



DPA

**Safety and Environmental
Assessment of Ordnance,
Munitions and Explosives**

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SCOPE

- **Introduction**
- **ASEMS: POSMS & POEMS**
- **OME Requirements**
- **Scope for Rationalisation of Testing**
- **International Collaboration**
- **Better use of the Available Information**

Introduction

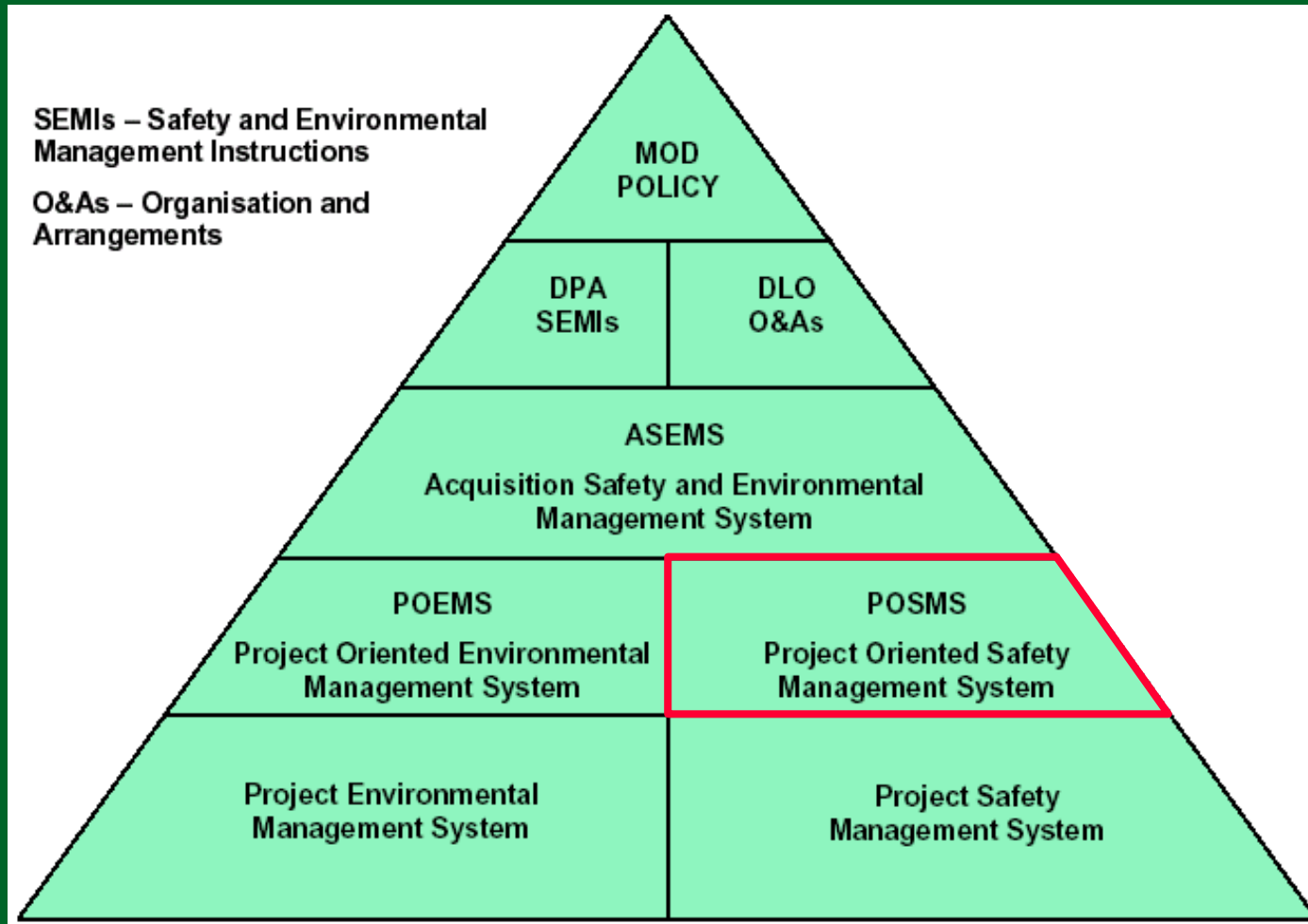
- **Increased OME requirements placed on IPTs is heading towards becoming overwhelming**
 - **Increased data to support more robust safety cases**
 - **Recent Environmental EU legislation requires environmental assessment for OME**
 - **.....**
- **As a consequence there is a real need to prioritise and make best use of the available resources**
 - **Through a coordinated OME assessment process**
 - **By rationalising testing requirements**

