PFG
PRICING & FORECASTING GROUP

The US/UK Bilateral on improving software acquisition - a UK view

Dave Thombs BSc PhD

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Disclaimer

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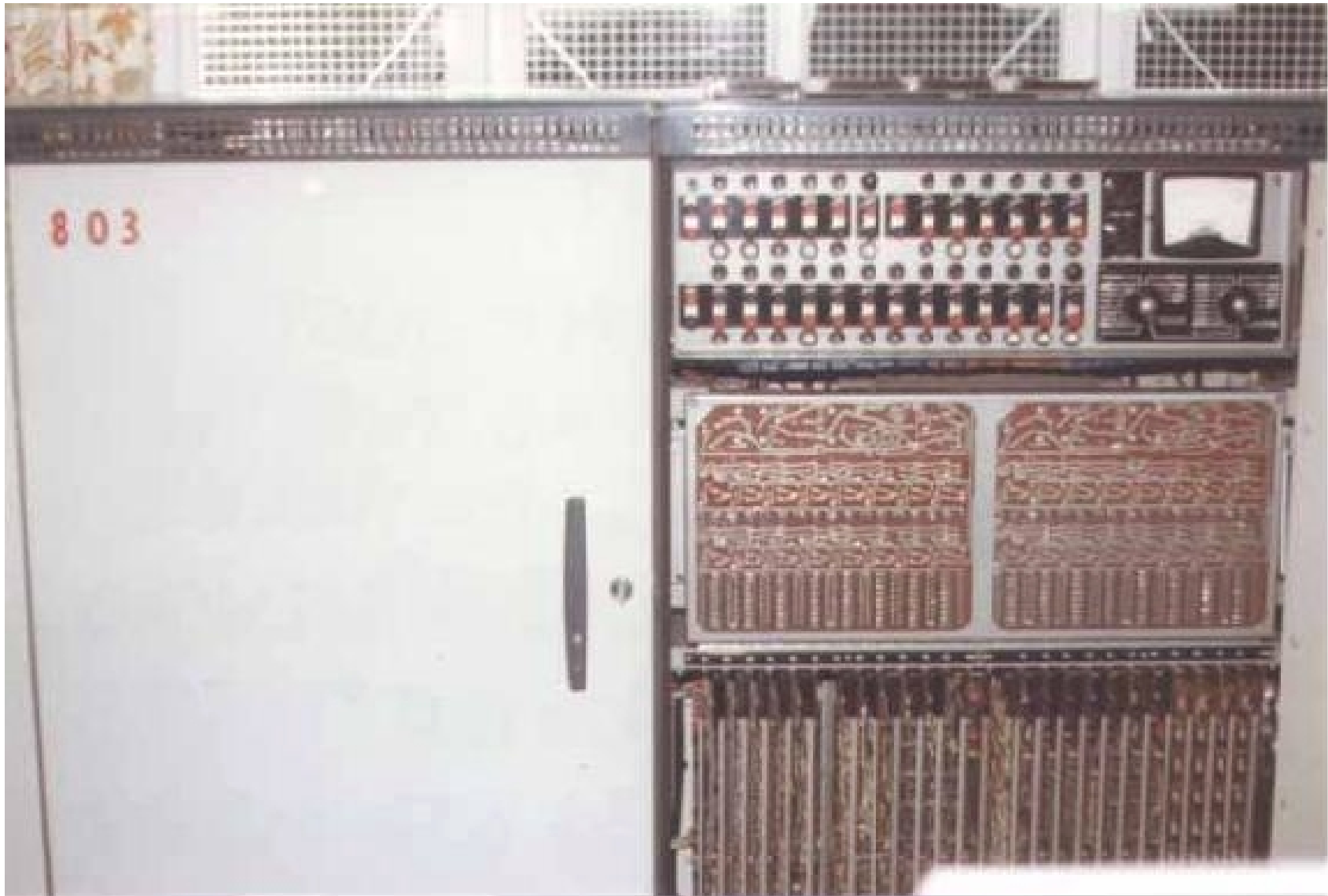
Contents

- Personal.

- Background to the current problem.

- The task.

- Activities to date.

- Potential future joint activities.

- Expected benefits.

