National Audit Office

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL

HC 684-II
SESSION 2012-13

10 JANUARY 2013

Ministry of Defence

The Major Projects Report 2012 Appendices and Project Summary Sheets

Our vision is to help the nation spend wisely.

We apply the unique perspective of public audit to help Parliament and government drive lasting improvement in public services.

The National Audit Office scrutinises public spending for Parliament and is independent of government. The Comptroller and Auditor General (C&AG), Amyas Morse, is an Officer of the House of Commons and leads the NAO, which employs some 860 staff. The C&AG certifies the accounts of all government departments and many other public sector bodies. He has statutory authority to examine and report to Parliament on whether departments and the bodies they fund have used their resources efficiently, effectively, and with economy. Our studies evaluate the value for money of public spending, nationally and locally. Our recommendations and reports on good practice help government improve public services, and our work led to audited savings of more than £1 billion in 2011.

National Audit Office

Ministry of Defence

The Major Projects Report 2012 Appendices and Project Summary Sheets

Report by the Comptroller and Auditor General

Ordered by the House of Commons
to be printed on 8 January 2013

This report has been prepared under Section 6 of the National Audit Act 1983 for presentation to the House of Commons in accordance with Section 9 of the Act

Amyas Morse
Comptroller and Auditor General
National Audit Office

17 December 2012

This volume has been published alongside a first volume comprising of – Ministry of Defence: The Major Projects Report 2012 HC 684-I

HC 684-II London: The Stationery Office £59.00

Printed in the UK for the Stationery Office Limited on behalf of the Controller of Her Majesty's Stationery Office

2533339 01/13 19585

Contents

Appendix Seven
Support contracts 4

Appendix Eight
Cost performance on assessment phase projects 6

Appendix Nine
Technology readiness levels 7

Appendix Ten
Sentinel 9
Project records 9

Appendix Eleven
Definitions and classifications of cost, time and performance causal factors 11

Appendix Twelve
Project summary sheets 13

The National Audit Office study team consisted of:
Nigel Vinson, Hannah Kingsley-Smith, Martin Wheatley, Ben Bourn, Mari Wallace, Andrea Atkinson, Graham Balkwill, Andrew Clark, Jim Cotton, John Marsh, Israel Ochwo, Tim Reid, Omer Riaz, and Jenny Yu, under the direction of Tim Banfield.

This report can be found on the National Audit Office website at www.nao.org.uk/Major-Projects-2012

For further information about the National Audit Office please contact:

National Audit Office
Press Office
157–197 Buckingham Palace Road
Victoria
London
SW1W 9SP

Tel: 020 7798 7400

Enquiries: www.nao.org.uk/contactus

Website: www.nao.org.uk

Twitter: @NAOorguk

Appendix Seven

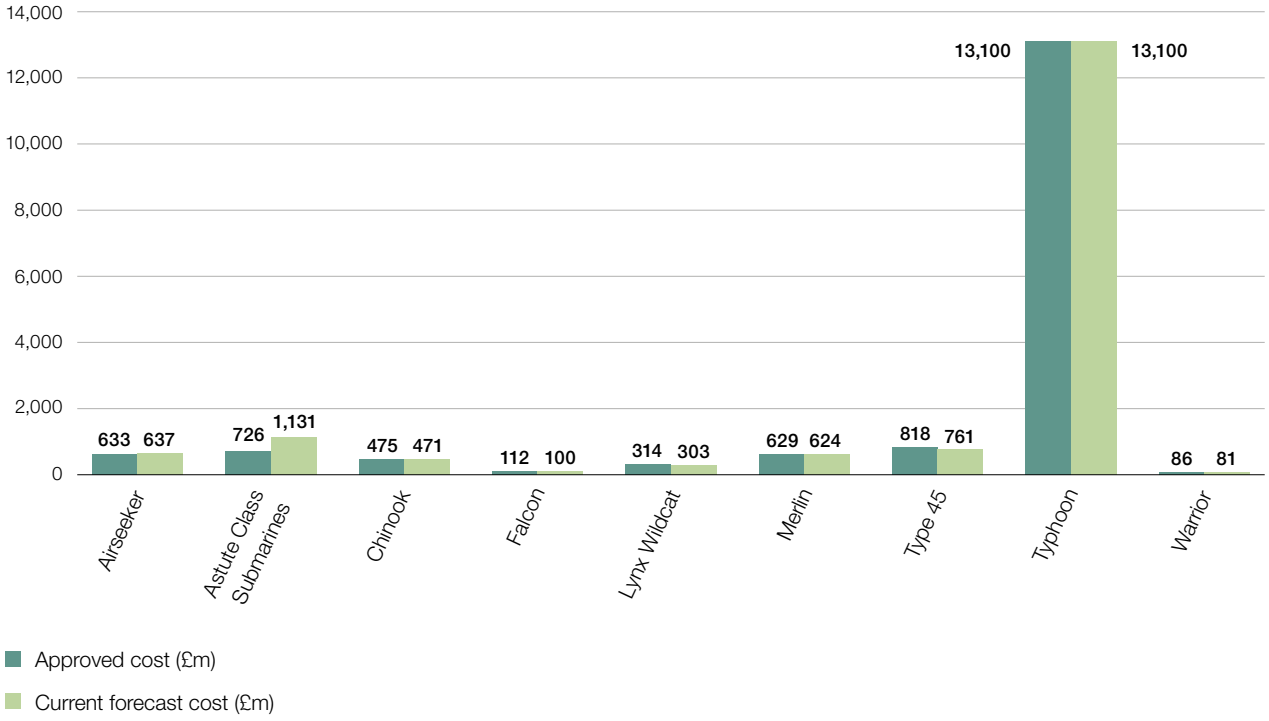
Support contracts

Where projects have approved support contracts we report on the forecast spend against these in the Project Summary Sheets. The nature of a support contract depends on the type of project and the approach to support that the project team have taken.

For projects where there is already an in-service platform, such as Merlin, Chinook and Warrior, projects report on the support to the in-service fleet, which is often contracted for in five-year pricing periods.

Other projects such as Astute and Typhoon have approvals for the whole life support to the platforms.

