

EARNED VALUE MANAGEMENT IN THE UNITED KINGDOM



REPORT DOCUMENTATION PAGE

Form Approved OMB No.
0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

1. REPORT DATE (DD-MM-YYYY) 18-10-1998	2. REPORT TYPE Conference presentation	3. DATES COVERED (FROM - TO) 18-10-1998 to 22-10-1998
--	--	---

4. TITLE AND SUBTITLE Earned Value Management in the United Kingdom Unclassified	5a. CONTRACT NUMBER
	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S) Andrews, Roger ; Nicholson, Martin ; Blackmore, Martin ;	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME AND ADDRESS British Aerospace XXXXX XXXXX, XXXXXXXX	8. PERFORMING ORGANIZATION REPORT NUMBER
---	---

9. SPONSORING/MONITORING AGENCY NAME AND ADDRESS OUSD(A&T) ,	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
APUBLIC RELEASE
,

13. SUPPLEMENTARY NOTES
Presentations and Papers from 10th Annual International Integrated Program Management Conference held October 18-22, 1998, Tysons Corner, VA.

14. ABSTRACT
See Report.

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:	17. LIMITATION OF ABSTRACT Public Release	18. NUMBER OF PAGES 64	19. NAME OF RESPONSIBLE PERSON http://www.acq.osd.mil/pm/paperpres/us_evm98/109 (blank) lfenster@dtic.mil
			19b. TELEPHONE NUMBER International Area Code Area Code Telephone Number 703767-9007 DSN 427-9007

a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified
----------------------------------	------------------------------------	-------------------------------------

PRESENTERS

Introduction / Overview / The Future

Roger Andrews

UK MoD Perspective

Martin Blackmore

The Hawk LIF programme

Martin Nicholson

Special thanks to Kevin Lonergan as chairman of the UK EV Users Group

BRITISH AEROSPACE

Military Aircraft & Aerostructures



TOPICS

- **INTRODUCTION**
- **EVM IN THE UK**
- **UK Ministry of Defence EVM**
- **OVERVIEW OF EVM IN BRITISH AEROSPACE**
- **Military Aircraft & Aerostructures**
- **THE HAWK LEAD IN FIGHTER PROGRAMME**
- **THE FUTURE**



INTRODUCTION

- **UK Industry operates in a Global market place**
 - Exports > 75%
 - ~~All Customers demand~~ **deserve value for money**
- ② **Customers require visibility that industry is spending their money [the taxpayers] wisely and value is being earned according to an agreed plan**
- ② **Companies need to have effective Management of programs in face of Global competition and fixed price contracting**

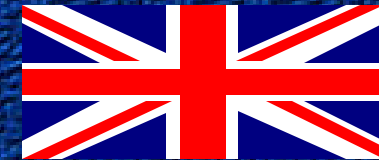


UK BACKGROUND IN EVM

- **Used in varying degrees by most large UK Defence Companies over a number of years**
- **CSCS Industry group running for since 1994 with UK MoD participation**
- **In 1998 the group was renamed the “UK EV USERS GROUP” providing the focus on EVM in the UK**



UK EARNED VALUE USERS GROUP

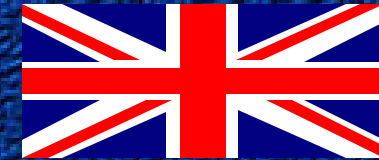


■ Participants

- PMIS [Chairman]
- British Aerospace
- AWE Aldermaston
- GKN Westland
- MoD Procurement Management Policy
- Rolls Royce
- Vosper Thornycroft
- Vickers
- GEC



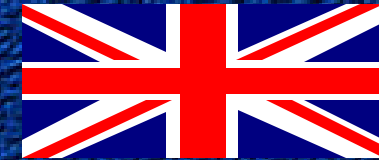
UK EARNED VALUE USERS GROUP OBJECTIVES



- Forum to discuss common areas of interest between industry members and UK MoD
- Sharing of Best Practice across all areas
- Agreement to common approaches / standard guidelines
- Provides a single voice into other interested parties in the international arena



UK EARNED VALUE USERS GROUP ACTIONS



- Review ANSI Standard 748 to establish if it can be the basis for an internationally agreed EVM document owned by industry and endorsed by Government
- Set up working relationships with US industry to promote best practice
- Consider how to embrace the wider UK EVM community
- Link the group into UK MoD “Smart Procurement”

