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Integration of contributing components to achieve defence aims

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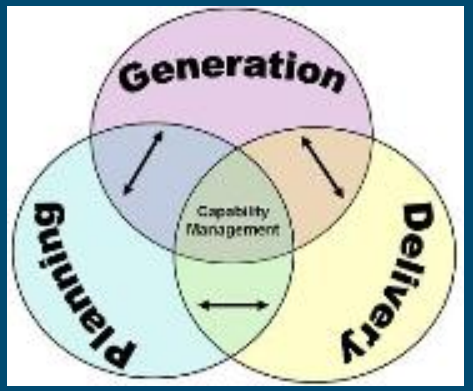
UK Capability “means and ways”

- Defence Lines of Development (DLODs)
- Training, Equipment, Personnel
- Infrastructure, Doctrine and Concepts
- Organisation, Information and Logistics
- + Interoperability

- Through-Life Capability Management (TLCM) ‘Perspectives’
- Commercial
- Financial
- Industrial
- Research & Development
- Ways of Working
- ‘Sustainability’



Investment opportunities and decisions across all contributing components

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Through-Life Capability Management

- TLCM is a top-down approach based on Defence Policy tempered by tolerable risk.
- Identify the changes required cross-DLODs and ‘perspectives’ to provide the right capabilities, at the right time within available resources.
- Through-life, long-term view leading to resilient, stable and coherent plans.
- Agile management construct with the ability to respond to change.
- Seeking best practice in MOD / Industry relationships.

Translates the requirements of Defence policy into an approved programme

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- Agile management construct with the ability to respond to change.
- Seeking best practice in MOD / Industry relationships.
- Provide industrial capability cross-'attributes' to support military capability need.
- People, Process, Products, Technology, and Facilities (P3TF).
- Through-life, long-term view leading to sustainable business plans.
- Need to understand the user perspective.
- Seeking best practice in MOD / Industry relationships.

Translates the requirements of Defence policy into an approved programme

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Capability Management - Planning

- A CI is a structured problem solving exercise, involving all stakeholders
- Finds the optimum solution choices to capability shortfalls, programme threats and opportunities (Stage 4 outputs)
- Cross-DLODs and 'perspectives' including investment changes and smarter ways of working.
- CI may result with recommended Option(s) to address the shortfall or exploit the opportunity

Problem solving exercise to find the optimum solution choices

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The Mine Countermeasures (MCM) need

- *To rapidly counter the mine threat to enable assured access and freedom of manoeuvre at acceptable risk …….*
  - Affordably – within budget guidelines
  - Sustainably – across DLODs and 'Perspectives'
  - Resilient – able to survive some shock or other
  - Responsive – able to deliver strategic effects more quickly
  - Robust – improved reliability and availability
  - Flexible – with regard to people, structures and equipment
  - Adaptable – personnel and units with high utility
  - At range – meeting standing overseas commitments and contingent ops
  - At home – meeting standing home commitments

Assured access and freedom of manoeuvre at acceptable risk

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Future MCM – Towards a distributed MCM capability





P

Portable

Technology enablers

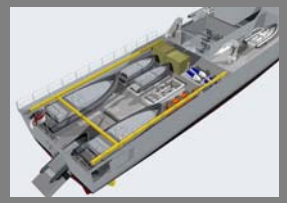
R&D

TEPIDOIL + Industry + Finance

O

Organic


Transformation

D

Dedicated

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Problem : What will FMCMC look like?

- Complex equipment with emphasis on data management and reliable information flow
- Different skill sets and range of operator tasks
- Types and distribution of people
- Different logistics and integration requirements
- Dependencies and interactions with other Fleet assets

What are the strategic MCM requirements and the optimum system mix of remote off board Portable, Organic and Dedicated (POD) systems to meet affordably the capability requirement?

Coherently delivering a flexible, adaptable, responsive and affordable capability within available resources

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FMCM
Future Mine Countermeasures Capability

Joint MOD and Industry working

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FMCMC CI Objectives

- Development of a credible, costed and affordable option that meets the capability requirement
- Understanding of the DLOD risks and drivers
- Plan for transition to FMCMC
- Assess benefits of a joint MoD/Industry CI
- Information Management ‘trial’
- Six month activity started in April 2008
- Workshop based

