

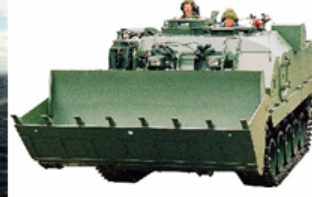


# Institute of Engineering Technology / British Computer Society: ISA Working Group Seminar, 7<sup>th</sup> December 2006

## Independent Safety Assessment – Adding Value

## Introduction

- Leigh Walsh ~ Senior Safety Engineer, Atkins Consultants Limited (Defence Systems)
- Lead ISA for the Nimrod MRA4 Training System
- Previous ISA roles include:
  - TERRIER (next generation air-transportable armoured combat engineer vehicle for the Royal Engineers)
  - FEPS (Field Electrical Power Source)
  - Integrated Control Systems (ICS) for Challenger 2
  - Numerous Royal Navy Warships Fire Certification Audits
  - C-17 Short Term Strategic Airlift
  - Tank Systems Support (TSS) IPT



## Background

- **April 2005:** MoD Land Systems Safety Office (LSSO) audit of the Nimrod MRA4 Training System IPT
- One of the key recommendations – Appointment of an ISA
- **July 2005:** Atkins invited to submit proposal for ISA Lead ISA for the Nimrod MRA4 Training System
- **September 2005:** Atkins formally awarded ISA contract (Key objective “*To establish a baseline to move forward*”)
- **July 2006:** Atkins formally deliver ISA Report and presentation to key stakeholders



## ISA Responsibility

- Defence Standard 00-56 (Safety Management Requirements for Defence Systems) (Interim) Issue 3 ~ December 2004
- Safety and Reliability Society (Western Branch) Defence Standard 00-56 Working Group ~ October 2005
- Atkins encouraged to see that roles and responsibilities of Independent Safety Auditors are increasing
- MoD Acquisition Safety and Environmental Support Group (ASESG) have started to seek formal assurance of auditor competence
- Atkins ISA team included an IRCA (International Register of Certified Auditors) certified Lead Auditor (awarded the Gold Star Award).