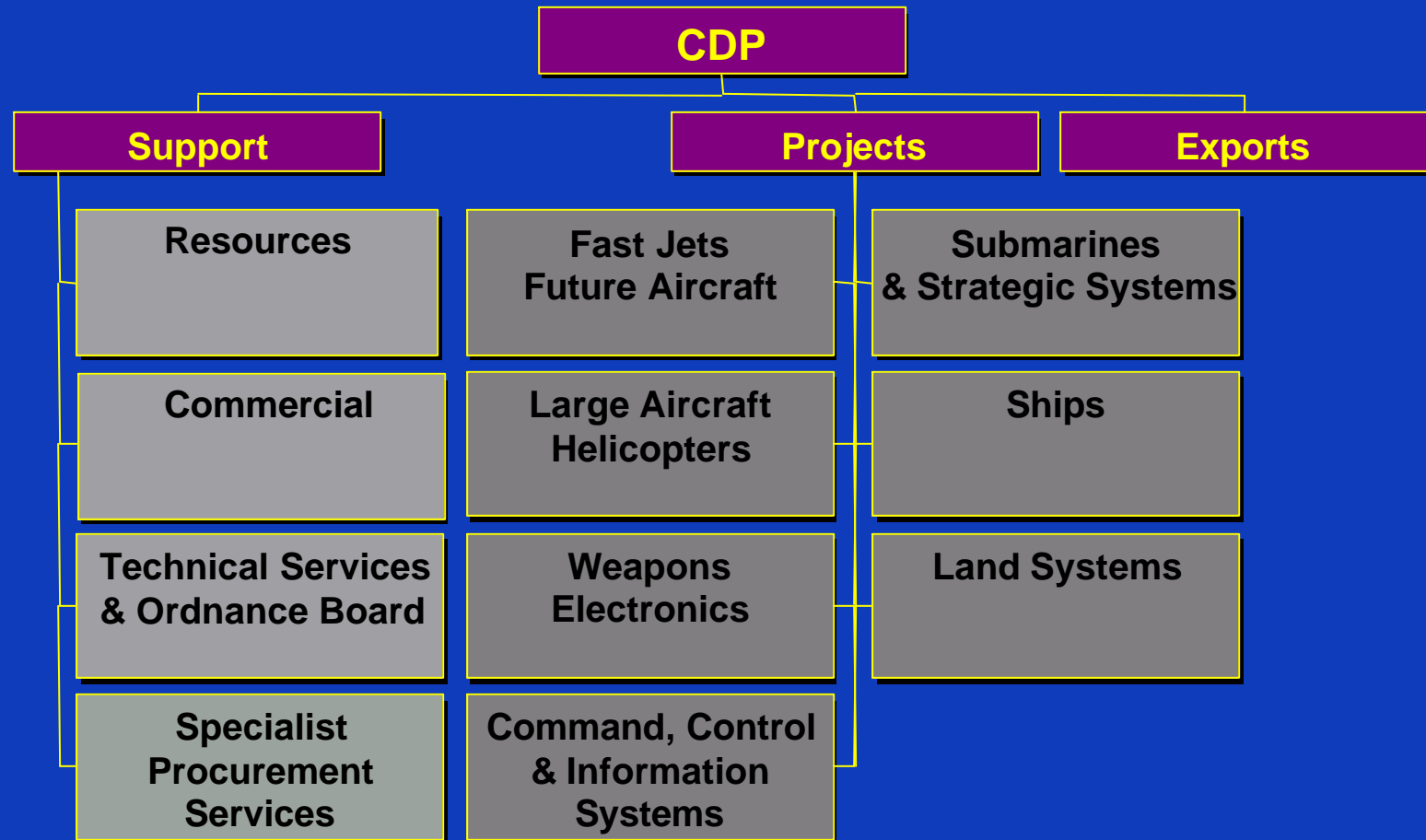




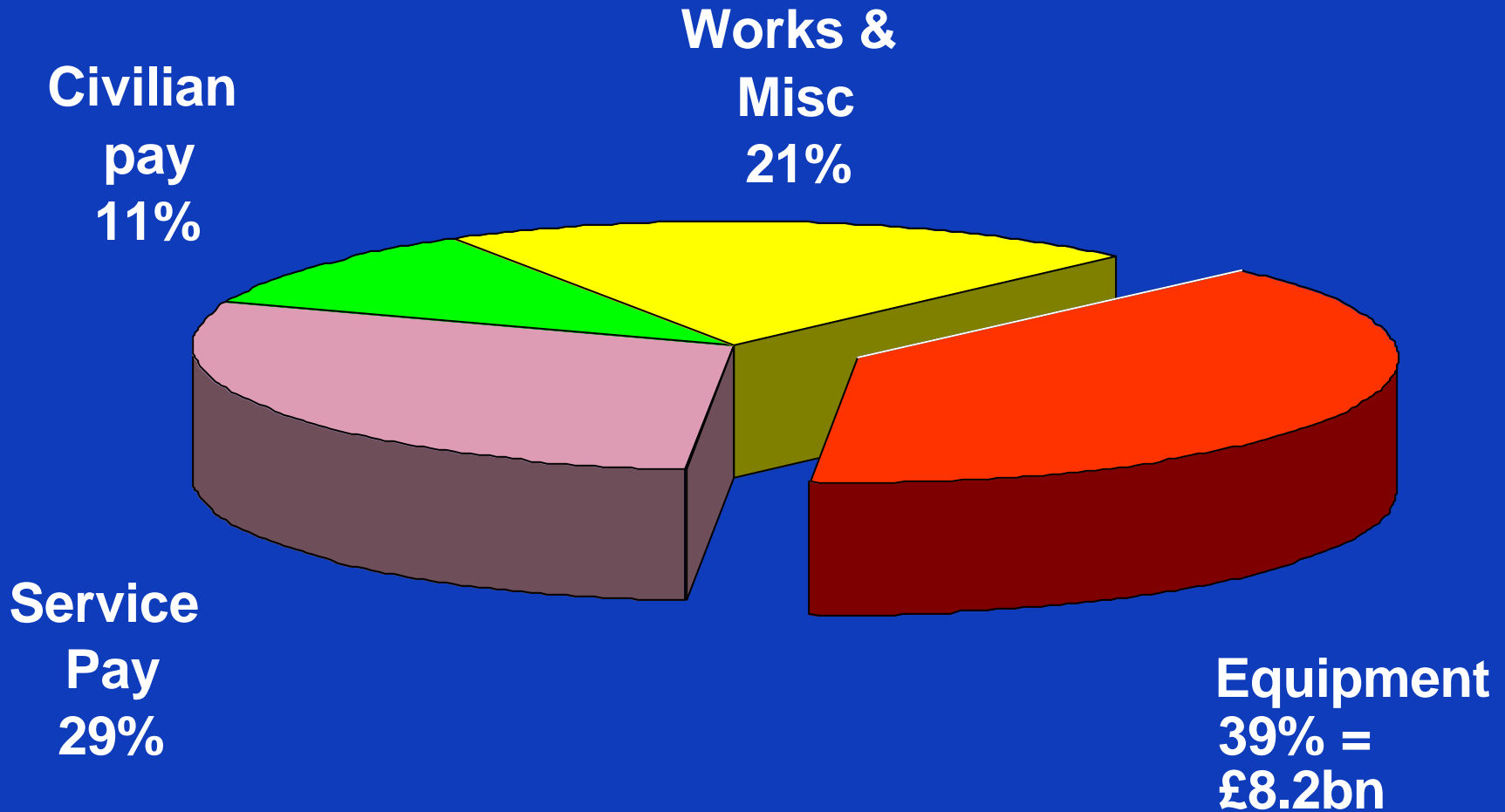
EVM - The UK MOD Perspective

Martin Blackmore
UK MOD Procurement Executive

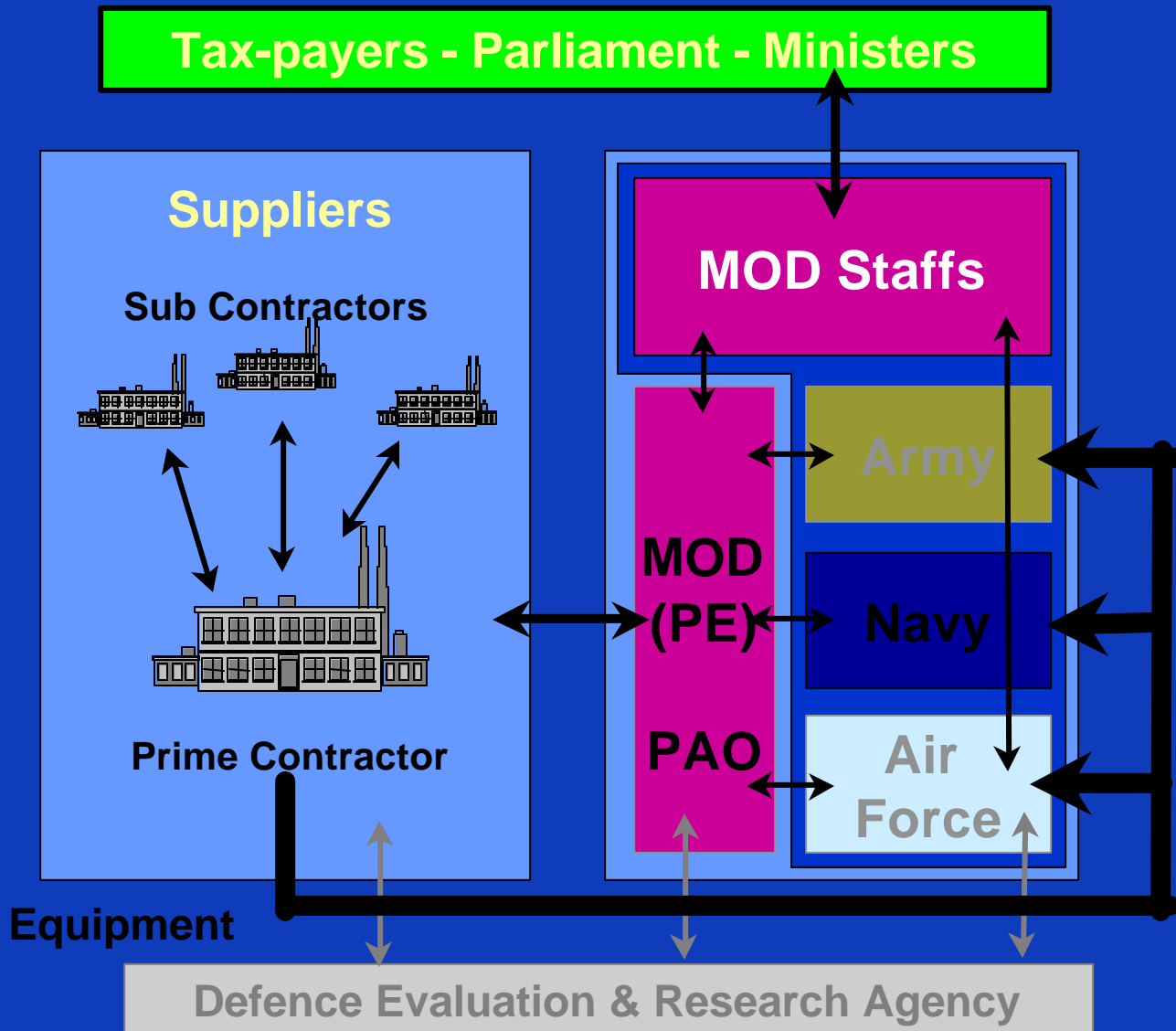
MOD(PE) Organisation



Divisions of the Defence Budget - £21 billion



Stakeholders in Defence Procurement



Defence Procurement Characteristics

- **PE currently employs ~ 5500 staff**
- **Supports ~275,000 jobs in British industry**
- **High value-low volume (25 Projects~£35Bn)**
- **Battlefield winning advantage equals risk**
- **Commercial sector has greater new technology pull**
- **Competitive National Defence Industry**
- **International Collaboration**
- **Public Accountability**