Development of a credible, costed and affordable option

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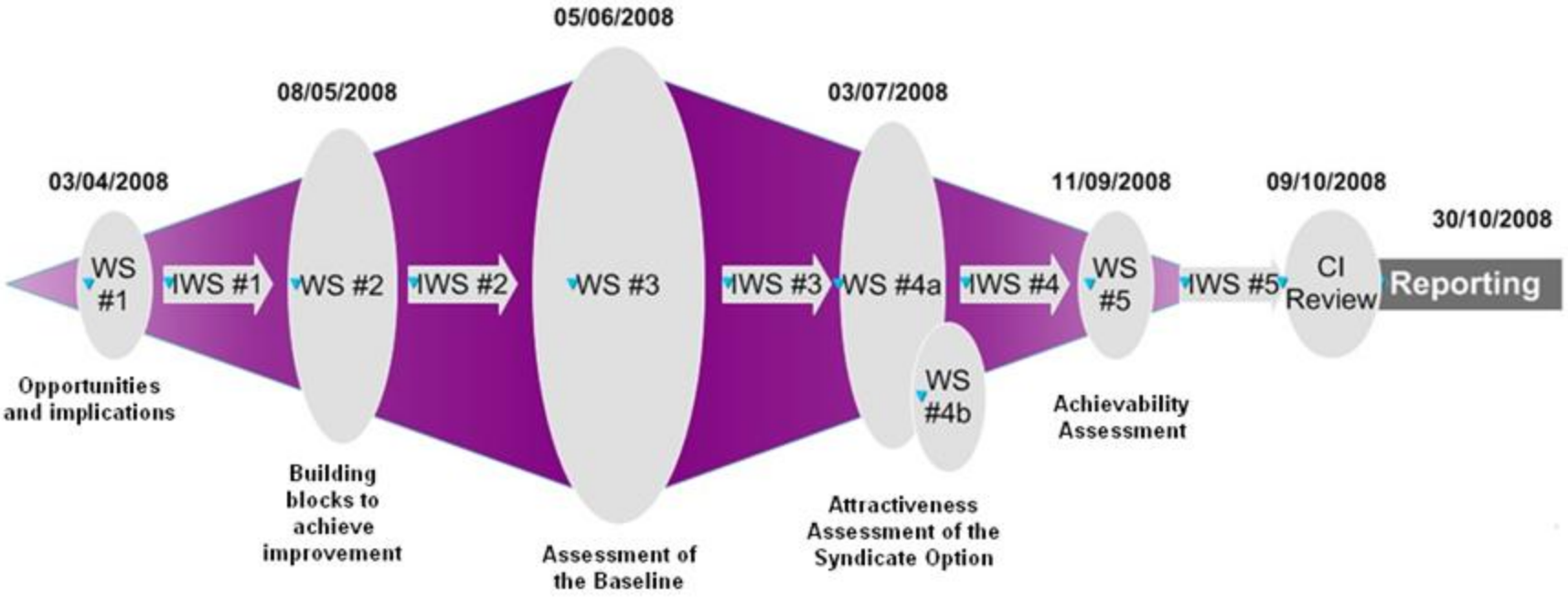
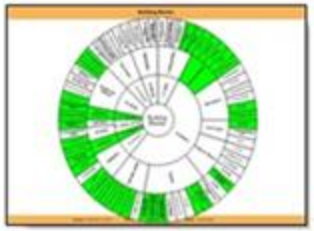
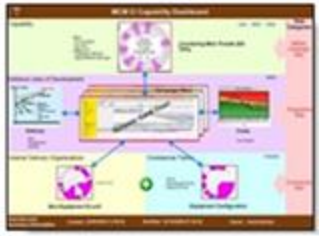


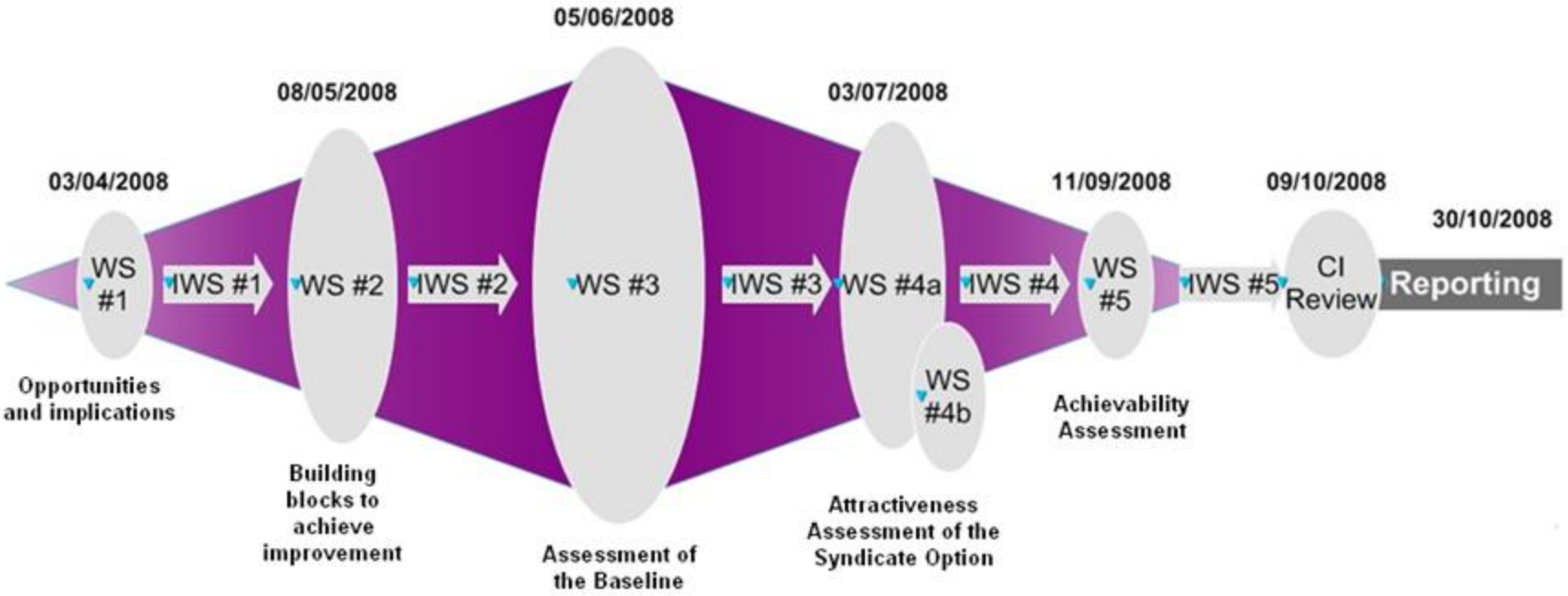
Evolving ideas, understanding implications and providing robust evidence