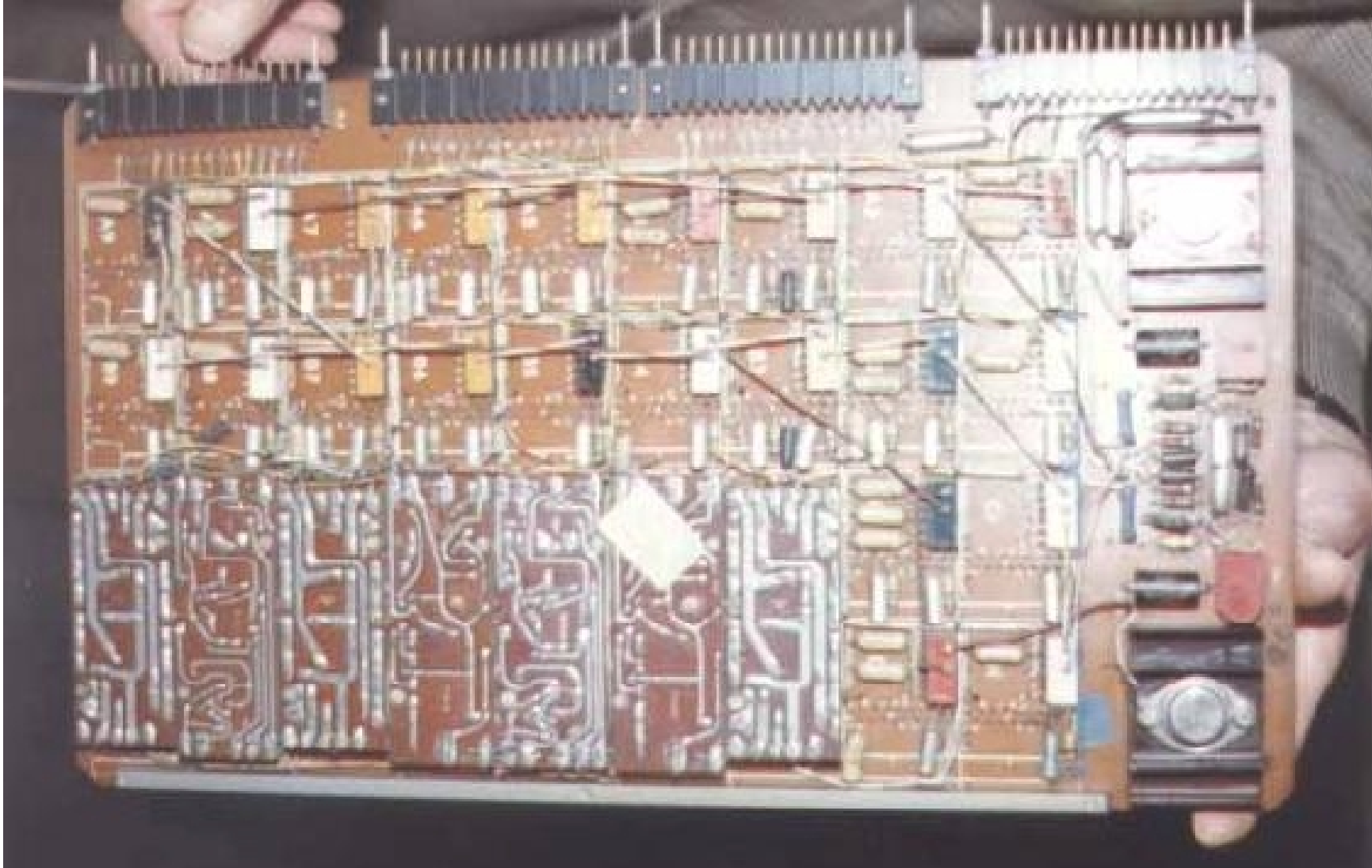**'Professional Services That Count'**

Personal

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Personal

- Involved with software for 38 years.
- Developed first program for Elliot 803 in 1965 in assembler.
- Joined MOD in 1973 - software development for internal ballistics.
- Since then, programming, analysis, test, research, QA, requirements, management of development and support teams, standards, safety, mission and security critical systems and costing.
- Left MOD in 2002 and set up a consultancy.

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Background

- **Problems with software dependent projects:**

  - "Achieving sufficient reliability in systems which are becoming increasingly integrated into the central activities of modern society."

  - "The difficulties of meeting schedules and specifications on large software projects,"

  - "The education of software engineers."

  - "It is of the utmost importance that all those responsible for large projects involving computers should take care to avoid making demands on software that go far beyond the present state of technology unless the very considerable risks involved can be tolerated."

  - "Define a subset of the system which is small enough to bring to an operational state within 12 months, then build on that subsystem."

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- ""To a surprising degree, the conclusions of these studies agree with each other and remain valid; the recommendations continue to be wise. The chairman of several study groups briefed us. All had one message: very little action has been taken to implement the recommendations. If the military software problem is real, it is not perceived as urgent by most high military officers and DoD civilian officials. Our Task Force does not undertake to prove that is urgent; we do tell how to attack it if one wants to." Our current Task Force could not state this any better."