The Evolution of Defence Procurement

INITIATIVES

RESULTS

Pre 1985

- MOD Prime Contractor
- MOD develops systems in-house
- Cost Plus contracts
- Excessive cost and timescale
- Poor reliability
- Disasters happen (Nimrod AEW)

1985 - 1990

- Industry Prime Contractor
- Competition and firm price contracts
- Transfer of risk to Industry
- Dramatic cost reductions for MoD
- Adversarial relationship with industry
- Industry leaner and more efficient

Post 1990

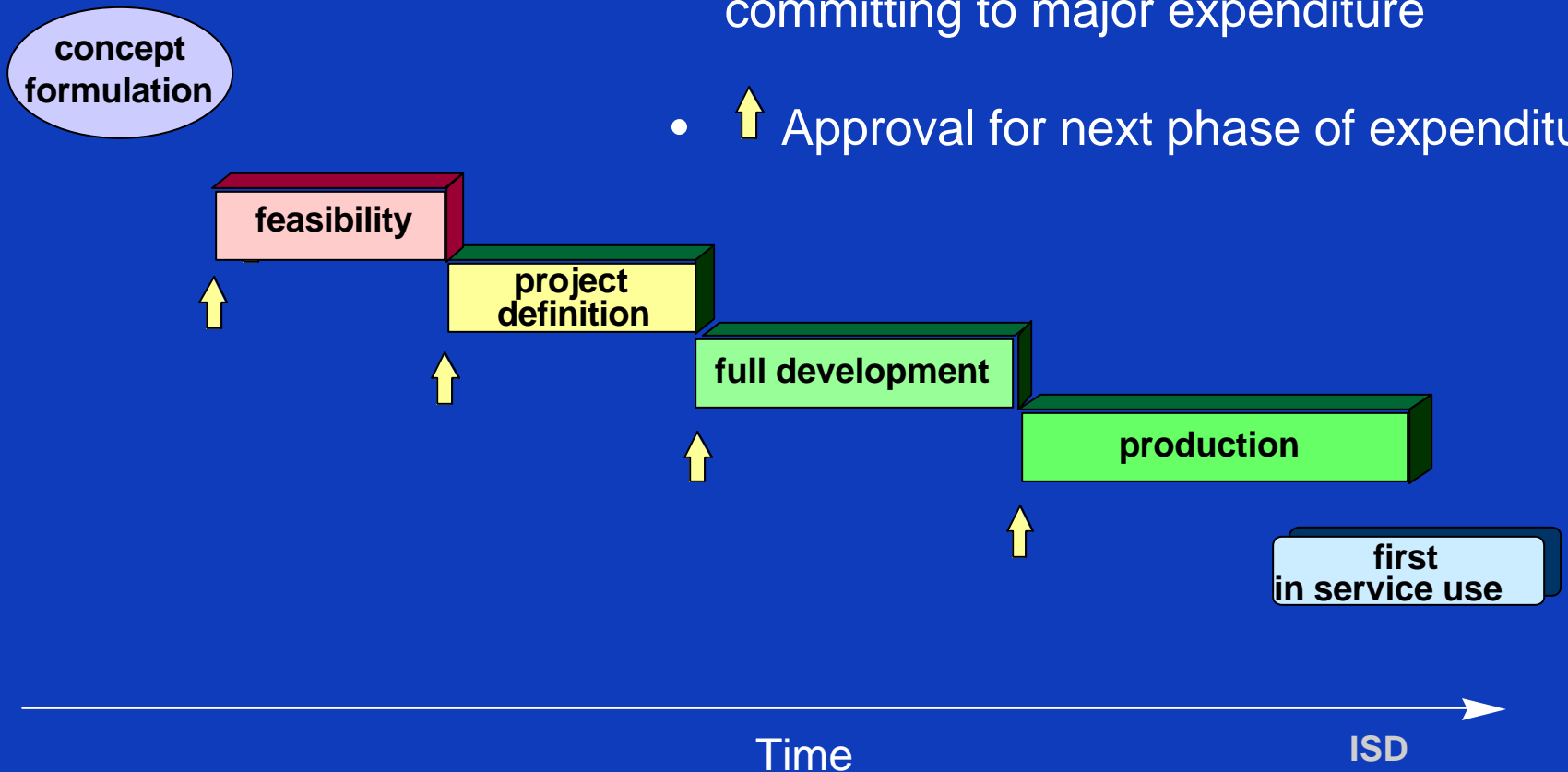
- Focus on risk ownership
- Contracting for reliability, risk & ILS
- Partnering and PFI
- Learning From Experience
- Better cost control
- Commercial relationship with industry
- Timescales still slip
- Internal delays still persist

Post 1998...

- "Smart Procurement Initiative"
- Faster, Cheaper, Better

The “Classic” Procurement Cycle

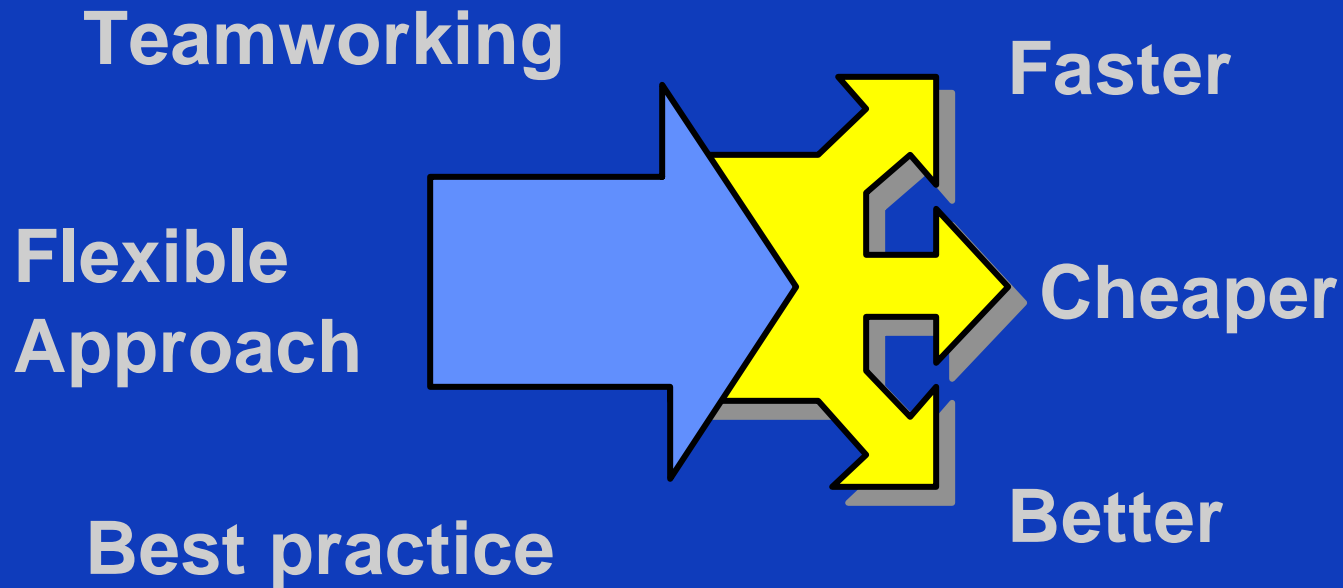
- Downey Principle is to reduce risk before committing to major expenditure
- ↑ Approval for next phase of expenditure



