

IM Implementation Into An Existing Inventory

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Outline of Presentation

- Australian Defence Force IM Policy
- IM Implementation Plan
- IM Implementation – Potential Options
- Introduction into Service (issues)
- Revision of DEOP114(AM1)
- Recommended Way Forward
- Acknowledgements

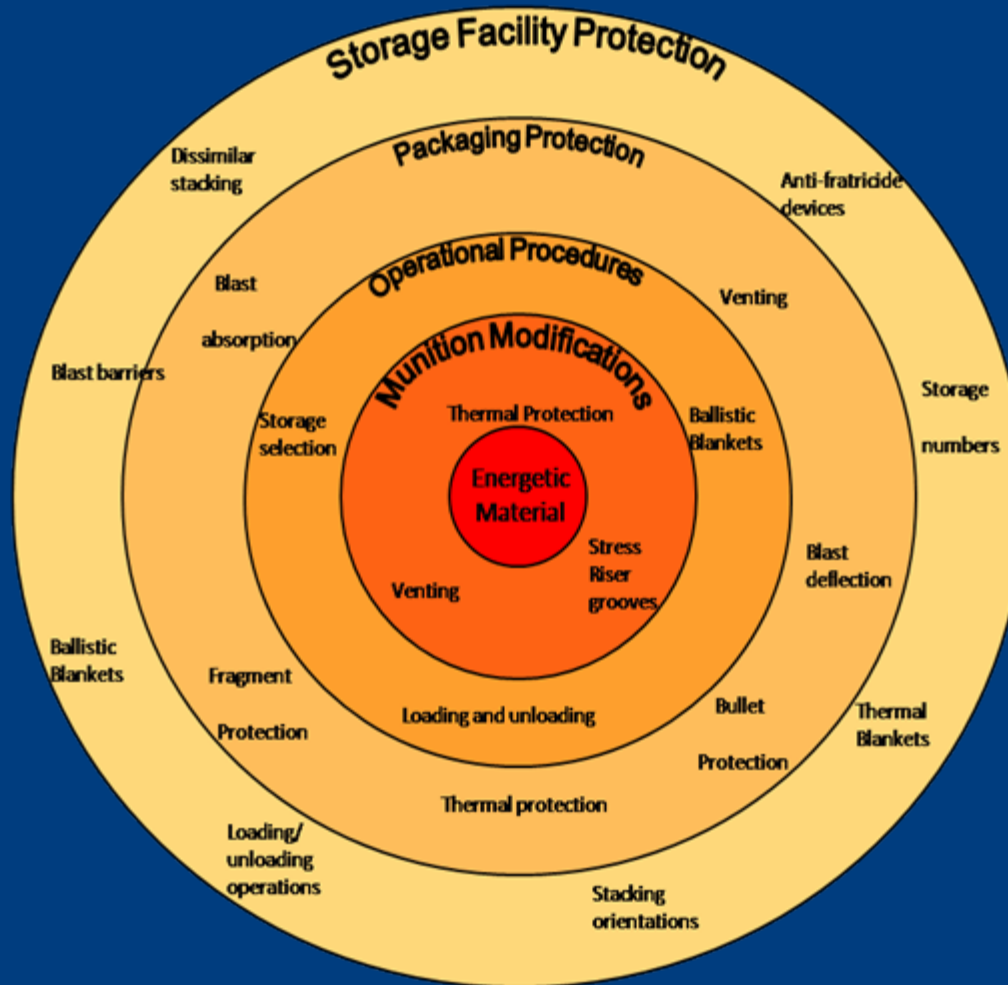
Australian Defence Force IM Policy

- DI(G) Log 07-10 (now DI(G) 4-3-010) – 19th April 05
 - Navy Log 49-1
 - Army Ops 25-4
 - Air Force Log 16-7
- Policy Directives:
 - All New Explosive Ordnance (EO) requirements to include a statement of compliance with the IM requirements goals specified in STANAG 4439.
 - For all new procurements, approval of non-compliance is to be sought from Head of Capability Systems and the relevant Deputy Service Chief (IM Waiver Request).
 - IM Implementation Plan is to be developed which will determine the degree of compliance of the in-Service inventory

IM Implementation Plan (IMIP)

- Defence Explosive Ordnance Publication (DEOP) 114(AM1)
 - Approved for use within Guided Weapons & Explosive Ordnance (GWEO) branch by means of a GWEO Chief Engineer's Directive.
- DEOP 114 Provides guidance:
 - ADF IM Policy
 - IM Assessment of In-Service Explosive Ordnance
 - IM Waiver System
 - IM Data Management
 - Performance Measurement and Reporting

IM Implementation - Potential Options



IM Implementation -Potential Options - Storage Facility Protection

- Dissimilar Stacking – implemented by ADF
- Blast Barriers – not yet implemented by ADF
- Ballistic Blankets – not yet implemented by ADF
- Loading/Unloading Operations – currently implemented
- Stacking Orientation – currently implemented on case-by-case basis
- Thermal Blankets – not yet implemented by ADF
- Storage numbers – implemented by ADF
- Anti-fratricide devices – not yet implemented by ADF