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Background

- ## Problems with software dependent projects

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NATO Conference, Garmisch, Oct 1968

Defense Science Board Task Force on Defense Software, November 2000

More Background

- UK/US Bilateral Meeting 15 April 2002.

- Sir Robert Walmsley and Mike Wynne agreed a number of actions, including,

- 'How to measure the progress of software development '
  - Identifying approaches
  - Identifying exemplars
  - Sharing best practice
  - Challenging existing models
  - "Self teaching" software field
  - Using external experts
  - Industry and government performance

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The Task

■ Refine the question:

- Identify UK and US 'Hot Topics'
- Exchange information
- Define key problem areas and POC
- Define quick wins
- Plan for future joint activities

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Activities to date

- Meetings.
- Personnel involved.
- Hot topics identified.
- Information Interchange.
- Key Problem areas and POC identified.
- Potential Quick Wins.

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Meetings

■ Meetings held:
  - 10 June 2002 (UK)
  - 27 September 2002 (US)
  - 21 November 2002 (UK)
  - 27 January 2003 / 31 January 2003 (US)

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DPA

Personnel

UK

Dr. David Thombs, SSS Ltd (UK lead)

Mr. Nick Pearse, PFG Group Leader

Mr. Terry Proffitt, PFG CF Team Leader

Mr Chris Whittaker, PFG CF Software

Mr David Ellis, DCP22, Commercial Policy

Ms Shonnag Allison PFG CF Software4

*Mr Simon Dakin, PDG PM Head Project
   Management*

Australia

Mr. Matt Ashford, Liaison to USD(AT&L)/SIS

US

Dr. Jim Linnehan, OASA(ALT) (US Lead)

Ms. Kristen Baldwin, OUSD(AT&L)/SIS

Mr. Rob Gold, OUSD(AT&L)/SIS

Dr. Rich Turner, OUSD(AT&L)/SIS

Mr. Joe Jarzombek, OUSD(AT&L)/SIS

Mr. Tom Coonce, OSD/PA&E

Dr. John Bailey, IDA

Ms. Amanda Harrigan, OUSD(AT&L)/SIS

Mr Russ Vogel, Executive Secretary, CAIG, OSD

Germany

Mr. Manfred Muehlen, Liaison to USD(AT&L)/SIS

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Define US Hot Topics

- Policy
- Requirement determination and documentation
- Evolutionary Acquisition and Spiral Development
- Testing and Integration leading to successful IOT&E
- Software performance measures – metrics for management/oversight
- Process Maturity and Improvement (SW CMM/CMMI)
- Contracts – Intellectual property rights, incentives, past performance criteria
- Information Assurance (IA)
- Software Cost Estimating
- Collecting, disseminating and using Best Practices
- Software skills of acquisition workforce; shortage of SW engineers
- Strengthening and stabilizing the technology base

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Information exchange

- Information exchanged on most 'Hot Topics'
- 22 MOD documents supplied
- 85 DoD documents supplied
- All reviewed!

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Common areas of interest -1

- Policy
- Requirement determination and documentation
- Evolutionary Acquisition and Spiral Development
- Testing and Integration leading to successful IOT&E
- Software performance measures – metrics for management/oversight
- Process Maturity and Improvement (SW CMM/CMMI)
- Contracts – Intellectual property rights, incentives, past performance criteria
- Information Assurance (IA)

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Common areas of interest -2

- Software Cost Estimating
- Collecting, disseminating and using Best Practices
- Software skills of acquisition workforce; shortage of SW engineers
- Strengthening and stabilizing the technology base
- IEP B88 (MOU between UK & US)
- Document Management System (Index of Materials)
- Software TRLs/software product maturity and software risk assessment
- Lack of a Joint MOD/Industry software acquisition (and support) forum

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Quick Wins

■ Still to be agreed, but the following look interesting:

■ Joint development of a list of Key Questions for decision reviews.

■ UK to get CPARS database design

■ UK to get SRDR database design

■ UK to get US DOD IT Acquisition Core Competencies and related courses

■ US gets evolutionary acquisition

■ UK to join PM Community of Practice (PM COP)