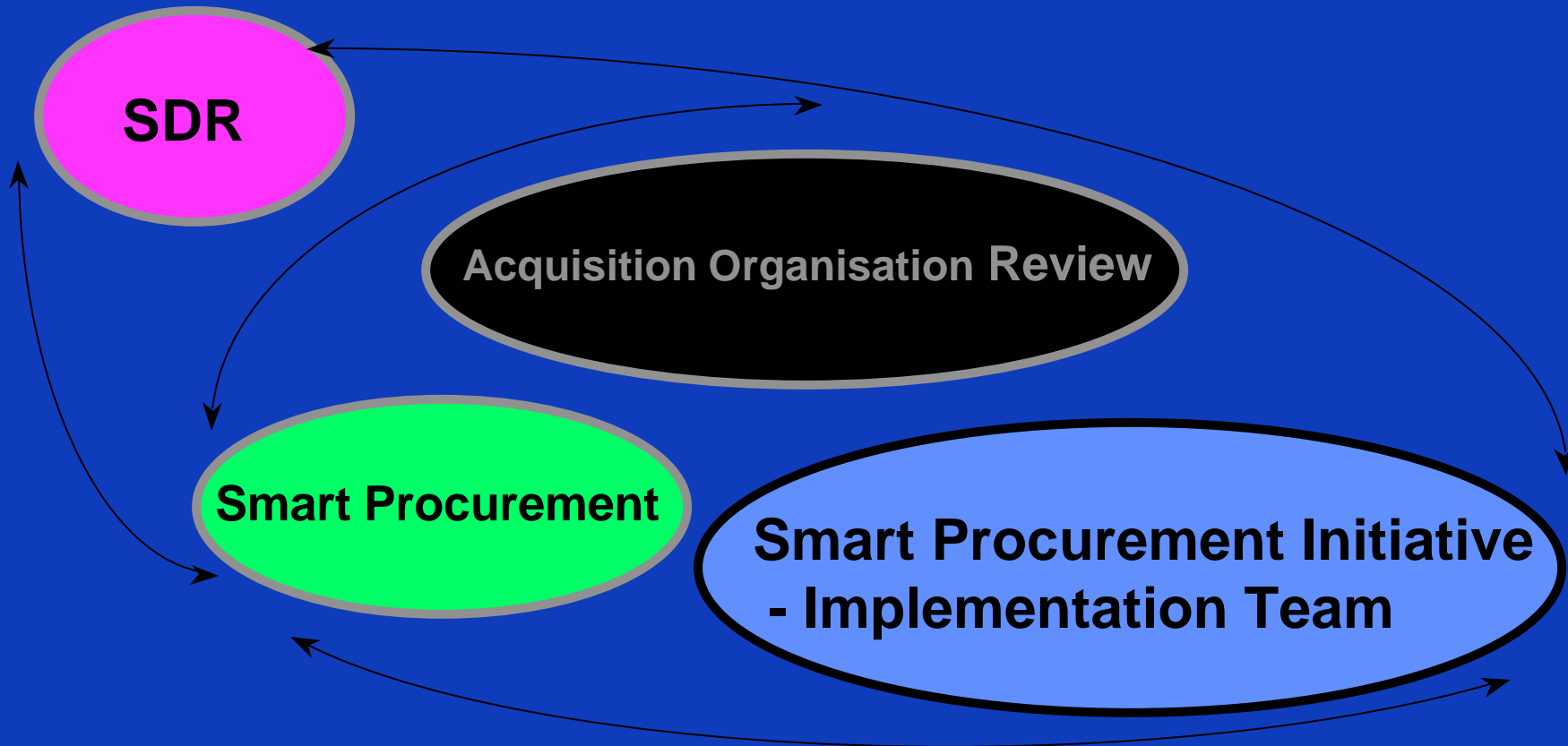
Drivers for Change

- **Need to eliminate cost overrun and slippage**
- **Defence resources decreased in recent years**
- **Military tasks are less predictable**
- **Technology evolving quickly**
- **Changing Industrial scene**

Smart Procurement: What is it?



Smart Procurement Initiative & The Acquisition Organisation Review



- SP Assumes existing organisations and reviews processes
- AOR Matches organisational structures to procurement processes
- SPI- IT (radical revision of pan-MOD acquisition process & culture)

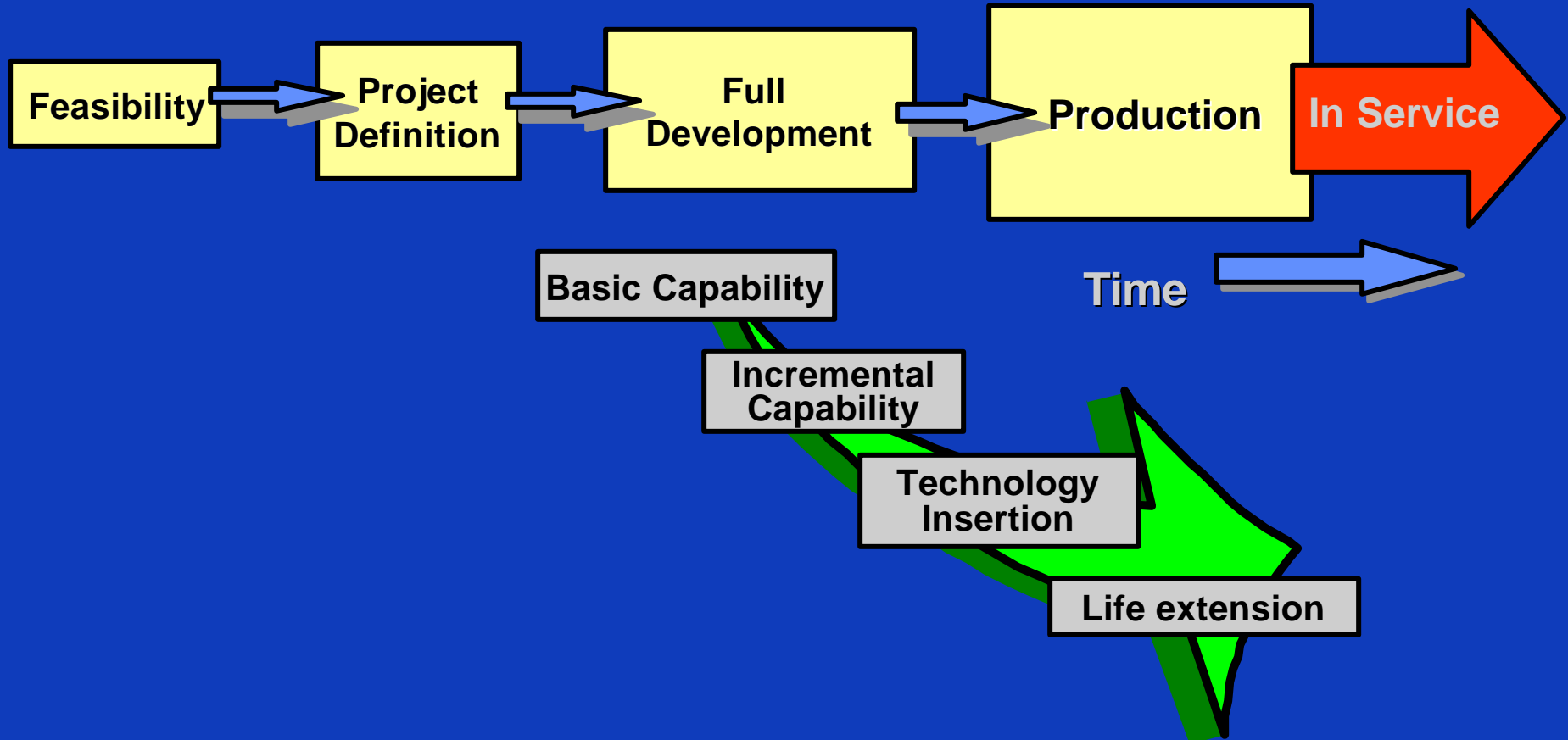
Acquisition Organisation Review

Key concepts

3 key concepts emerged:

- Segment acquisition processes into 3 tiers with processes tailored to each
- A single integrated project team bringing together all stakeholders and involving industry except during competition phases
- The need to identify more precisely the customer for the equipment within the Ministry of Defence

Incremental Acquisition



Smart Procurement and EVM - A Culture Change

- ☐ The Smart Procurement Initiative (SPI) will radically change the way the MoD does business.
- ☐ EVM is consistent with the thrust of the SPI and will complement it.
- ☐ MoD recognises that EVM provides not only an effective management discipline at the working level but also a powerful means of communication throughout the project.
- ☐ The Combination of planning, integrated cost, schedule and technical performance measurement will yield a greater visibility of actual performance against programme than is currently available.

