



MINISTRY OF DEFENCE

The Role of Test and Evaluation in Testing Defence System Requirements

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My Personal Viewpoint

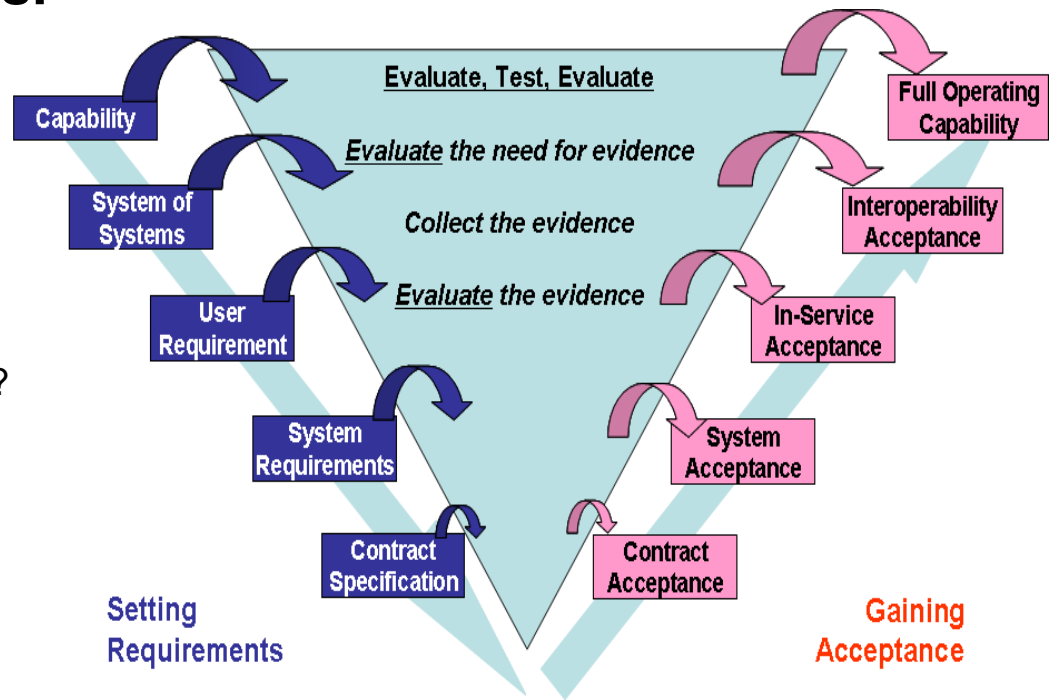
- **Seen from both customer & supplier point-of-view**
 - As the UK Complex Weapons 'Senior Responsible Officer'
 - As the UK Capability Manager for Test & Evaluation
- **Evaluation is a major part of any programme**
 - 20-25% of a missile cost, 30-60% of time
 - But is not a source of Programme Delay (!)
- **Need for re-capitalisation of Evaluation Capability**
 - Retention / refresh of 'SQEP'
 - Affordability of duplicate facilities
 - New demands in complexity, capability

Being Poacher & Gamekeeper gives a unique perspective

WHY TEST & EVALUATION?

Answering critical questions:

- Requirements complete and correct?
(*requirements validation*)
- Designs discharge requirements?
(*design verification*)
- Implementation complies with designs?
(*system verification*)
- Processes appropriate and effective?
(*design assurance*)
- Deployed systems fit for purpose?
(*system validation/certification*)



The reality check – a Golden Thread from policy to implementation

“PHYSICIAN, HEAL THYSELF!”