Figure 1
Cost variation in support contracts



NOTES

1 Astute support is the total of the Initial Support solution, plus the Astute Class Training Service for Boats 1–4.
2 Chinook support covers the support to the in service aircraft (current 5-year pricing period) and the support approval for the 14 new Chinook.
3 Falcon support is the total for Increments A and C and the Urgent Operational Requirement.
4 Lynx Wildcat support is the cost of the Wildcat integrated Support and Training Contract.
5 Merlin support is a contract to cover the entire in-service fleet. We report on the current 5-year pricing period.
6 Type 45 support is the total of the Initial Spares contract and the 7-year full support contract.
7 The Typhoon support approval covers the entire life of the aircraft.
8 Warrior support is the total of the Battle Group Thermal Imaging Support contract and the Diesel Engines and Transmissions contract.

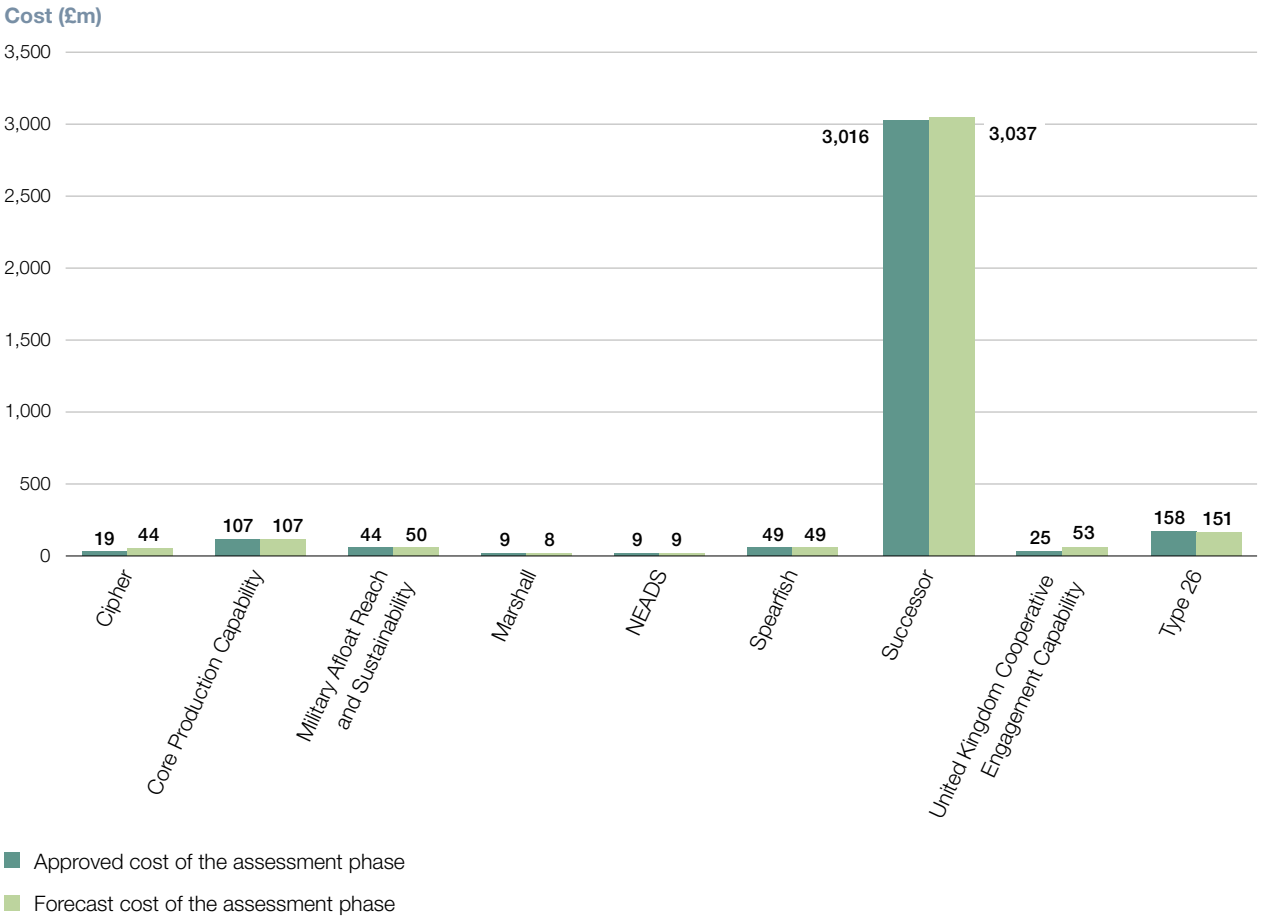
Source: National Audit Office analysis of Departmental data

Appendix Eight

Cost performance on assessment phase projects

Figure 2 shows the approved and forecast cost of each assessment phase, where preliminary work is carried out before the main investment decision.

Figure 2
Cost variation on assessment phase projects



Source: National Audit Office analysis of departmental data

Appendix Nine

Technology readiness levels

This year in the Project Summary Sheets (Volume II) we are reporting on technology readiness levels for Assessment Phase projects (projects that are in the planning phase, prior to the main investment decision being taken).

What are technology readiness levels?

Technology readiness levels, or TRLs, are a technology management tool that provide an indication of the technical maturity of a project, by identifying risk associated with technology and system integration. A TRL, measured on a scale from 1 to 9 (with 1 being the least mature) can be given to each technology element of a project. TRLs are designed to be used to assess the risks of not delivering a project on time due to immature technology. This could be a powerful tool if used routinely as part of project management, especially in the context of the high levels of time slippage we are reporting this year due to technical problems on projects.

Measuring TRLs

When?

TRLs are designed to be used at all stages of the acquisition cycle. The departmental guidance advocates that Project Teams use them at key decision points on projects, for example:

- At the start of the Assessment Phase: To assess whether it is likely that the required technology will be mature by the in-service date. They specify a TRL of 3 for key technologies at this point (defined as analytical and experimental critical function and/or characteristic proof of concept).
- At the point of the main investment decision: They advise a TRL of 7 (defined as technology prototype demonstration in an operational environment). Exposing the technology to the operational environment should reveal any limitations and therefore the risk to not achieving mature technology by the in-service date.

How?

TRLs have generic definitions but should be defined in the context of each project to make them measurable, so it is clear when a TRL has been achieved for a particular piece of technology.