MOD(PE) Policy on EVM

- ☐ Although EVM will not be mandated, the inclusion of EVM in bids will be recognised as a step forward towards improved Risk Management.
- ☐ Acknowledges EVM as “Best Practice” and fully supports its adoption in Defence Procurement.
- ☐ MoD(PE) staff to be educated about EVM.
- ☐ EVM to be considered for internal MoD(PE) applications.

EVM and MOD(PE)

- ☐ MOD(PE) associated with the IPMC since 1995.
- ☐ 6th May '98 - CDP announced 'strong support' for **encouraging** UK Industry to adopt EVM for defence procurement.
- ☐ 20th May '98 - International EVM Conference in London supported by MOD(PE).
- ☐ 21st May '98 - Briefing by IPMC to MOD(PE) Senior Staff.
- ☐ Earned Value User's Group - RR, BAe, Vickers, Vospers, WHL, AWE etc developing Industry Guidelines.
- ☐ Sept. '98 - TL/SPI requested to integrate EVM into the SPI.

EVM - The Way Ahead

- ☐ Monitor the use of EVM on current contracts.
- ☐ Select Pilot Projects as for the Smart Procurement Initiative.
- ☐ Increase awareness of EVM within MOD and Industry.
- ☐ Develop Policy.
- ☐ Training.

“BENCHMARK BAe”

A DIFFERENT ROUTE TO EVM

ROGER ANDREWS



BRITISH AEROSPACE

- **ORDER BOOK** £24bn
- **SALES** £4.2bn
- **CUSTOMERS** in 70 Countries
- **PEOPLE** 43000 + 5000JVs
- **PARTNERSHIPS** 70% - 90% of core business
80% bought in from Suppliers
- **PRODUCTS** High value / Political profile
Latest Technology / Risk
Multi-national
Long Life spans