Acquisition Safety and Environmental Management System

ASEMS:

- Generic, one approach for all domains
- Standard and recognised structure
- Alignment between Safety and Environment
- Builds on current practice
- Better understanding = better products!
- Improved assurance

Structure



POSMS

The Core Procedures
The Support Procedures
The Assurance and Audit Procedures



Key Requirements:

Safety-related functionality identified early

Safety Competence of Development Team

ALARP claims rest on active Risk Reduction

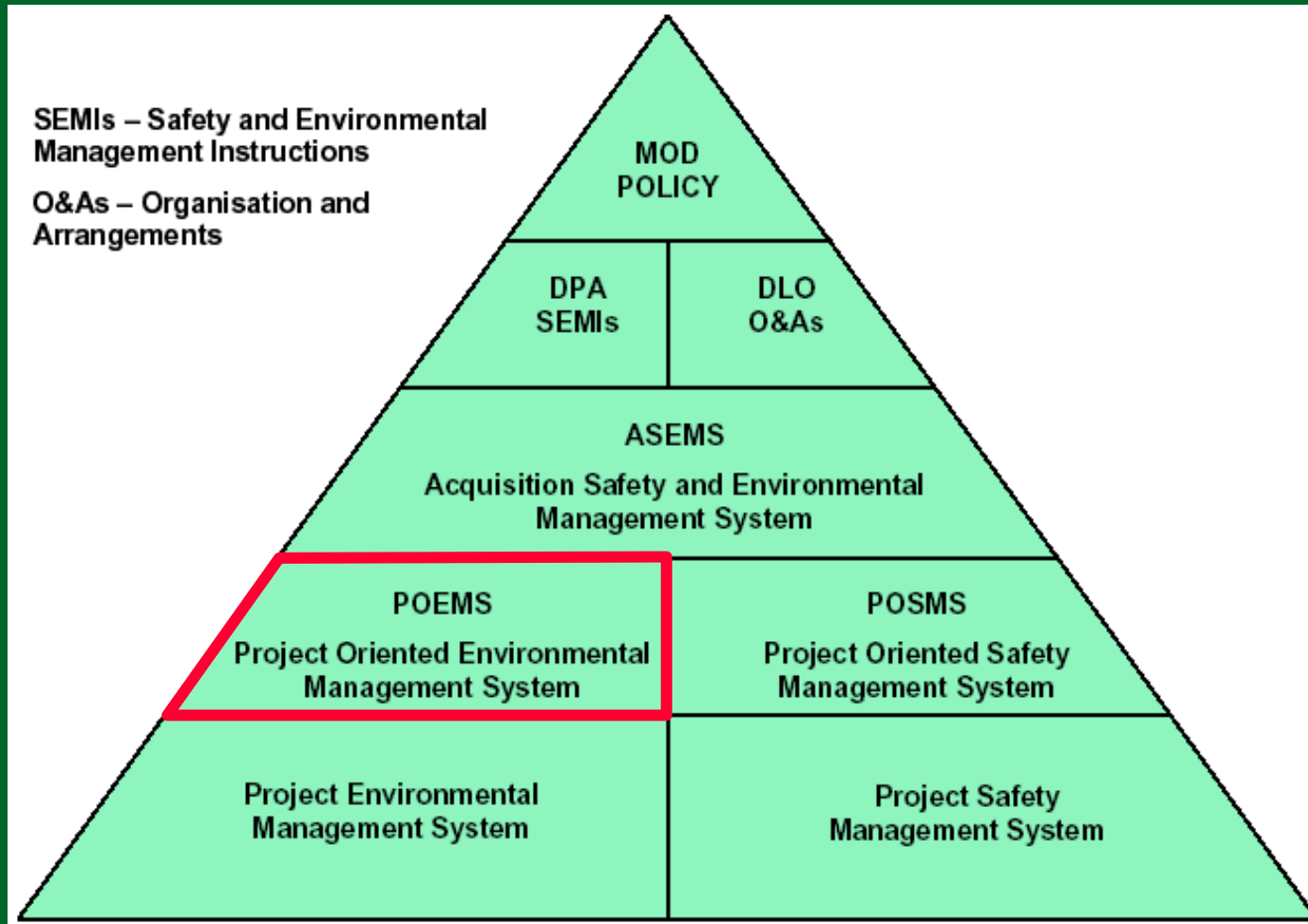
Process for Risk Acceptance & Intolerable Risks