■ **Do we assess Suitability of Evaluation Capabilities?**

- Patchy links between requirements, acquisition, and test and evaluation communities
- Leveraging T&E Knowledge in Setting Capability Requirements
 - Skills to ‘test’ and optimise Requirements

■ **Be ‘Cost Aware’ at all times**

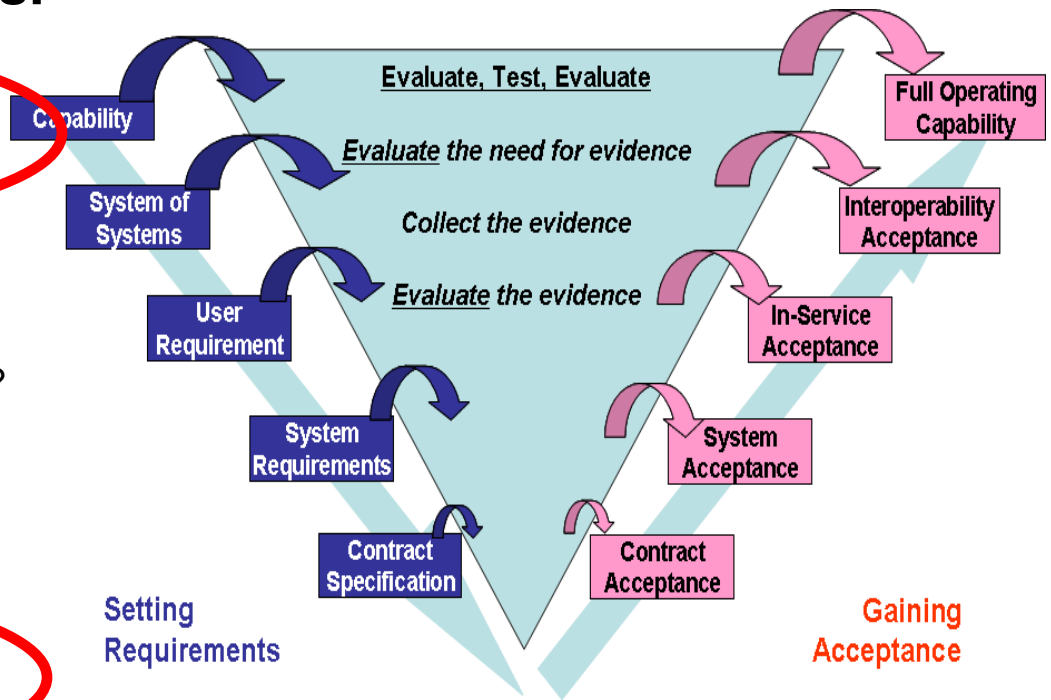
- Trade Testing Requirements against true ‘Risk Appetite’
- Construct requirements accounting for test implications
- Generate the ‘Value Case’ for Evaluation to inform future investment (or disinvestment!)

Integration of Evaluation & Project communities is key to Success

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Provenance of Evaluation Requirements

■ **Audit Accessible Evaluation Capability**

- Against Delivery of Policy Outcomes and Departmental Outputs

■ **Consider pan DOTMILPF issues**

- People, Doctrine, Organisation.....

■ **Consider Investment Cases alongside other Capabilities**

- And consider Evaluation Requirements from pre-concept

■ **Test Hard, Deliver Easy**

- Tests must be focused on characterising the performance of the system across actual conditions.

Treat Evaluation Capability like any other Military Capability

Are Deployed T&E Systems Fit for Purpose?

- **Capture of Test Data to support Evaluation must be enduring**
 - Coherent data capture in OA, Development, OTE, Training, Operations
 - Context access and ownership must be managed across all sources
 - Access data from User, Crown, OEM, Specialist Test House, Overseas
 - Coherent methods, standards & processes needed to ensure access
 - Interoperability of instrumentation with Training Capability, AAR etc
 - Multi-role sovereign strategic assets, Danger Areas etc
- **‘Test’ cannot be completely divorced from ‘Evaluate’ but**
 - Aim to be Location and Source agnostic
 - Agile, transportable range instrumentation
- **Changes & Investment driven by understanding ‘value of data’**
 - A key modelling & OA thrust

Gather data once, use many times

Early airworthiness certification...