PRINCIPAL AIRCRAFT PRODUCTS



Harrier



Eurofighter



Hawk



Gripen



Tornado



Nimrod MRA4

BRITISH AEROSPACE

Military Aircraft & Aerostructures



INTERNATIONAL COLLABORATION



Germany

France

Italy

Finland

USA

India

Spain

Saudi Arabia

Oman

Switzerland

Sweden

Malaysia

Indonesia

Republic of Korea

Canada

Australia

● **EF2000 - Tornado**

● **Jaguar - FOAS**

● **EF2000 - EAP - Tornado**

● **Hawk**

● **Harrier - T45 Goshawk - JSF**

● **Jaguar**

● **EF2000**

● **Defence Support Services**

● **Defence Support Services**

● **PC9 - Hawk**

● **Gripen**

● **Hawk**

● **Hawk - CN235**

● **Hawk**

● **Hawk**

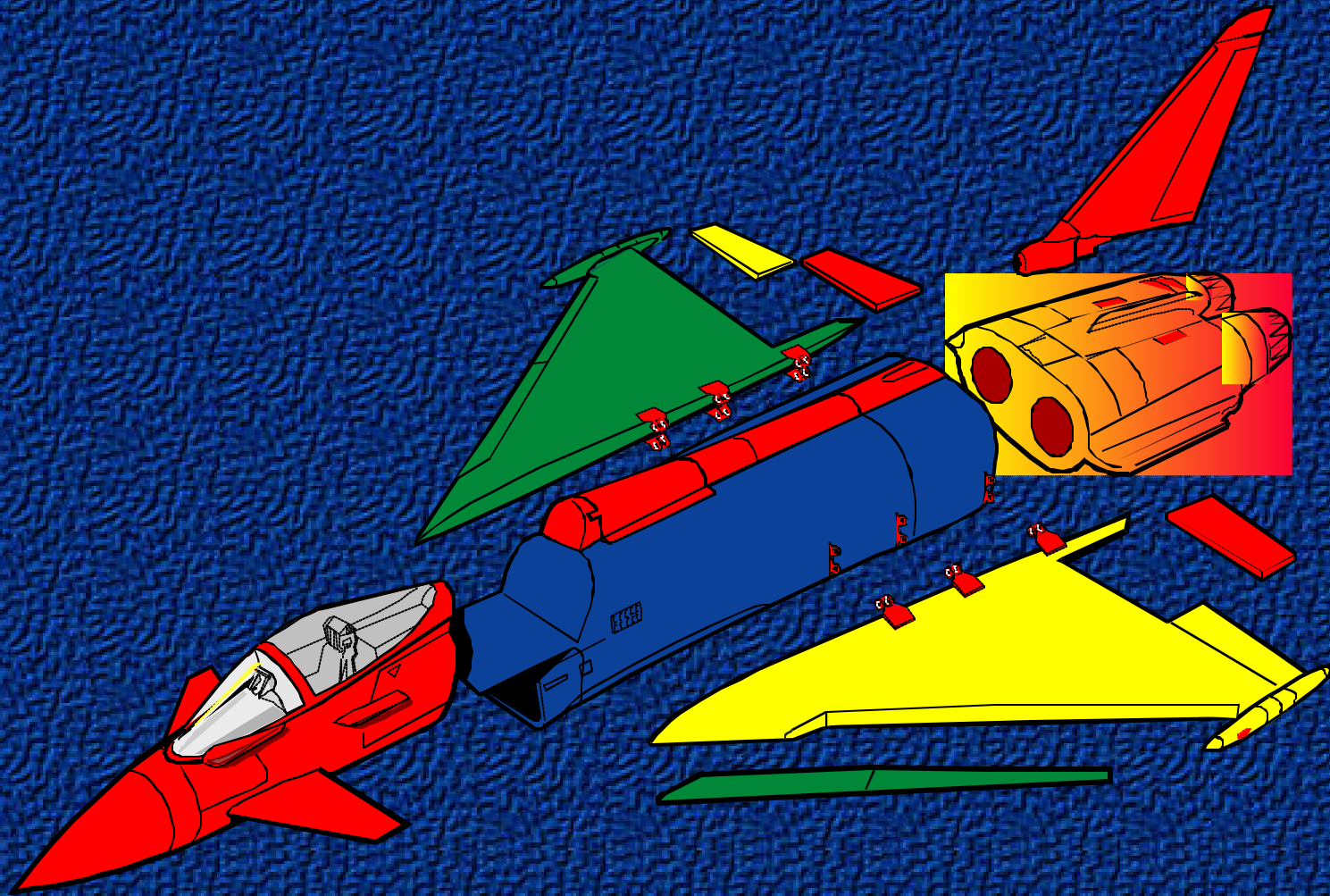
● **Hawk**

BRITISH AEROSPACE

Military Aircraft & Aerostructures



INTERNATIONAL COLLABORATION



BRITISH AEROSPACE

Military Aircraft & Aerostructures



BRITISH AEROSPACE --Vision

TO BE THE **BENCHMARK**
MILITARY AIRCRAFT & AEROSTRUCTURES
COMPANY BY THE 21st CENTURY

AS MEASURED BY

Our Competition

EFQM / Baldrige

Our Customers

100% Quality and Schedule Adherence

50% Reduction in Timescales

30% Cost Reduction

BRITISH AEROSPACE

Military Aircraft & Aerostructures



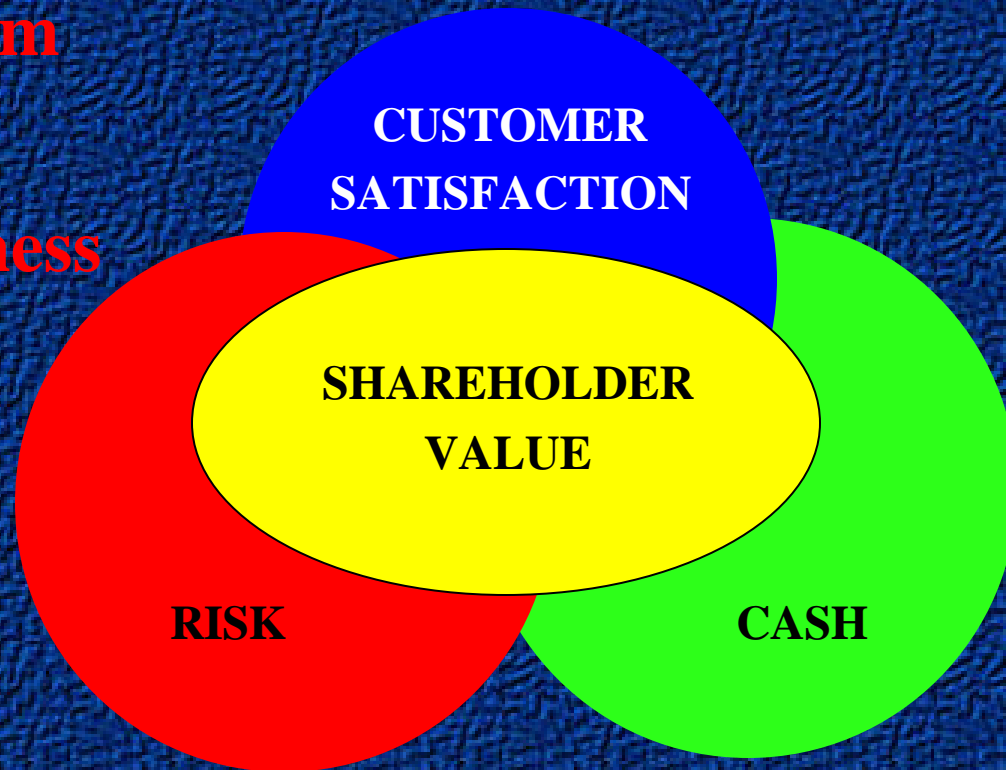
THE ENABLERS

- **Our Values --Customers,People,Partnerships, Innovation & Technology and Performance**
- **Organisational structure based on IPTs focused on delivering the business**
- **Skills development programs to prepare everyone for operating in new team cultures with real authority to deliver**
- **Continuous improvement programs built on best practice and world class processes**
- **Integrated toolsets with appropriate use of information systems**