IM Implementation - Potential Options

Packaging Protection

- Blast Adsorption - not yet implemented by ADF
- Fragment Protection – not yet implemented by ADF
- Thermal Protection - not yet implemented by ADF
- Bullet Protection - not yet implemented by ADF
- Blast Deflection - not yet implemented by ADF
- Venting - not yet implemented by ADF

IM Implementation - Potential Options

Operational Procedures

- Storage Selection - currently implemented
- Loading and Unloading - currently implemented
- Ballistic Blankets - not yet implemented by ADF

IM Implementation - Potential Options

Munition Modifications

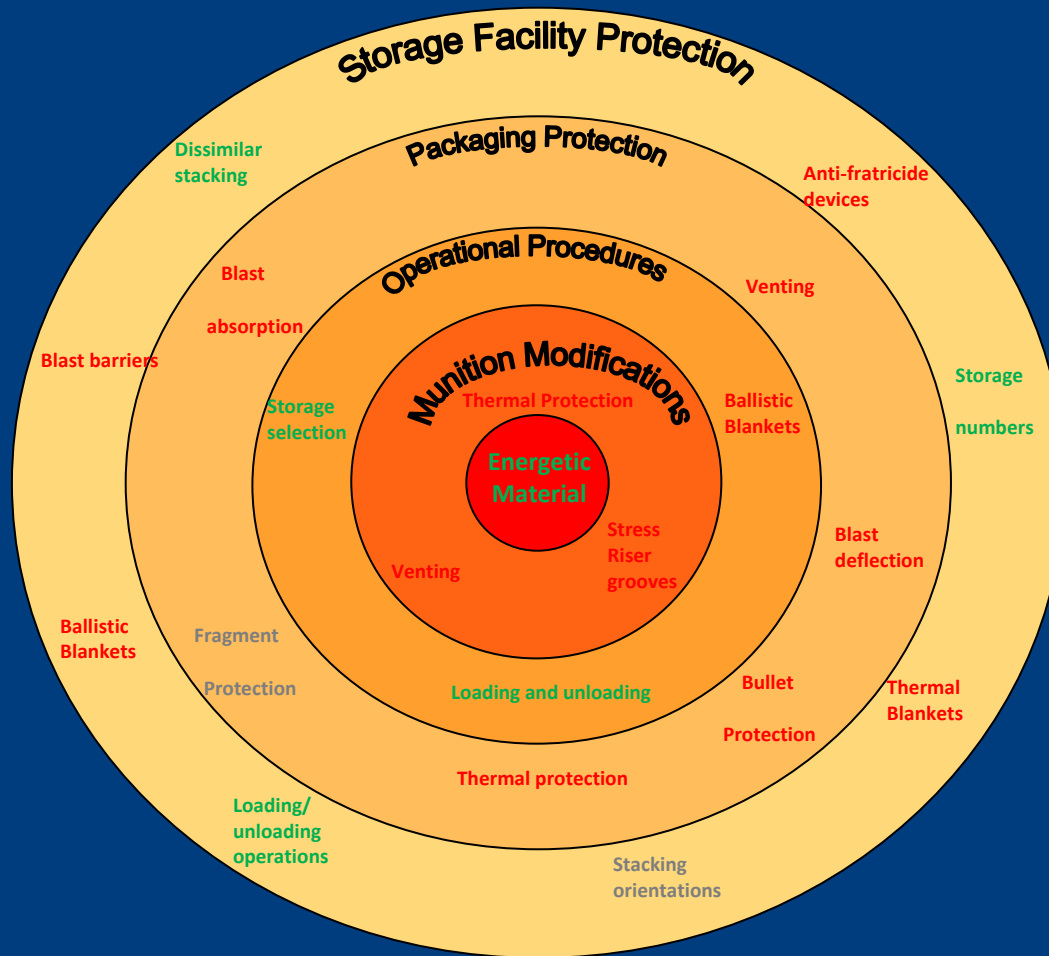
- Stress Riser Grooves - not yet implemented by ADF
- Venting - not yet implemented by ADF
- Thermal Protection - not yet implemented by ADF

IM Implementation - Potential Options

Energetic Materials

- Indigenous Manufacture of IM Compliant Formulations - not yet implemented
- R&D of new formulations - ongoing activity (DSTO)
- Prototyping - ongoing activity (DSTO)