■ Establish workspace for team documentation

■ UK SAFSEC/US Integrity Assurance Collaboration
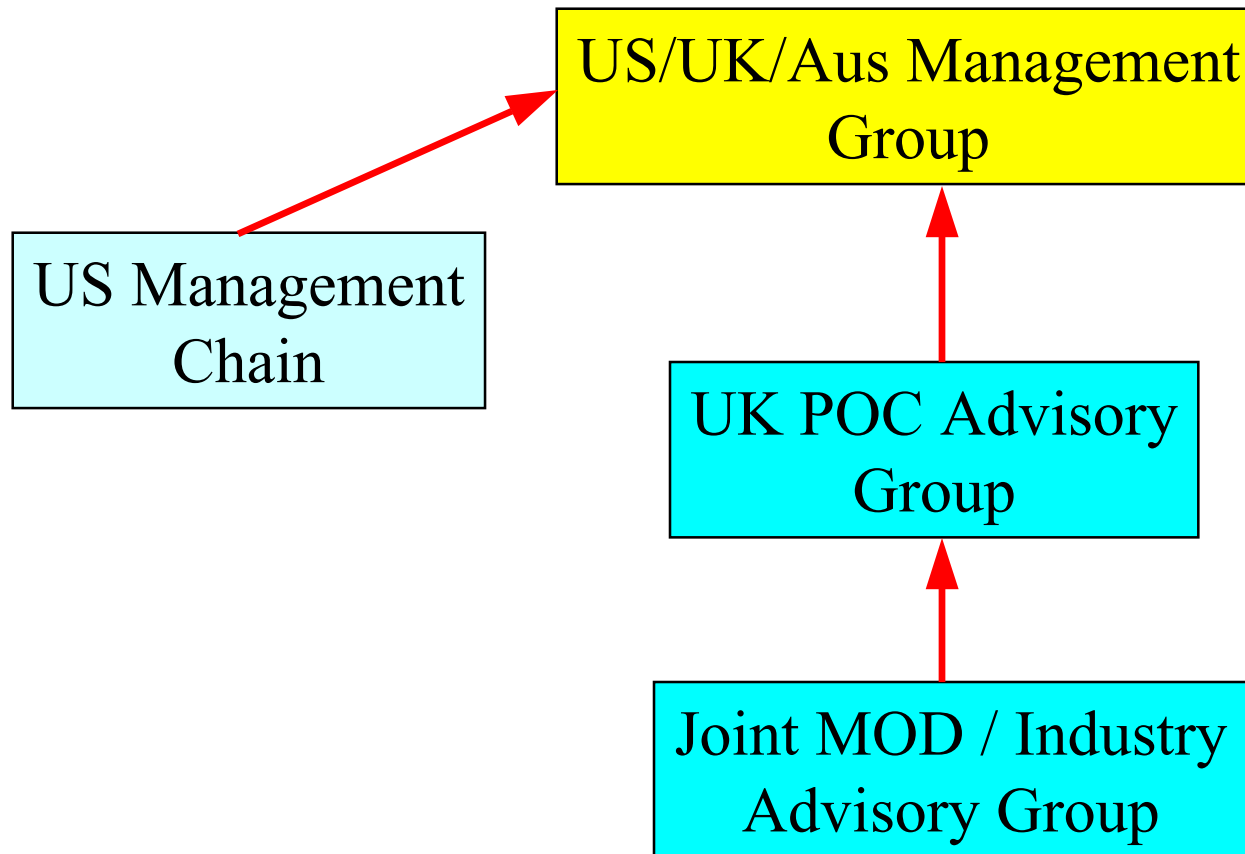
■ Identified areas of international commonality

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Possible Joint Activities

■ Acquisition milestones/gates/documentation

■ Requirements

■ Common process maturity model

    – Registered appraisal acceptance, potentially internationally

■ Software TRLs

■ Create a common set of competencies (common training, common guidance, common resources, etc.)

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Possible Management

US/UK/Aus Management Group

US Management Chain

UK POC Advisory Group

Joint MOD / Industry Advisory Group

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Plan for future joint activities

- To be defined at 31 January meeting
- Next meeting May 2003 UK

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Expected benefits

- Recognition at high level that we have a problem.

- Pooling of resources.

- Not re-inventing the wheel twice over.

- Different skills and experience brought in.

- Common view of the problems.

- Reduce cost over runs, schedule slip and meet requirements.

- No silver bullet - need to move forward in all areas.

- These issues won't go away and can only get worse - must be tackled now.

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Any Questions

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Key problem areas

Topic	USA	UK	Australia	Topic	USA	UK	Australia
Acquisition Policy				**Tools & Techniques**			
Procurement				*Forecasting Tools*			
Support				*CMM*			
Risk management				**Academia**			
Management				*Research*			
Definition				*Development*			
Project Management				*ARP & CRP Focus*			
Pre-contract				**Collaboration**			
Contract Award				*US/UK/AUS*			
Contract monitoring				*HSE, CAA*			
AMS				*Internal MoD*			
LFE				*Industry*			
Guidance Documents				*ESA Cost Group*			
Requirements				**Forecasting**			
Definition				*Cost*			
Acceptance				*Schedule*			
Standards				**Resources**			
Process				*Skilled Staff*			
Product				*This Programme*			
Technology				**Approvals**			
Software Engineering				*TRLs*			
Training							
Awareness							
Specialised							

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