RESPONSIBILITY, AUTHORITY & ACCOUNTABILITY

**Project Team
managing a
“mini-business”**



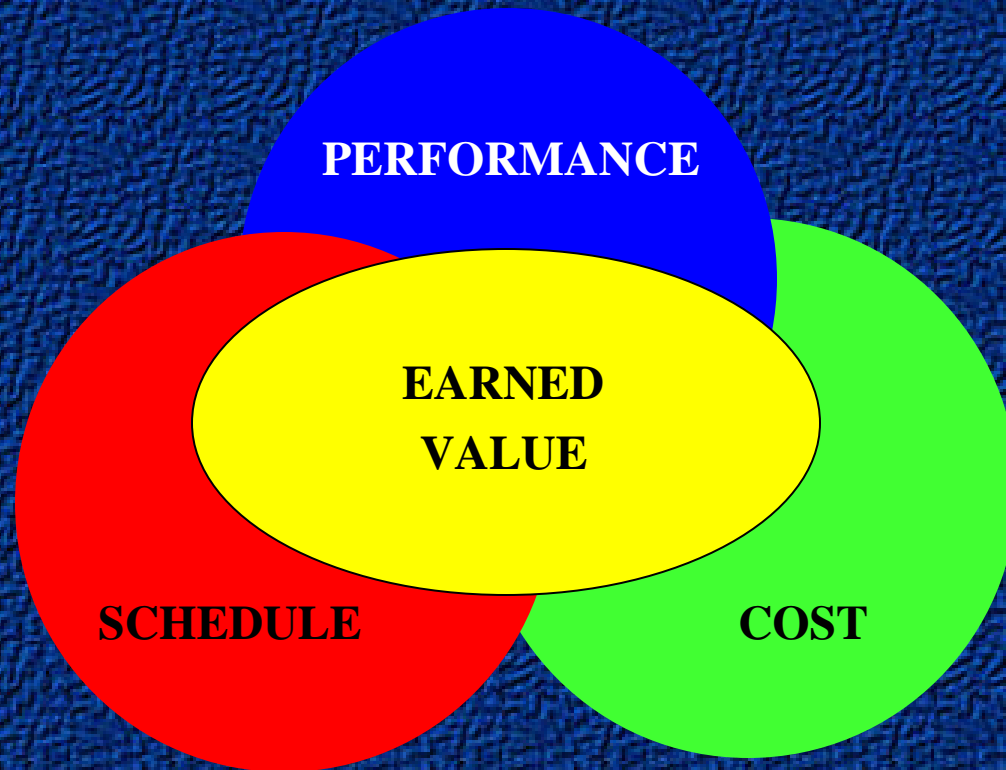
BRITISH AEROSPACE

Military Aircraft & Aerostructures



RESPONSIBILITY, AUTHORITY & ACCOUNTABILITY

**Control
Account
Manager**

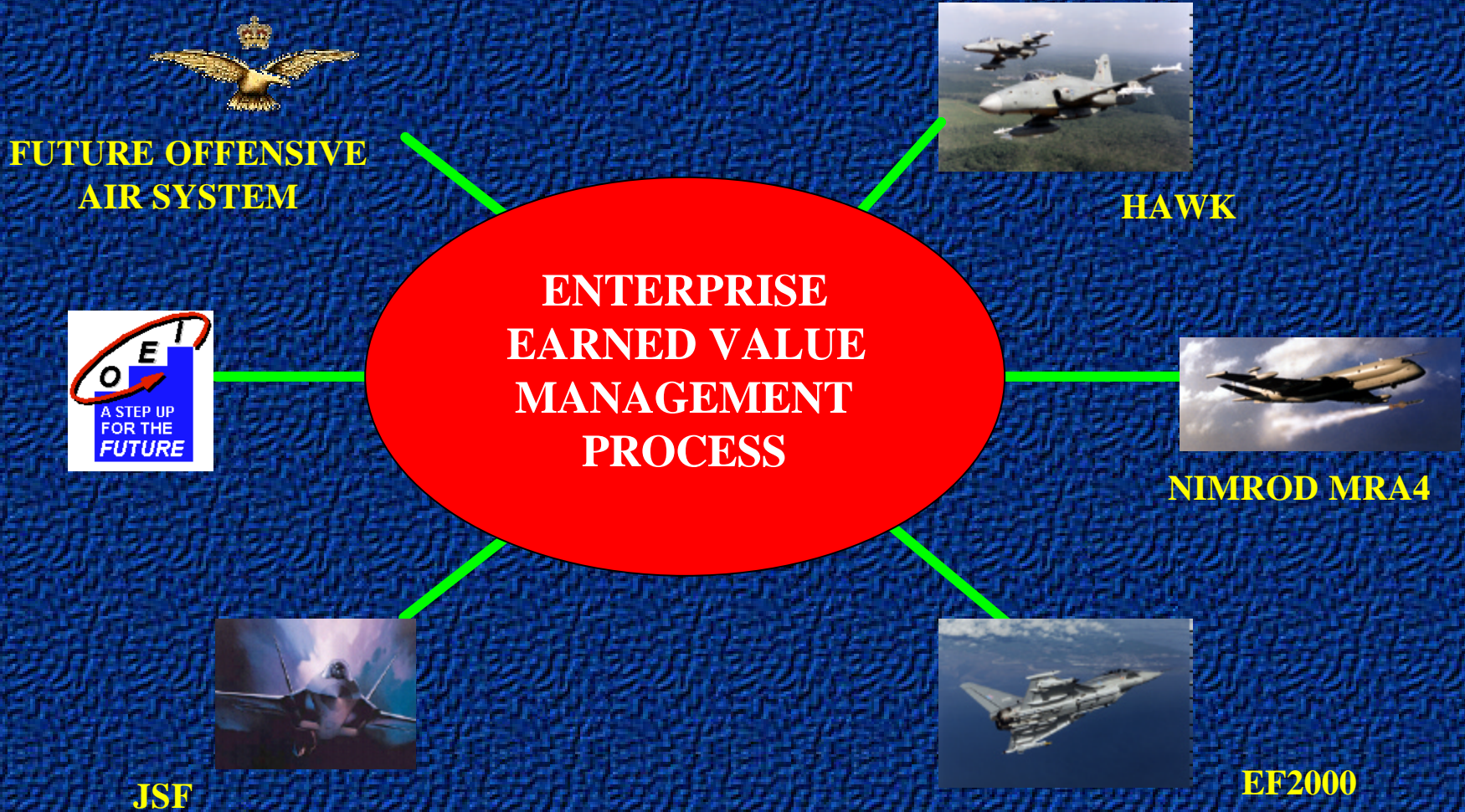


BRITISH AEROSPACE

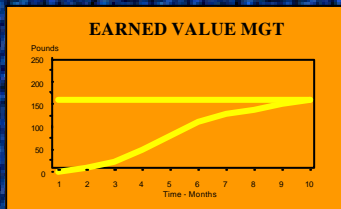
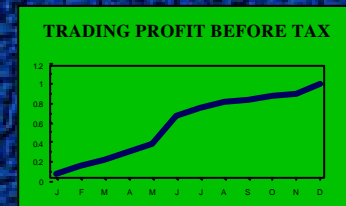
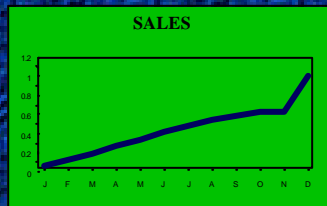
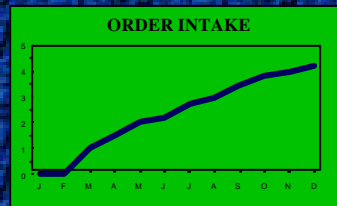
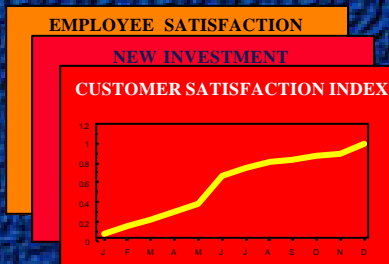
Military Aircraft & Aerostructures



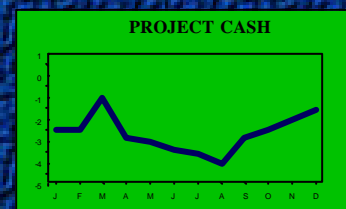
BAe EVM DEPLOYMENT



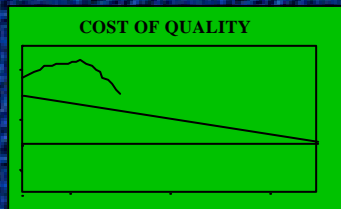
EVM LINKED TO BUSINESS PERFORMANCE “MAA SCORECARD”



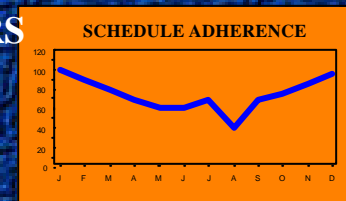
• SINGLE SUITE OF MEASURES THROUGHOUT ALL PROJECTS



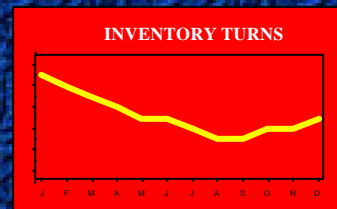
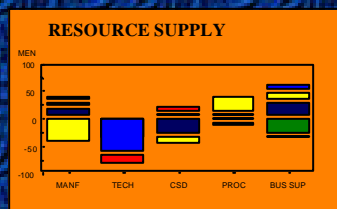
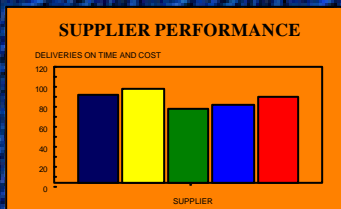
• LINKED TO BUSINESS RESULTS



• IDENTIFIES KEY BUSINESS ENABLERS



• DRIVES THE RIGHT BEHAVIOURS



(PLAN / ACTUAL / FORECAST / EAC)



EVM LINKED TO BUSINESS PERFORMANCE “MAA SCORECARD”

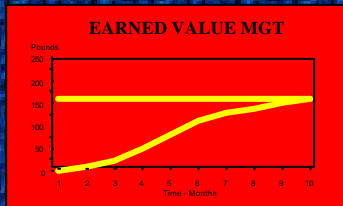
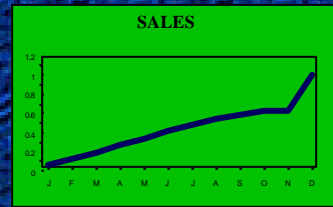
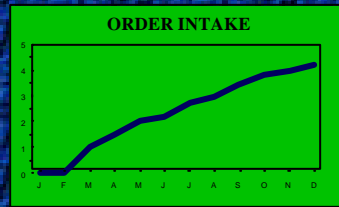


- SINGLE SUITE OF MEASURES THROUGHOUT ALL PROJECTS
- LINKED TO BUSINESS RESULTS
- IDENTIFIES KEY BUSINESS ENABLERS
- DRIVES THE RIGHT BEHAVIOURS

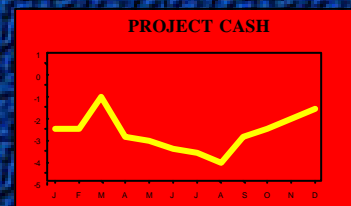
(PLAN / ACTUAL / FORECAST / EAC)



EVM LINKED TO BUSINESS PERFORMANCE “MAA SCORECARD”



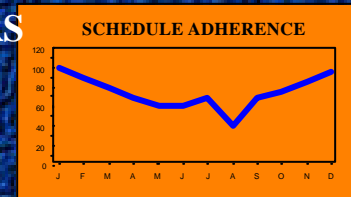
• SINGLE SUITE OF MEASURES THROUGHOUT ALL PROJECTS



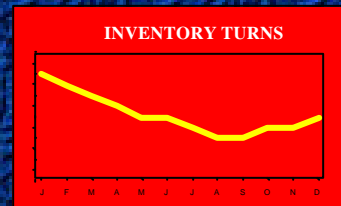
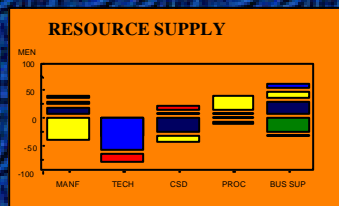
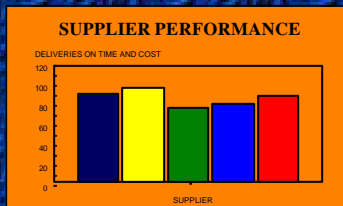
• LINKED TO BUSINESS RESULTS



• IDENTIFIES KEY BUSINESS ENABLERS



• DRIVES THE RIGHT BEHAVIOURS



(PLAN / ACTUAL / FORECAST / EAC)



EVM - The Global Challenge

■ PARTNERSHIPS - The extended Team

- ALENIA
- Boeing
- CASA
- DASA
- Dassault
- Lockheed
- Suppliers

Business Processes and Systems need to be flexible but yet robust to interface with all the team members



LEARNING FROM OTHERS

FROM

- Finance Report
- Government Ownership
- Government Oversight
- Compliance / Audit

TO

- Management Tool
- Company Ownership
- Team Ownership
- Government Insight
- Team Insight
- Team Ethos



SUMMARY

EVM is being integrated into our management process - it is not just a customer reporting mechanism

EVM is a methodology to help manage our daily job - it needs to be seen to add value by enabling better decision at all levels.