The Department does not have a mechanism for independent verification of TRLs; they are generally assessed by the Project Team.

How the Department use TRLs: Spearfish Upgrade project

The Spearfish Upgrade (SFU) project team applies 'tailored' Technology Readiness Levels (TRL) to progressively manage technical maturity and the associated risks of the weapon system design in accordance with departmental guidance.

The SFU project team monitors the technology risk and manages the development of the system solution regularly using a Weapon Technology Readiness Progression matrix to track achievement against the plan. Progress is formally assessed at quarterly project reviews.

The torpedo system and subsystem elements are broken down in accordance with the Product Breakdown Structure e.g. sonar, warhead, propulsion etc. This systematic TRL hierarchy underpins the design approach to enable hardware and software development and integration risks to be effectively managed to deliver a system solution.

Specific TRL definitions which were defined during the Concept Phase are applied as SMART[1] criteria for assessment of TRL achievements during the Assessment Phase. Technical assurance includes independent evidence-based assessment by experts such as the Defence Science and Technology Laboratory, for all industry claims on the achievement of technical maturity. This approach to TRL progression management provides a foundation for the Assessment Phase acceptance process.

For example, the Insensitive Munitions warhead system achieved TRL level 7 in January 2012 following land-based and in-water scale firings of the warhead system to demonstrate the technology in an operational environment.

1 Specific, Measurable, Achievable, Realistic and Time Bound.

Appendix Ten

Sentinel

In the *Major Projects Report 2010* we reported on how the Department had begun to use a project monitoring system called Sentinel which is designed to assist senior management in quantitatively assessing the overall health of selected projects based on a set of metrics. The Sentinel score is now included within the project summary sheet for each of the post-main-gate projects at section D.1.

On a quarterly basis each project team that is part of the Sentinel reporting system updates 20 metrics covering performance, personnel, reviews and external factors for their project. These are adjusted using a departmentally agreed weighting mechanism for each metric, and then collated into an overall score.

Project records

A project record should provide a high-level audit trail of all key project decisions, including details such as the date and reason for the decision. The Department's own guidance states that it should be a key tool to enable record keeping, accountability, and capturing lessons learnt.[2]

Our validation work included a review of the project record documents for each of the 16 projects that had passed the main investment decision. The assessment focused on the issues of the timeliness and comprehensiveness – whether the project teams had kept the documents up to date and done so on a timely basis, and whether the documents included all relevant key events, in line with the central guidance. Our findings are summarised overleaf in **Figure 3** where:

- **Green rating** shows timely input and inclusion of all key events;
- **Amber rating** indicates that the events were mostly up to date, but put in at a later date, or that some key events were included; and
- **Red rating** indicates that there was no project record maintained.

2 MoD Project record guidance.

We found that nine of the 17 project records reviewed were kept up to date and included all key events. A further six had key events missing or were updated a long time after the events took place. In such cases, there is a concern that after three years (or more) the recollection of key events may not be as accurate or complete. The final two projects scored red – Joint Combat Aircraft has not maintained a project record document, and Complex Weapons only has a project record for one of the suite of weapons it covers, the Future Local Area Air Defence System.

Figure 3
Maintenance of project records

Project	Timeliness of record keeping	Included all key decisions
A400M	●	●
Airseeker	●	●
Astute Class Submarines	●	●
Beyond Visual Range Air-to-Air Missile	●	●
Chinook	●	●
Complex Weapons		
Future Local Area Air Defence System	●	●
Other projects	●	●
Falcon	●	●
Future Strategic Tanker Aircraft	●	●
Joint Combat Aircraft	●	●
Lynx Wildcat	●	●
Merlin Capability Sustainment Programme	●	●
Queen Elizabeth Class	●	●
Specialist Vehicles	●	●
Type 45	●	●
Typhoon	●	●
Warrior	●	●

NOTES

1 Complex Weapons covers a suite of weapons which are being procured from the same contractor. The Project Team only maintain a project record for one of the weapons – the Future Local Area Air Defence System.

2 For Type 45, we could only assess the project record back to April 2010, as the record prior to that was in archive.

Source: National Audit Office analysis of departmental data

Appendix Eleven

Definitions and classifications of cost, time and performance causal factors

These classifications represent a broad categorisation of cost, time and performance variations within the Project Summary Sheet. The Department attributes these categories to time, cost and performance variations within the Project Summary Sheet. We validate the appropriate application of each category. For our analysis in Part One we have grouped these classifications into three broad headings:

- Corporate decisions i.e. decisions which are taken at the top of the Department by senior management or ministers.
- Project/technical issues represent variations caused at a lower project level.
- Macroeconomic/accounting adjustments which are generally outside the control of the Department representing changes in assumptions of exchange rate or inflation.

Corporate decisions

Changed Capability Requirement (formerly Changed Requirement until 2009)	Variations due to changes in the Department's requirement for the equipment, flowing from operational reassessment rather than budgetary factors or as a result of support to current operations.
Budgetary Factors (formerly changed Budget Priorities until 2009)	Variations due to changes in the Department's requirement for equipment, flowing from changed budgetary priorities.

Project/technical issues

Technical Factors	Variations which are due to changes in technical ability to deliver the project.
Procurement Processes (formerly Procurement Strategy until 2009)	Variations due to changes associated with the contractual process, including time taken in contract negotiations and placing contracts, effect of comparing contractor bids to estimates and variations due to changes in overall procurement strategy e.g. change to collaborative options, or from competitive to single source.
Procurement Processes – International Collaboration	As above, but relating to International contract negotiations.
Capability Trading	Variations due to capability re-prioritisation and capability trading between projects and programmes; based on assessments at the project level, rather than corporate level.
Contracting Process (not included from 2009 onwards)	Variations due to changes associated with the contractual process, including time taken in contract negotiations and placing contracts, international contract negotiations and effect of comparing contractor bids to estimates.

Macroeconomic/accounting adjustments

Inflation	Variations due to changes in inflation assumptions.
Exchange Rate	Variations due to changes in exchange rate assumptions.
Accounting Adjustments and Re-definitions	Variations that do not reflect any substantive change, including imported or exported costs arising from changes to accounting rules, adjustments to reflect changes in the definition of terms.