FMCMC Capability Investigation (CI)







Evolving ideas, understanding implications and providing robust evidence

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Outcomes

- **MOD**
  - Viability of the POD Concept confirmed
  - Understanding of constraint issues derived
  - Focus and structure provided to research and acquisition opportunities
- **Team**
  - Mutual understanding of dependencies and interactions between the capability needs and the contributing solution components
  - Understanding of objectives and values that would support contractual relationships
  - Mutual understanding of the problem space, the current solution and the overall contribution set within the solution space
- **Information Management**
  - Consistent method of describing existing capability benchmark
  - Development of single repository available to the community
  - Understanding of Information Management opportunities and requirements
  - Development of innovative representations and decision support visualisations

Benefits to MOD/Industry and Information Representation

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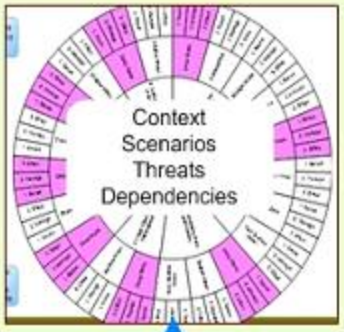
AV 1

MCM CI Capability Dashboard

Capability

Value
- Performance
- Benefits

Judgement
- Capability Shortfall
- Opps/Risks/Challenges



User DEC Dstl

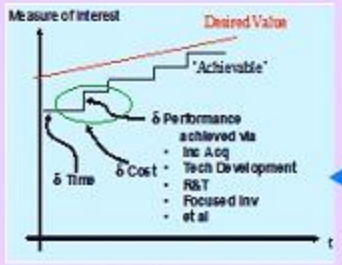
Countering Mine Threats (DS CPG)

Risk Categories

Military Campaign Risk

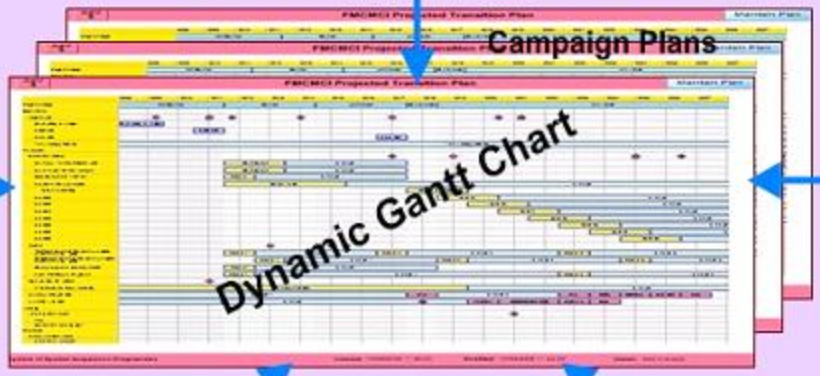
Defence Lines of Development

DES



Delivery

Time
-Programme
-Activity

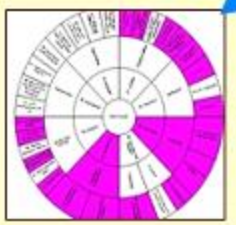


Costs

Cost Model

Programme Risk

Internal Delivery Organisations



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Non-Equipment DLsoD

Commercial Terms

Industry

SLA's
Contractual Terms
Capacity/Time

Equipment Configuration

Commercial Risk

Learning Points

- CI was successful
  - Brought confidence to prior perceptions
  - A sense that FMCMC might be achievable
  - Got the whole stakeholder community talking together
  - Beginning to map out a route to the future
  - Enduring engagement (MINE)
- Change thinking from “Art of the desirable” to “Art of realistic”
- Not solvable by MOD alone – needs industry involvement
- Sharing the problem: engage, innovate, incentivise
- Understanding risk, understanding acceptance

Sharing the problem: engage, innovate, incentivise

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Questions?

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