Maturity of Potential Options - Summary



Introduction into Service

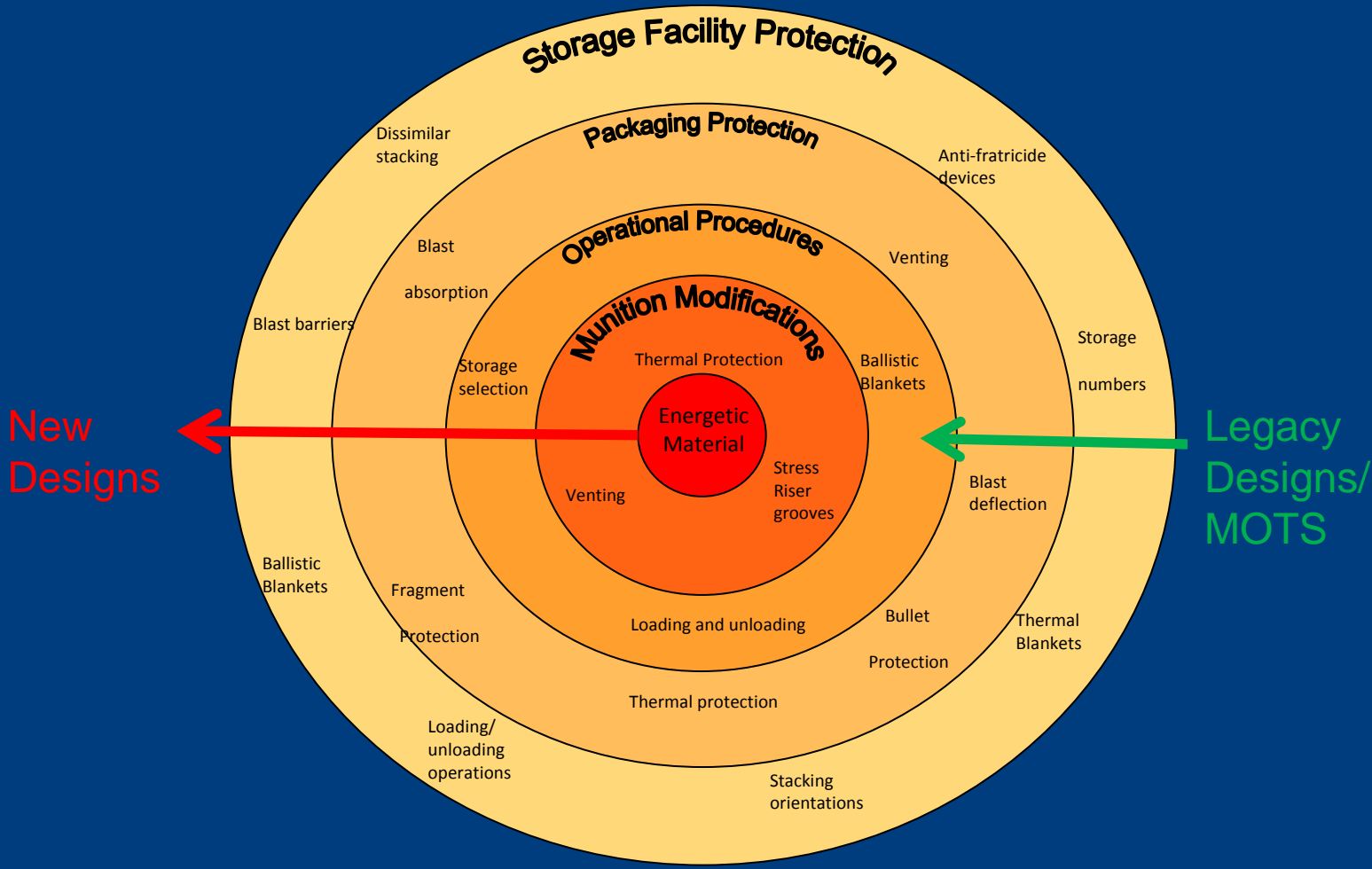
- Any change in design of EO requires re-certification to demonstrate safe delivery of capability throughout the life of type of the item.

Trial	Estimated Effort (Man Hours)	Approximate Cost* (A\$k)
Safety & Suitability for Service	800	100
IM Testing	2200	150-200
Integration & Performance Assessment	1800	120
Total	4800	370-420

- **Avoid design changes to EO for In-service items !!**

*Based on 2005 costs

Potential IM Mitigation Strategies



The Way Forward – Revision of DEOP 114(AM1)

DI(G) Log 07-10

- Defence and single Service IM objectives and priorities
- List IM Status of in-Service EO and extant IM Waivers
- Priority list of in-Service EO for IM implementation
- Plan for management of IM Waivers for in-Service EO
- Identify opportunities to incorporate new IM technologies
- Roles and responsibilities of organisations providing resources
- Resources required to achieve the plan

DEOP 114(AM1)

- Addressed
- Not addressed in 1st version
- Partially addressed
- Addressed
- Not addressed in 1st version
- Addressed
- Not addressed in 1st version

Recommended Way Forward (1)

- Generate an IM Implementation Assessment (IMIA) for the top 3 priority items
- IMIA to Establish:
 - Degree of IM compliance
 - Maturity of specific Mitigation Technology
 - Opportunities for technology insertion
 - Resources required to achieve IM compliance
 - Timescales
 - Key milestone and review dates
- Once generated, the IMIA could be used to support funding requests for transition to IM.

Recommended Way Forward (2)

- Use IMIA to secure funding for transition towards IM compliance/gauge commitment to transitioning the in-service EO inventory towards IM compliance
- Investigate alternative packaging/packaging arrangements to improve IM signatures (full IM compliance may not be possible)
- Develop a predictive capability for determining IM response (computer models) as discussed in AOP-39 edn 2

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