Other/not classified

Receipts	Variations due to changes in expectation of receipts, e.g. liquidated damages, commercial exploitation levy.
Change in Associated Project	Variations due to change in an associated project e.g. availability of equipment from another project for trials.
HM Treasury Reserve (formerly Conflict Prevention until 2010)	Recovery of additional costs incurred in support of current operations.

Appendix Twelve

Project summary sheets

Contents

Post-main-gate projects

Project	Page
A400M	3
Airseeker	19
Astute Class Submarines	35
Beyond Visual Range Air-to-Air Missile	66
Chinook New Buy	81
Complex Weapons Pipeline	99
Falcon	119
Future Strategic Tanker Aircraft	157
Joint Combat Aircraft	170
Lynx Wildcat	194
Merlin Capability Sustainment Programme	217
Queen Elizabeth Class Aircraft Carriers	232
Specialist Vehicles	255
Type 45 Destroyer	268
Typhoon	294
Warrior Capability Sustainment Programme	318

Assessment phase projects

Cipher	330
Core Production Capability	337
Marshall	343
Military Afloat Reach and Sustainability	349
Network Enabled Airspace Defence and Surveillance	356
Spearfish Upgrade	364
Successor	370
Type 26 Global Combat Ship	379
United Kingdom Co-operative Engagement Capability Frigates and Destroyers Programme	387

POST-MAIN-GATE PROJECTS

Project Title		
A400M		
Team Responsible		
A400M		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Brigadier John Brittain		
Project/Increment Name	**Current Status of Projects /**	
A400M	Post-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

A400M is planned to provide tactical and strategic mobility to all three Services. The required capabilities include: operations from airfields and semi-prepared rough landing areas in extreme climates and all weather conditions by day and night; carrying a variety of equipment including vehicles and troops over extended ranges; air dropping paratroops and equipment; and being unloaded with the minimum of ground handling equipment. The 1998 Strategic Defence Review confirmed a requirement for an airlift capability to move large single items such as attack helicopters and some Royal Engineers' equipment and concluded that this would be met, in the latter part of the first decade of the 21st century by Future Transport Aircraft. The A400M was selected to meet this requirement. It will replace the remaining Hercules C-130K fleet.

A400M is a collaborative programme involving seven European nations (Belgium, France, Germany, Luxemburg, Spain, Turkey and United Kingdom). The design phase is nearing completion and manufacture activities have commenced. Delivery of the first UK aircraft to the Royal Air Force is expected in 2014.

A.2 The Assessment Phase

The Government announced in December 1994 that it would replace its aging C-130K Hercules fleet, in part by procuring 25 C-130J's from Lockheed Martin and in addition, subject to certain conditions, by re-joining the next phase of the collaborative Future Large Aircraft programme (now known as A400M). The Future Large Aircraft 'Initial Gate' approval was achieved in July 1997 and in the same year the solution assumed for costing purposes was changed to an initial lease of four C-17 and subsequent procurement of 25 Future Large Aircraft. A Request For Proposals was issued to Airbus in September 1997 on behalf of the seven Future Large Aircraft nations (Belgium, France Germany, Italy, Spain, Turkey and UK). Subsequently, in July 1998, four nations (Belgium, France, Spain and UK) issued a "competitive Request For Proposals" for a Future Transport Aircraft to Airbus Military (A400M), Boeing (C-17) and Lockheed Martin (C-130J).

Proposals were received on 29 January 1999 and parallel national and international assessments were undertaken. These covered Combined Operational Effectiveness and Investment Appraisal, technical and commercial compliance, risk assessment, and an appraisal of the international dimensions. This work also led to parallel negotiations and clarification with the three bidders. At the direction of the Equipment Approvals Committee in December 1999, additional work was undertaken to inform the Main Gate submission. On 16 May 2000 the Government announced the decision to procure 25 A400M aircraft to meet the Future Transport Aircraft requirement.

A.3 Project History

On 18 May 2000 the Investment Approvals Board approved the acquisition of 25 A400M aircraft with an In Service Date of December 2009. Following the submission of a Review Note, on 8 May 2003 the Investment Approvals Board revised the In Service Date to December 2011 and defined it as being the delivery of the seventh UK A400M aircraft. This change was necessary due to delays in the German Parliamentary approvals process which had prevented signature of the multinational contract; approval was finally granted on 21 May and, on 27 May 2003, the A400M Development and Production Phase contract (including the UK order for 25 aircraft) was signed by OCCAR on behalf of the six partner nations.

On 27 May 2006 the Investment Approvals Board granted Initial Gate approval and the A400M In Service Support Assessment Phase commenced.

On 26 June 2008 the first complete A400M aircraft was rolled out from the Airbus Military Final Assembly Line facility in Seville.

On 25 September 2008 Airbus announced a delay to the first flight of the A400M prototype aircraft and, on 25 November, announced that it could further slip until the "second half" of 2009. On 27 November, Airbus Military briefed the A400M Programme Board (the senior multinational governance body) on its progress with reassessing the aircraft delivery schedule.

On 17 December 2008 the first flight of the A400M Flying Test Bed (an adapted C-130 aircraft) to undertake testing of the specially designed TP-400 turbo prop engine developed for A400M took place in Cambridge.

On 19 December 2008, Airbus Military sent a revised production schedule to OCCAR and, on 9 January 2009, Airbus Military proposed a "new approach" to the A400M programme and sought negotiations with partner nations.

On 12 March 2009 a meeting of A400M partner nation defence ministers (at which the UK was represented by the Secretary of State) agreed to a "standstill agreement" with Airbus Military. This enabled discussions about options and possible outcomes for the A400M programme to take place whilst the rights of all parties under the original contract were protected. A period of intensive negotiation, combined with a thorough review of all aspects of the programme, then followed.

On 11 December 2009 the first flight of MSN001 (the first A400M prototype aircraft) took place in Seville.

On 12 March 2010 the Investment Approvals Board reapproved the UK A400M programme with a revised In Service Date of 2015.

On 29 March 2010 in a Written Ministerial Statement the Secretary of State informed Parliament that agreement had been reached between A400M partner nations and Airbus Military on the future of the programme. Heads of Terms had been agreed that would form the basis for the negotiation of an amended contract (including the decision to amend the UK order from 25 to 22 aircraft). On 31 March 2010 the Heads of Terms were signed on behalf of partner nations by OCCAR with Airbus Military.