The challenge is to work with our Customers, Partners and Suppliers to embed it into all levels of the value chain

EVM is being integrated within the Enterprise performance measures as well as at the individual project level to maintain focus and commitment, it is not just something the customer wants



Hawk Lead In Fighter Program

The CSCS Experience

Martin Nicholson



BRITISH AEROSPACE

Military Aircraft & Aerostructures



Presentation Content

1. **Contract Overview**
2. **CSCS Challenges**
3. **Implementation**
4. **Benefits and Lessons Learnt**



BRITISH AEROSPACE

Military Aircraft & Aerostructures



Presentation Content

1. Contract Overview
2. CSCS Challenges
3. Implementation
4. Benefits and Lessons Learnt



BRITISH AEROSPACE

Military Aircraft & Aerostructures



Contract Overview



Hawk Lead In Fighter Trainer



BRITISH AEROSPACE

Military Aircraft & Aerostructures



Contract Overview (cont.)

- **Customer: Commonwealth of Australia**
- **Requirement: Air 5367 - Lead In Fighter for the Royal Australian Air Force**
- **Contractor: BAe MA&A and BAeA**
- **CSCS requirement, fixed price contract**
- **Payment by milestone AND EARNED VALUE**



Contract Overview (cont.)

- **33 Lead In Fighter Aircraft including :**
 - 5 with Operational Loads Monitoring
 - 1 Instrumented Aircraft System
- **1 Fatigue Test Article**
- **Training Devices**
- **Tech Pubs, AGE, Spares**
- **In Service Support (first support period, option to renew)**
- **Option for further quantities**



Presentation Content

1. **Contract Overview**
2. **CSCS Challenges**
3. **Implementation**
4. **Benefits and Lessons Learnt**



BRITISH AEROSPACE

Military Aircraft & Aerostructures



Timescale to Implement CSCS

■ **Contract Effective Date**

June 1997



BRITISH AEROSPACE

Military Aircraft & Aerostructures



CSCS Challenges

- **Payment by Earned Value**
- **In Parallel with other new processes, new customer, new organisation, new aircraft standard**
- **Limited CSCS experience**
- **New culture**
- **New Project Control Tool**
- **Distance to customer**
- **PROJECT AND CSCS TIMESCALES**



CSCS Approach

- **Get Help !**
- **Close relationship with Commonwealth RPT**
- **Parallel working**
- **People, people, people**
- **Project Control Tool Investment**
- **Develop process for EV claim validation and payment**



Timescale to Implement CSCS

- **Contract Effective Date** **June 1997**
- **Implementation Visit** **Aug 1997**



BRITISH AEROSPACE

Military Aircraft & Aerostructures



Presentation Content

1. Contract Overview
2. CSCS Challenges
3. Implementation
4. Benefits and Lessons Learnt



BRITISH AEROSPACE

Military Aircraft & Aerostructures



System Implementation - Set Up Phase

- Contract SoR
- WBS/Dictionary
- OBS, CAMs
- RAM, Cost Accounts
- Schedules, Budgets
- EVT's
- CAP
- PMB - IBR



Timescale to Implement CSCS

- **Contract Effective Date** **June 1997**
- **Implementation Visit** **Aug 1997**
- **Integrated Baseline Review** **Dec 1997**



BRITISH AEROSPACE

Military Aircraft & Aerostructures



System Implementation - Run Phase

- Monthly update
- Contract Master Schedule analysis
- Cost Performance Reports
- Management Action Log
- Claim validation and payment process
- Change process



BRITISH AEROSPACE

Military Aircraft & Aerostructures



Timescale to Implement CSCS

- **Contract Effective Date** June 1997
- **Implementation Visit** Aug 1997
- **Integrated Baseline Review** Dec 1997
- **Readiness Assessment** June 1998
- **Demonstration Review** Oct 1998
- **Surveillance** Customer + BAe



BRITISH AEROSPACE

Military Aircraft & Aerostructures



Presentation Content

1. Contract Overview
2. CSCS Challenges
3. Implementation
4. Benefits and Lessons Learnt



BRITISH AEROSPACE

Military Aircraft & Aerostructures



Benefits

- **Single source of project data**
- **Controlled baseline**
- **Using the data**
- **Enhanced customer confidence**
- **Project Management skill development**



Lessons Learnt

- **Work closely with the customer**
- **People issues**
- **Level of discipline required**
- **Project Control Tool**
- **Strong Project Controls team required**
- **Significant implementation effort**



THE FUTURE --- INTO THE 21st CENTURY

ROGER ANDREWS
Project Director - Business Management



THE FUTURE --- INTO THE 21st CENTURY

- NATIONAL TEAMS
 - Single Culture
 - English Language
- NATIONAL PROCESSES
- PRODUCT KNOWLEDGE
- PRODUCT MANAGEMENT
- STABLE MANAGEMENT
- RISK IDENTIFICATION
- INTERNAL FOCUS
- STATIC LOCATION
- IT CONVERSANT
- MULTI-NATIONAL TEAMS
 - Multi Culturally Aware
 - Multi Lingual
- MULTI NATIONAL PROCESSES
- BUSINESS KNOWLEDGE / SHAREHOLDER VALUE
- RELATIONSHIP MANAGEMENT
- MANAGEMENT OF CHANGE / CONTINUOUS IMPROVEMENT
- PRO-ACTIVE MANAGEMENT
- EXTERNAL FOCUS
- MOBILITY / VIRTUAL OFFICE
- IT LITERATE



THE FUTURE --- INTO THE 21st CENTURY

- Integrated Plans -- in a fraction of the time and cost
- Integrated Teams -- including Customers, Partners and Suppliers in a virtual environment
- Integrated Management Information
--used by everyone to agree the baseline and jointly manage variances
- Integrated Decisions - more informed and expedient
-- balancing performance, schedule, cost and risk

“INTEGRATED PROJECT MANAGEMENT”

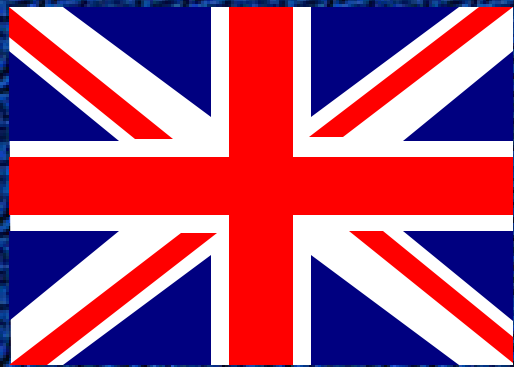
BRITISH AEROSPACE

Military Aircraft & Aerostructures



EVM IN THE UK

Thank You for Your attention
Any Questions ?



Roger Andrews

Martin Blackmore

Martin Nicholson

BRITISH AEROSPACE

Military Aircraft & Aerostructures



BRITISH AEROSPACE

Military Aircraft & Aerostructures