Involve Stakeholders, including Regulator(s)

Strong link to Project Risk Management

Plan for In-service SMS

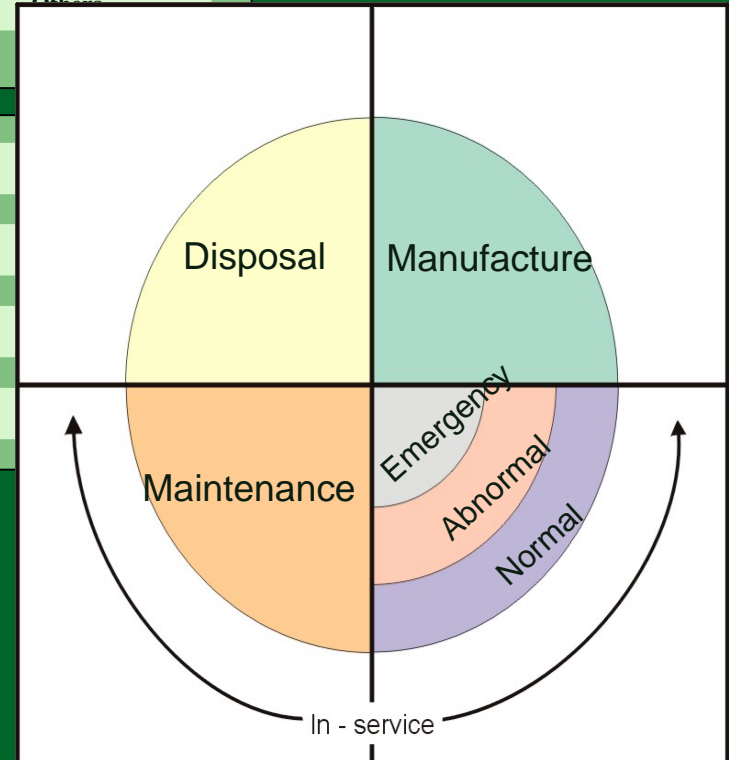
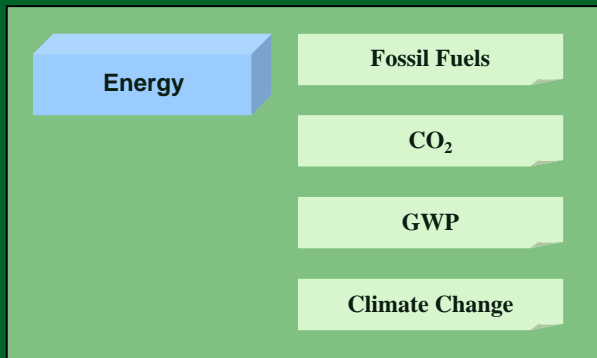
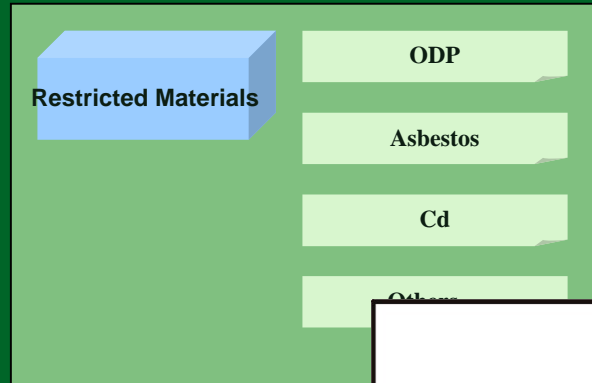
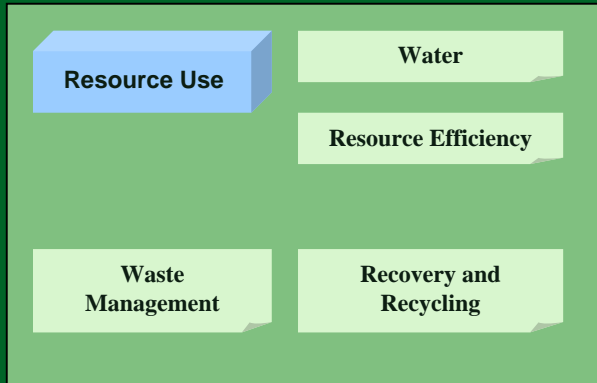
Structure