On 8 April 2010 the first flight of MSN002 (the second prototype aircraft) took place in Seville, followed on 9 July 2010 by the first flight of MSN003 (the third prototype), also in Seville.

On 19 October 2010 the Strategic Defence and Security Review announcement stated that A400M would be a key element of the RAF future air transport fleet. It also announced the bringing forward of the Hercules C-130J Out of Service Date from 2030 to 2022.

On 5 November 2010 the substantive contract amendment (which included revised aircraft production and delivery schedules) was agreed by partner nations' representatives and sent for national staffing and approval prior to signature. The UK had already achieved reapproval in March.

A.4 In-year Progress

Following the signature of the amended Design and Production Phase contract on 7 April 2011, the revised aircraft production and delivery schedules remain on track. Programme and Project Review Meetings (held on a quarterly basis) at which Airbus Military present details of the current programme status and forthcoming activities to partner nations and OCCAR, indicate that steady progress continues to be made.

Investigation work into the causes of engine problems encountered in June 2011 during flight trials have concluded and solutions have been developed. Although this caused some disruption to the flight trials programme, this is not expected to have a significant impact on the aircraft production schedule.

Although the A400M is a military transport aircraft, its design will be predominantly civil certified, with additional military certification as necessary. With the exception of long distance endurance flying, all flight trials associated with the initial Type Certificate clearance were completed by the end of March 2012. The evidence produced by these trials has been evaluated by the European Aviation Safety Agency and a Restricted Type Certificate was granted in late April 2012.

The first flight of MSN006 (the fifth and final prototype aircraft) took place on 20 December 2011. Together the trials fleet had amassed 2944 flying hours and 1002 test flights by 25 March 2012.

A.5 Capability Risks

Not proceeding with this capability would significantly reduce the UK's tactical air transport capability due to having to rely solely on C-130J aircraft to provide support to operations after the C-130K Out of Service Date in 2013. Furthermore, not proceeding would mean that the UK will not have any tactical air transport capability after 2022, (the revised Out of Service Date for the C-130J declared in the Strategic Defence and Security Review) and less than the planned for Strategic lift capability, as it would be dependant solely on the current fleet of seven (which will increase to eight when an additional aircraft is delivered in May 2012) C-17 aircraft.

The achievement of Restricted Type Certificate has significantly derisked the programme, and is a major step towards achieving a deliverable aircraft. Future capability risks include the ongoing development of military functionality, the delivery of an appropriate support solution and the provision of trained crews to match aircraft deliveries. These risks are well understood and work is ongoing to undertake effective mitigation activity.

A.6 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
-	-	

A.7 Procurement Strategy

Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
A400M	Airbus Military Sociedad Limitada	Development, Production and Initial In Service Support.	Fixed Price, subject to Variation of Price (VOP)	Competitive - International

A.8 Support Strategy

Description
An Assessment Phase for the support strategy is currently underway.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
-	-	-	-	-

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
A400M	2	1	-1	0.06%	0.03%
Total (£m)	**2**	**1**	**-1**	**0.06%**	**0.03%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
A400M		2498	2614

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
A400M	2498	3268	+770	+163
Total (£m)	**2498**	**3268**	**+770**	**+163**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.1.1 A400M

Date	Variation (£m)	Category	Reason for Variation
March 2012	-8	Procurement Processes	A reduction due to repricing.
March 2012	-10	Technical Factors	Reduced Defensive Aids hardware device procurement following the drawdown of other aircraft platforms in the 2010 Strategic Defence and Security Review.
March 2012	-5	Technical Factors	Changes to Integtration contingency
March 2012	+1	Technical Factors	Increased cost of OCCAR management Agency
March 2012	+7	Technical Factors	Revised costing for assumed set up costs for the A400M training facility including increased VAT £5M

March 2012	+3	Technical Factors	Increased cost of integrating equipments to the A400M Platform. (-£2.7M) DASS, £2.5M) Mission Planning System, Technical Support (£3.1M)
July 2011	+175	Procurement Processes - International Collaboration	UK contribution to the multinational Export Levy Facility provided to EADS by A400M partner nations.
Historic	***	Changed Capability Requirements	A Planning Round 2011 Option to swap an early delivery aircraft with one due to be delivered later to ensure that the whole fleet has the same specification.
Historic	***	Procurement Processes - International Collaboration	A Planning Round 2011 Option to reprofile payments to align them with the revised delivery schedule agreed in the six nation international collaborative contract (***) and associated risk (***).
Historic	***	Procurement Processes - International Collaboration	A change due to a realignment of payments with the revised programme schedule agreed in the six nation international
Historic	***	Exchange Rate	Foreign Exchange increases due to changes in planning assumptions.
Historic	***	Inflation	An increase due to changes in inflation assumptions in the 2011 Planning Round.
Historic	***	Procurement Processes	Increase in estimated cost of Supplier Network Installations for the spares ordering system.
Historic	***	Technical Factors	A reprofiling of initial support spares to align with the revised aircraft delivery programme.
Historic	***	Accounting Adjustments and Re-definitions	Removal of Indirect RDEL (Foreign Exchange) in accordance with a change in Departmental policy.

Historic	***	Accounting Adjustments and Re-definitions	Removal of Cost of Capital due to Clear line of Sight policy implemented by HM Treasury.
Historic	***	Exchange Rate	An In Year gain due to the increase in the value of £ vs € due to the difference between the set planning exchange rate and actual outturn.
Historic	***	Changed Capability Requirements	A reduction in the need to use the International Training Centre facilities due to programme delays.
Historic	***	Procurement Processes - International Collaboration	A change due to programme rebalancing as a result of work undertaken in support of concluding an amended contract.
Historic	***	Exchange Rate	Loss due to the difference between the set planning exchange rate and forecast outturn.
Historic	***	Procurement Processes	Revised costing for Mission Planning System due to change from acquisition only to also include support.
Historic	***	Technical Factors	Increase due to the reassessment of the need for capital spares (two long deployment kits)
Historic	***	Exchange Rate	A loss in 2008/2009 due to the fall in value of £ vs €
Historic	***	Changed Capability Requirements	A reduction in the need to use the International Training Centre facilities due to programme delays.
Historic	***	Exchange Rate	An increase on payments for the training service
Historic	***	Accounting Adjustments and Re-definitions	Inclusion of VAT on payments for training service
Historic	***	Technical Factors	Increase due to the reassessment of the need for capital spares.
Historic	***	Changed Capability Requirements	Portable Removable On-Board Inert Gas Generation System fuel tank inerting system.