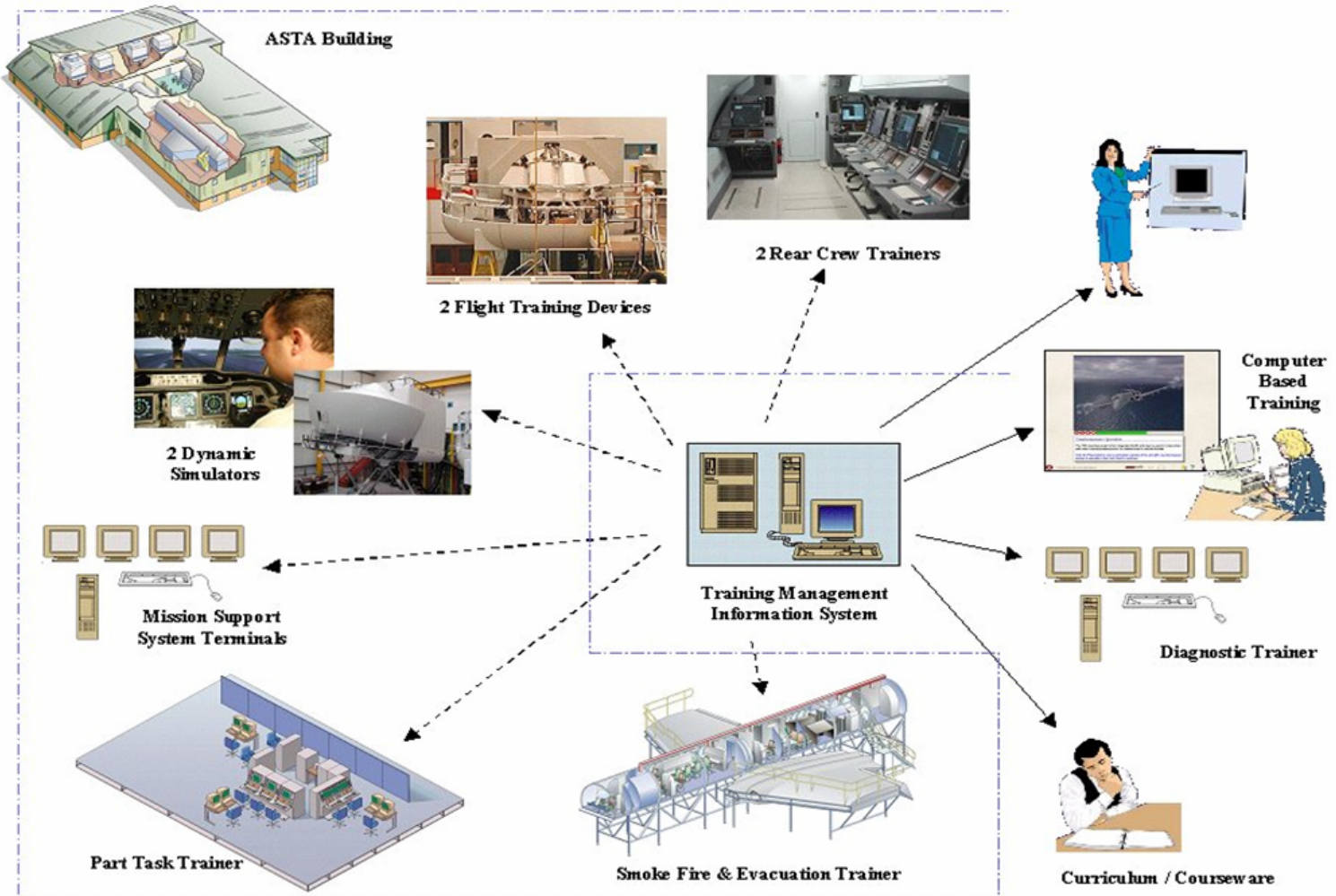


## Nimrod MRA4 ~ The aircraft

- Key Dates ~
  - December 1996: BAE Systems awarded contract to build Nimrod MRA4 aircraft
  - August 2004: Nimrod MRA4 achieved its inaugural flight from Woodford in August 2004
  - 2010: MRA4 is provisionally due to enter service
- Royal Air Force's new Maritime, Reconnnaissance and Attack aircraft (successor to the current in-service Nimrod MR2)
- Equipped with the latest in sensors and mission systems enhancing the aircraft with additional capability beyond its traditional maritime roles
- Based at RAF Kinloss