POEMS

- **Recent legislation requires an environmental impact assessment to be made**
- **Environmental risk needs to be properly assessed as failure to manage environmental issues could result in the following:**
 - **Cost inflation at all life cycle stages including disposal**
 - **Delays to projects and in-service dates**
 - **Legal penalties from breaching regulations**
 - **Clean-up, remediation or compensation costs**
 - **Reputation damage**
 - **Environmental impairment**
 - **Restrictions upon training or peacetime operations**

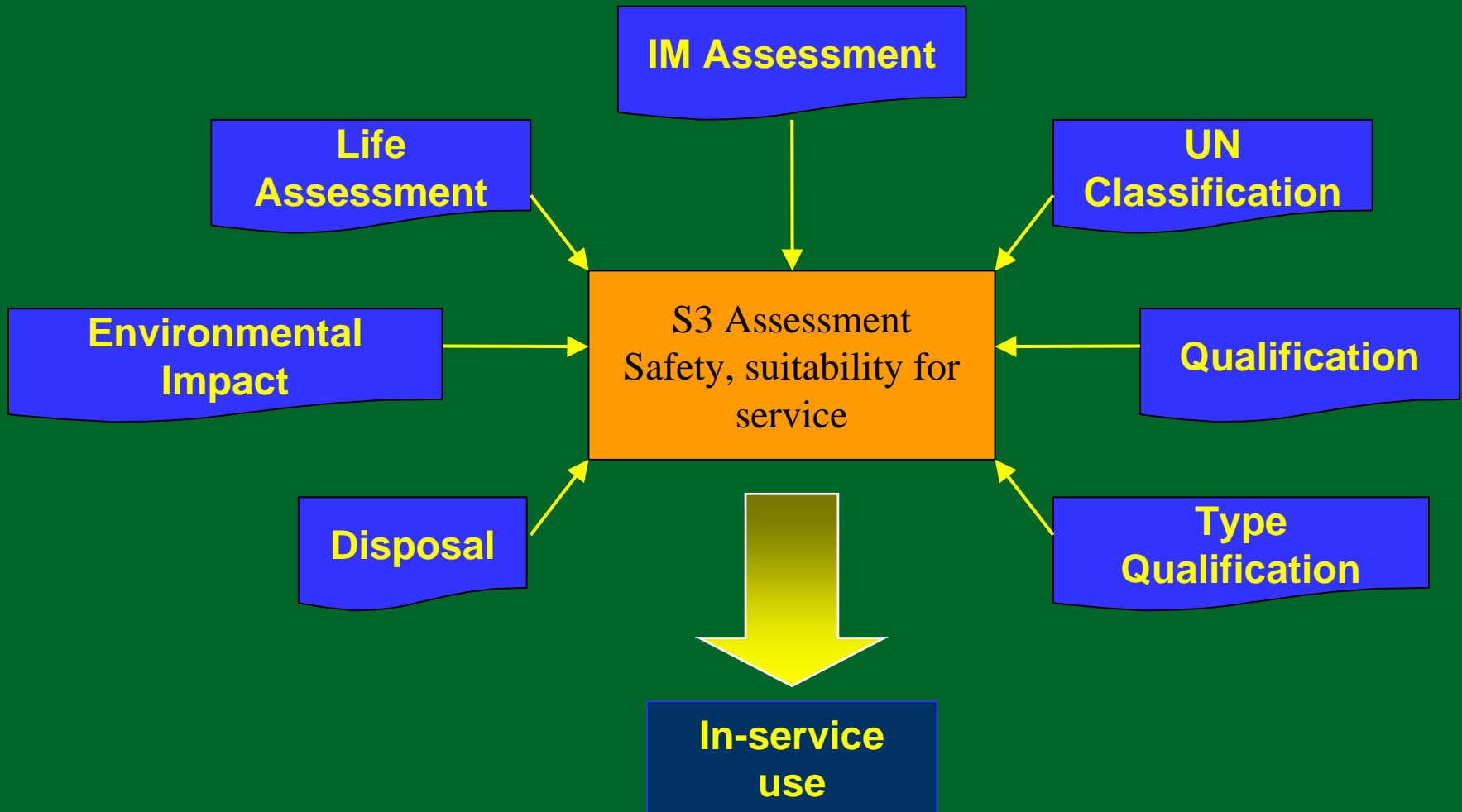
Impacts during the Life Cycle



Comparison of POSMS and POEMS

POSMS Element	POEMS Element
Safety Committee	Environmental Committee
Hazard Identification and Analysis. Risk and ALARP Evaluation Risk Estimation	Environmental Impact Assessment
Hazard Log	Environmental Feature Matrix
Safety Case	Environmental Case
Safety Case Reports	Output from the POEMS procedures
Safety Auditing	System and Equipment Performance Auditing


OME Requirements



*OME Assessment Requires a
Joined-up-Approach to:*



*Prevent duplication of effort
(including testing)*



*Rationalise the amount of testing to
support assessments*

Qualification Testing

- **There is scope to rationalise the EM qualification tests used in the UK**
- **For some of these tests there is not a sound scientific understanding or basis**
- **It is proposed to reduce testing requirements and focus efforts on gaining a scientific understanding of the explosiveness and sensitiveness of the material being qualified**

Qualification Testing

- Testing requirements would also be determined by the level of confidence that we have in the material i.e.

Unknown formulations for which we have little or no experience

New formulations with know well characterised ingredients from know sources

Re-qualification requirements due to process changes

Confidence



No. of Tests Required



Hazard Classification

- **UK recognises the need for change to the series 7 HD 1.6 tests**

Current

- EIDS cap test
- EIDS Gap test
- Susan or Friability test
- EIDS bullet impact or friability test
- EIDS external fire test
- EIDS external slow cook off test
- HD 1.6 article external fire, slow cook off, bullet impact & stack tests

Proposed

- EIDS cap test
- Tube test (internal ignition), Susan or Friability test
- Tube test (fast heating)
- Tube test (slow heating)
- HD 1.6 article external fire, slow cook off, fragment impact & stack tests