Historic	***	Inflation	An increase based on latest delivery schedule.
Historic	***	Accounting Adjustments and Re-definitions	Increase due to a revised estimate of the cost of training
Historic	***	Exchange Rate	An increase in 2008/2009
Historic	***	Technical Factors	Inclusion of additional airworthiness support to cover aircraft release to service.
Historic	***	Exchange Rate	Variation in 2008/2009
Historic	***	Inflation	An increase in 2008/2009.
Historic	***	Changed Capability Requirements	Reintroduction of one training simulator.
Historic	-94	Budgetary Factors	Departmental Reviews have identified savings to programme risks (-£23m). Changed delivery profile from that in the Business Case (-£61m). Minor realism adjustments, includes UK share of Organisation Conjointe de Coopération en matière d'ARmement (OCCAR) Programme Division costs (+£5m), QinetiQ Support costs increased (+£1m), unidentified variance (+£1m). Equipment Programme Measure deleting 1 Simulator (-£20m). Minor realism changes includes Certification, Special To Type equipment and Training Facilities (+£7m). Realism reprofile of Development Production Phase contract together with Directed Infra-Red Counter Measures and Cargo Hold Mock-up costs (-£4m)

Historic	-355	Changed Capability Requirements	Defer UK A400M National Training Facility by 2 years (-£2m). Fuel Tank Inertion System Pipe work (+£6m). Deletion of Centralised Crypto Management Unit requirement (-£12m). Deletion of Civil Pallets Configuration Item (-£5m). Addition of Propeller Brake (+£6m). Option to re-profile Training Facilities for realism(-£1m). Programme measure to move deferred configuration Items back into aircraft delivery profile (-£2m). Reduction in number of aircraft to be equipped with Defensive Aids Sub-System from 25 to 9 (-£238m). Programme option to delete and defer Configuration Items and to slip In Service Date by 12 months. (-£81m). Option bringing the Defensive Aids Sub-System forward onto aircraft 1-9 (+£9m). Delay of programme by 9 months (-£12m) Deletion of one training simulator (-£23m)
Historic	+353	Procurement Processes	Realism to reflect 3 month delay in 2000/01 to contract effectivity (+£52m). Slip of aircraft payments and associated equipment to reflect above contract let decision (+£15m). Improved costing data for Configuration Items available (+£160m). Contract Effectivity Date slipped from November 2001 - October 2002 (+£149m). Contract Effectivity Date slipped from October 2002 - April 2003 (-£59m). Adjustments in line with increased knowledge of Programme (+£66m). Contract Effectivity Date slipped from April 2003 - May 2003, includes redefinition of Asset Deliveries to align with aircraft delivery schedule (-£30m).

Historic	-10	Exchange Rate	A decrease in 2005/2006 (-£24m). Variation in 2004/2005 (+£39m). Variation in exchange rate assumptions used in the Business Case, 2000/2001, 2001/2002 and 2002/2003 (-£232m). Variation in 2003/04 (+£222m). Exchange rate changes (-£15m)
Historic	+12	Inflation	An increase in 2005/2006 (+£14m). An increase in 2004/2005 (+£8m). Changes between inflation rate assumed in the Business Case and yearly inflation indices resulting in a decrease 2000/2001 (-£6m), an increase 2001/2002 (+£6m), a decrease 2002/2003 (-£10m).
Historic	+65	Procurement Processes	Total number of aircraft ordered by participating nations higher than anticipated, and consequent reduction in Unit Production Cost (-£65m). Subsequent contract renegotiation due to German reduction in off take (+£130m).
Historic	+34	Technical Factors	Increase in Training costs, figures from industry indicated a shortfall in costing line (+£32m). Realism decrease to Support activities post aircraft delivery (-£3m). Programme realism with regard to costing Technical Publications (-£5m), Special To Type Equipment (-£5m), Aircraft Ground Equipment (-£4m), Government Furnished Equipment/Facilities (-£7m) and Codification of equipment/spares (-£1m). Training Needs Analysis identified the need for funding increase; Develop & Build Facilities (+£11m), Initial Training (+£7m), Develop & Build Training Devices (+£6m), and Develop & Build Training Facilities (-£3m). Identification of UK only certification requirements (+£6m).

Historic	+50	Technical Factors	Costing realism in line with better programme understanding including adjustment for actual sunk costs (-£6m). Costing re-adjusted with understanding of future programme – Certification (-£15m), Government Furnished Equipment (+£4m), Support (+£4m). Re-profiling deliveries for realism Build Facilities (-£1m), Initial Provision Spares (-£5m), Deployment Kits (-£1m). Reduction in the requirement for government procured items (-£46m). Improved understanding of programme requirement for Initial Provision Spares (+£83m), Deployment Kits (-£1m), Initial Training (-£13m) and Mission Planning & Restitution System (-£10m) Growth in estimates for training and Government Furnished Facilities (+£57m)
Net Variation (£m)	**+770**		

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

Project/ Increment Title	Category	Explanation
A400M		

B.4 Progress against approved Support / PFI Cost

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	1	0	1
Demonstration and Manufacture Phase	869	14	883
Support Phase / PFI Cost	0	0	0
Total Expenditure	**870**	**14**	**884**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase (months)
A400M	July 1997	May 2000	34

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Approved	Budgeted For	Latest Approved
A400M		February 2009	December 2009

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
A400M	In-Service Date defined as delivery of the seventh aircraft with Military Aircraft Release and Support arrangements.