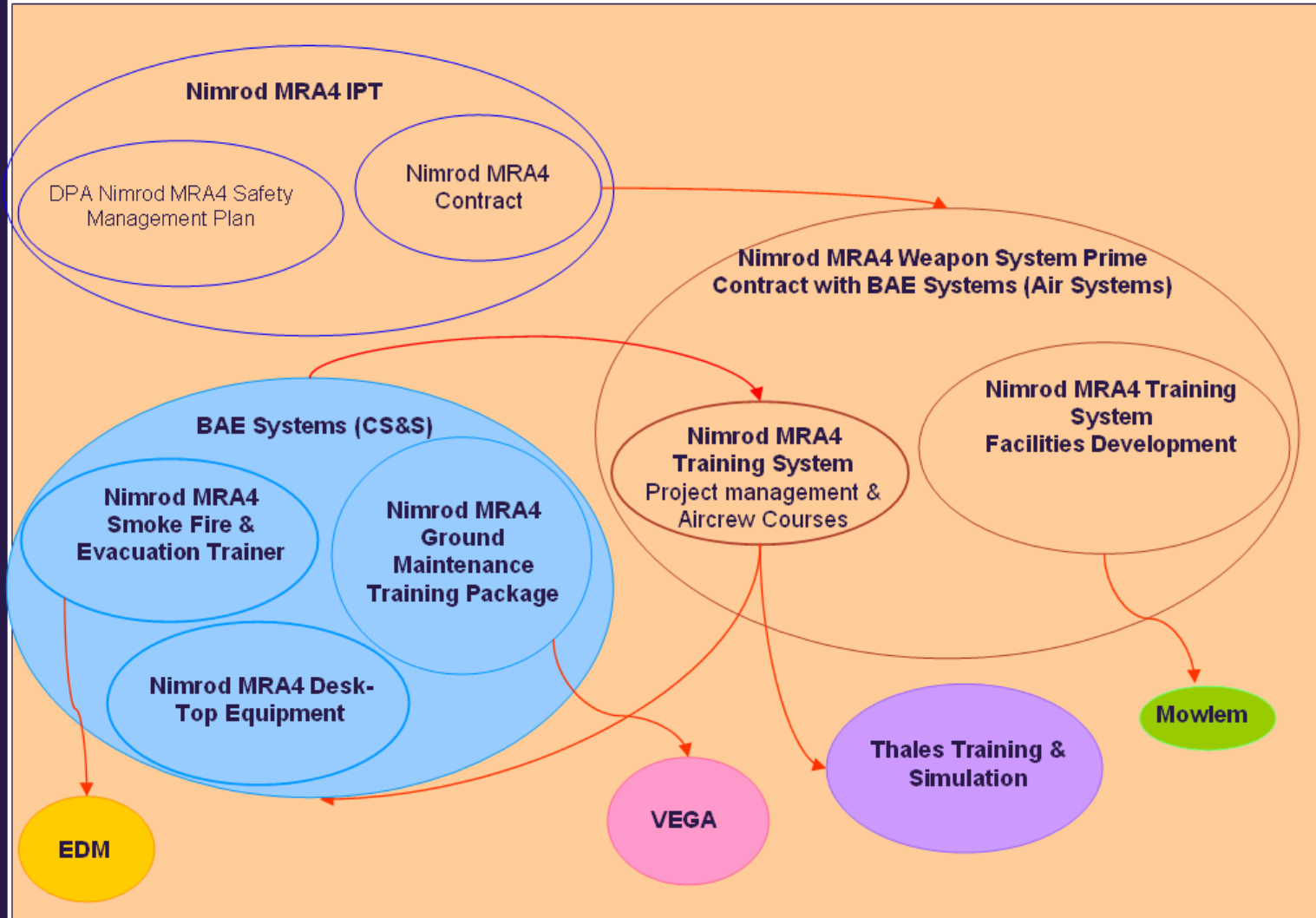


## Nimrod MRA4 ~ The Training System



*...A comprehensive package allowing safe training of the aircrew & groundcrew on aircraft systems in as realistic an environment as possible.*

# Nimrod MRA4 Training System (Contractual Relationship)



## Nimrod MRA4 ~ Key ISA Tasks

- Key audit activities included:
  - Audit of IPT Safety **Documentation**
  - Audit of **Contractual** Requirements (Safety)
  - Audit of ASTA Building Construction **Documentation** (Safety)
  - Audit of Thales T&S Safety **Documentation**
  - Audit of Thales T&S Safety Management **System** (Feb 2006)
  - Audit of BAE Safety **Documentation**
  - Audit of BAE Safety Management **System** (March 2006)





## Adding Value (1)

- Based upon previous ISA experience, Atkins were aware of a number of **common pitfalls** that occur in similar project safety management systems for such complex systems.
- As such, the Atkins ISA team audited the relevant Safety Management Systems in order to provide the Nimrod MRA4 IPT with particular assurance that:
  - The System Hazard Analysis has considered the safety of the 'complete' system, and potential hazards have been identified at the integrated 'system' level (and interfaces), rather than just the sub-system hazards.
  - Sub-contractors safety requirements have been flowed down from BAE Systems (the Prime Contractor), and that the sub-contractors understand what these requirements are.



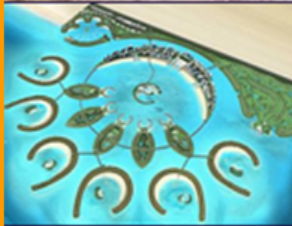
## Adding Value (2)

- Atkins have supported the RAF in its review of Nimrod aircraft maintenance.
- Understand issues involved regarding ground and aircrew courseware and training courses and the supporting network.
- Ground / aircrew courseware and training courses are being developed jointly by the MoD and BAE Systems, addressing any Training 'fidelity' issues.



## Adding Value (3)

- Numerous recommendations made to **enhance** current safety status
- Additional resource provided for the safety programme
- Health & Safety experience as well as system safety experience ~ Able to advise on compliance status with mandatory legislative requirements
- Whilst outside the scope of the contract, platform level safety issues were raised for discussion with the IPT
- Although contract ended in July 2006:
  - Revised Part 1 Safety Case Report for the Training System has since been received and reviewed (no contractual obligation)
  - Revised Safety Management Plan for the Training System has since been received and reviewed (no contractual obligation)
- Selected Client Feedback:
  - *"...Atkins were invaluable"*
  - *"...Quality of audit process and professionalism throughout has been critical to the project"*
  - *"...Atkins auditors have impressed both the DPA and BAE Systems Project Teams"*



## Questions

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