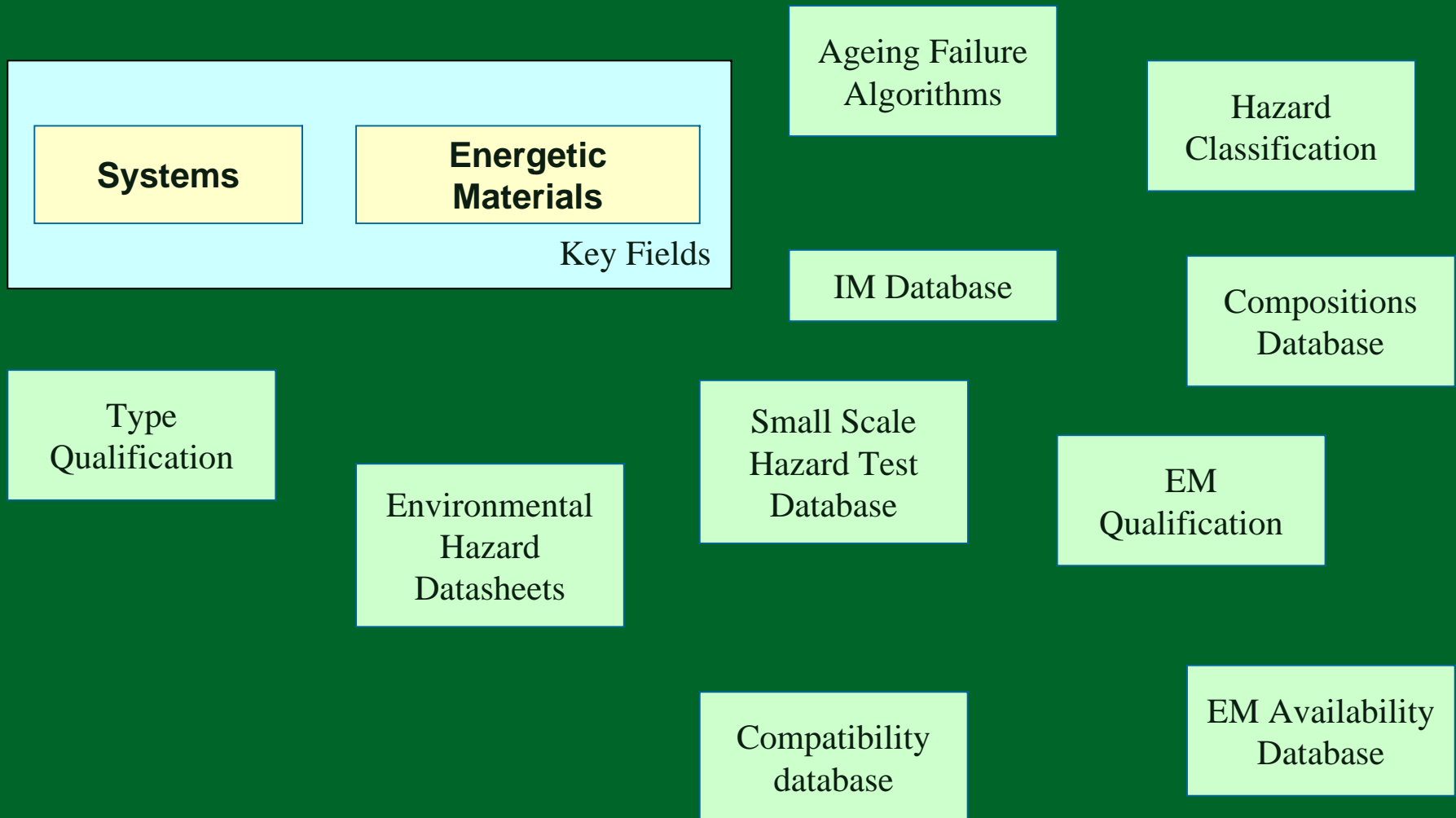
International Collaboration

- **Common Procurement offers the possibility of:**
 - **Sharing qualification and type qualification costs**
 - **Joint IM assessment**
 - **.....**
- **Future of NATO AOP-26 (EM Qualification) and AOP-7 (Test methods)?**

OME Knowledge Base

- **Need to have access to all the available information:**
 - **Test Data**
 - **Historical Data**
 - **Expert Opinion**
 - **...**
- **MOD currently uses HADDIS and ADDIS**
- **Requirement for an improved Knowledge base which makes information more generally available**
 - **Incorporating many more specialist databases**

Database Structure



Conclusions

- **Recognised need to rationalise safety and environmental assessment of OME**
- **Need to implement a joined-up-approach for safety and environmental requirements**
- **Need to reduce duplication and make the most use of the data available**