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
A400M	February 2009	March 2015	+73	0

C.3.3 Timescale variation

C.3.3.1 A400M

Date	Variation (+/- months)	Category	Reason for Variation
Historic	***	Procurement Processes - International Collaboration	A change due to programme rebalancing.
Historic	***	Technical Factors	Updated programme estimate based upon A400M Task Force outputs and Air Support Cluster assessment.
Historic	***	Technical Factors	Updated programme proposal received from Airbus Military, including revised production approach.
Historic	***	Technical Factors	Programme delays affecting engine and aircraft first flight.
Historic	***	Technical Factors	Reflects latest delay and risk assessment beyond first flight.
Historic	+9	Technical Factors	Contractor delay to aircraft delivery.
Historic	+16	Budgetary Factors	Change in the Customer's requirement flowing from changed budgetary priorities.
Historic	+9	Procurement Processes	Delay in bringing contract into effect as a result of delayed approvals in Germany.
Net Variation (+/- months)	**+73**		

C.3.4 Other costs / savings resulting from timescale variation

Project/Increment Title	Date	£m (+ Cost / - Saving)	Category	Reason for expenditure or saving
A400M	Historic	+41		The Department has extended the service life of the Hercules C-130K until the end of 2012.
Total		**41**		

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

Project/Increment Title	Operational Impact
A400M	The revised forecast A400M In Service Date no longer aligns with the C-130K Out of Service Date of 2013. This increases the pressure on existing tactical airlift capability from 2013 to 2015. Interim measures to mitigate this include action to increase the availability of the remaining C-130J fleet.

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
A400M		

C.5. Support / PFI Contract

D Section D: Performance

D.1. Sentinel Score

Current score	Last years score	Comments
80% GREEN	70% AMBER	

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	22 A400M aircraft, mission planning and ground support systems	Yes	
2. Training	UK A400M training solution, including interim use of the International Training	Yes (with risks)	
3. Logistics	In-Service Support contract.	Yes (with risks)	
4. Infrastructure	A400M infrastructure projects, including an electronic warfare facility at RAF	Yes (with risks)	
5. Personnel	Formation of squadrons and related Service pesonnel	Yes	
6. Doctrine	Agreed capability milestones, including aerial delivery and tactical operation concepts.	Yes	
7. Organisation	A400M is being overseen by Strategic Mobility (Air) Project Board & Future Brize Project Board.	Yes	
8. Information	Integration of the mission planning (including electronic warfare) and ground support systems into wider MOD operational and logistic support structures.	Yes	
Current forecast (with risks)		8 (3)	0
Last year's forecast (with risks)		8 (4)	0

D.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Equipment	Technical Factors	Reflects that the amended contract includes revised aircraft production and delivery schedules.
Historic	Training	Technical Factors	Reflects that the Training Service Assessment Phase is still underway.
Historic	Equipment	Technical Factors	Reflects potential impact of the re-baselined programme, and that an amended contract is still to be concluded.
Historic	Logistics	Technical Factors	Reflects potential impact of depth maintenance facility risk on delivery of logistic support solution.
Historic	Infrastructure	Technical Factors	Reflects that the Support Assessment Phase is still underway.
Historic	Equipment	Technical Factors	Updated programme proposal received from Airbus Military, including revised production approach.
Historic	Infrastructure	Technical Factors	Reflects latest delay and the wider Future Brize Norton study.

D.3. Performance against Key Performance Measures

D.3.1 A400M

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	1,2,6,8	Deployment Capability.	Yes	
2	1	Payload.	Yes	
3	1	Environmental Operating Envelope.	Yes	
4	1,6	Tactical Operations.	Yes	
5	1,6,8	Navigation Performance.	Yes	
6	1	Communication System.	Yes	
7	1	Defensive Aids Suite.	Yes	
8	1,2,6	Aerial Delivery.	Yes	
9	2,5,7	Crew Composition.	Yes	
Current forecast (with risks)			9 (0)	0
Last year's forecast (with risks)			9 (0)	0

D.3.1.2 Key Performance Measures Variation

D.3.1.3 Operational Impact of variation

D.4 Support Contract

Project Title		
Airseeker		
Team Responsible		
Airseeker Project Team		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Air Commodore C Jones (Command, Control, Communications and Computers, Intelligence, Surveillance and Reconnaissance	16th April 2012	
Project/Increment Name	**Current Status of Projects /**	
Airseeker	Post-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

Project Airseeker seeks to sustain the UK's airborne electronic surveillance capability previously provided by the Nimrod R1 aircraft and associated ground elements, against an evolving and increasingly complex target set up to 2025. It will provide a rapidly deployable capability to support operations where it will be able to collect, analyse, fuse and disseminate a coherent and readily interpretable electronic surveillance picture in support of national, joint and coalition operations. This information will support targeting and combat identification.

A.2 The Assessment Phase

Whilst the original concept of the Project was for the procurement of a modern mission system to fit into existing Nimrod R1 aircraft, in the run up to Initial Gate approval, other platform options were introduced and were subject to detailed assessment during development of the Main Gate Business Case. The assessment also considered ground analysis facilities, training facilities and a support solution to the planned Out of Service Date of 2025.

The Project received Initial Gate approval in August 2003. Eight contractors were invited to participate in a capability-based assessment and three were chosen to go forward to a competitive-based three-stage Assessment Phase in April 2004.

The first stage required the contractors to show their understanding of the requirement, and resulted in a down-select to two contractors in April 2005.

In the second stage the remaining two contractors were required to define the system to meet the capability, proving their design through operational effectiveness modelling. This resulted in a down-select to a preferred contractor in April 2007.

When the down-selected contractor commenced the final stage of the Assessment Phase, a risk reduction exercise, it became evident that the cost of supporting the Nimrod R1, as the planned host platform, was likely to be significantly greater than anticipated.

Due to this cost escalation a change in strategy was made in 2008 to focus the remainder of the Assessment Phase on an investigation of an alternative to the Nimrod R1 as the host platform.

Work was undertaken to obtain a robust performance, time and cost envelope and a Main Gate Business Case was submitted to the Investment Approvals Board in December 2009 recommending procurement of the United States Air Force Rivet Joint System under a Foreign Military Sales arrangement.

After Defence Board consideration of the Project's cost and programme assumptions within the context of the Department's 2010 financial planning round, the Main Gate Business Case was updated through a Review Note and an Addendum. The Investment Approvals Board approved the updated Business Case in March 2010.

Signature of the Foreign Military Sales Letter of Offer and Acceptance followed that approval.

A.3 Project History since Main Gate

As from 1st April 2010 Helix became known as Airseeker.

A Letter of Offer and Acceptance was signed on behalf of the UK Government on 19 March 2010 which included a request for the USA Government to prepare and submit a revision to that letter reflecting the Planning Round 2010 settlement. Their formal response was received on 28 October 2010. Investment Approvals Board approval to sign the revised offer letter was received on 24 March 2011. The revised Letter of Offer and Acceptance was signed on behalf of the UK Government on 24 March 2011. The revision to the offer letter has been augmented by additional information on how the USA Government Programme Office, known as Big Safari, intends making contractual commitments on behalf of the UK. The USA Government has been implementing the initial stages of the Foreign Military Sales agreement in accordance with a plan that is consistent with the Planning Round 2010 settlement. A major milestone was achieved on 14 December 2010 when the first donor aircraft for conversion to become the first UK Rivet Joint aircraft was taken into work at the USA facility in Texas.

In September 2010, Royal Air Force Headquarters Air Command signed an agreement known as the Co-manning Memorandum of Understanding with the operational wing of the USA Air Force that operates the Rivet Joint aircraft and ground systems. This agreement makes provision for UK crews to be trained by the USA Air Force, funded under the Foreign Military Sales case that is managed by the Airseeker Project Team, and then allocated to operational duties by the USA Air Force Rivet Joint Commander. The first of the RAF personnel started training in January 2011, with the first graduates ready for operational Rivet Joint deployments in June 2011. This conversion training and operational experience will provide the required quantity of trained manpower to meet the Initial Operating Capability whilst significantly de-risking the Training Defence Line of Development.

A.4 In-year Progress

On 23 June 2011 the Chief of Defence Materiel signed on behalf of the Secretary of State for Defence a Memorandum of Understanding for Sustainment and Follow-on Development that had been signed by the USA Under-Secretary of Defense (Acquisition, Technology and Logistics) earlier that month, covering a Cooperative Agreement to provide support and capability updates for the USA and UK fleets of Rivet Joint aircraft and ground systems. This agreement runs to 31 March 2025.

In September 2011 the Ministry of Defence's Investment Approvals Committee approved the cost and time parameters for the Airseeker project reflecting the Planning Round 2010 settlement and the revised Letter of Offer and Acceptance submitted by the USA Government in March 2011. MPR2012 Section B has been updated to reflect the approved cost estimates rather than the noted cost estimates supplied for MPR2011.

The refurbishment and conversion of the KC-135 tanker aircraft that forms the basis of the first UK Rivet Joint aircraft is progressing ahead of schedule in Greenville Texas. The contractor encountered technical issues during the strip of the aircraft that have all been addressed with no impact to the delivery schedule and has taken the opportunity to de-risk later stages of the conversion programme by advancing some work when resources allowed this to be done.The contractor has also made purchases of equipment that will benefit conversion of the second and third aircraft. Delivery of the first aircraft to the UK is still planned for December 2013.

Progress on the Co-manning Memorandum of Understanding, whereby the USA Air Force trains and provides operational experience for UK aircrew is also on schedule. In early March 2012, 78 aircrew had completed their training at Offutt Air Force Base, 51 aircrew had completed an operational deployment with the USA Air Force Rivet Joint force in two operational locations and there were 10 aircrew on active deployment at a single operational location.

Design of the UK facilities to house ground exploitation equipment at the Joint Services Signals Unit (RAF Digby) has been agreed with the Defence Infrastructure Organisation. Options to house the aircraft maintenance facilities and training systems at the Main Operating Base (RAF Waddington) have been under review and a recommended option has been put to the Airseeker Project Board by the Defence Equipment and Support project team.

On 29 March 2012 the UK completed a 3 month exercise to investigate availability of technical evidence held by the USA Airforce that is required to support development of an aircraft type certification safety case and Release To Service in furtherance of the objectives set out in the Airseeker safety and Airworthiness strategy.

A.5 Capability Risks

Loss of the capability to be provided by Project Airseeker would remove the UK’s ability to conduct theatre-level airborne electronic surveillance in the future. UK forces would be denied the ability to acquire timely intelligence from increasingly complex and rapidly changing electronic sources in the theatre domain. This would significantly reduce the ability to acquire, process and disseminate signals, communications and electronic intelligence to UK and coalition partners. Critically, the principal source of tactical data essential to the nature of current operations would be lost, substantially reducing the ability to conduct effective targeting and information operations.

A.6 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
-	-	

A.7 Procurement Strategy

Project / Increment Title	Contractor	Contract Scope	Contract Type	Procurement Route
Airseeker	United States Government	Manufacture to Full Operational Capability	Letter Of Acceptance	Foreign Military Sales

A.8 Support Strategy

Description
The majority of through-life support activities will be covered under a Memorandum of Understanding concerning sustainment and follow-on development. The conduct of the Co-operative Support programme under this Memorandum of Understanding will be governed by a joint Steering Committee. A Co-operative Programme Office will be established at the main contractor's facility in Greenville, Texas to manage day to day maintenance and support of the combined fleet together with management of the through-life upgrade programme. The UK and USA will jointly man the Co-operative Programme Office on the basis of the proposed cost share. Depth maintenance will be based at the main contractor's facility in Greenville, Texas which currently forms the support hub for the USA Air Force fleet of Rivet Joint aircraft.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
Support and Follow on Development	United States Government	Support	Co-operative agreement	Memorandum of Understanding

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Airseeker	44	38	-6	7%	6%
Total (£m)	**44**	**38**	**-6**	**7%**	**6%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI[1]

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Airseeker	621	633	706

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Airseeker	633	634	+1	+1
Total (£m)	**633**	**634**	**+1**	**+1**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.1.1 Airseeker

Date	Variation (£m)	Category	Reason for Variation
March 2012	+2	Exchange Rate	Impact of in year exchange rate fluctuations. The project has a separate approved risk allocation for exchange rate variation (£101.328M)
July 2011	-1	Exchange Rate	Project approval based on July 2011 corporately mandated forward exchange rates. The latest Project forecast was based on exchange rates set for the annual planning round in March 2011. The variation is the difference between the two rates. The project has a separate approved risk allocation for exchange rate variation (£101.328M) .
Net Variation (£m)	**+1**		

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

Increment Title	Category	Explanation
Airseeker		

B.4 Progress against approved Support / PFI Cost[1]

Project/Increment Title	Approved Cost (£m)	Forecast cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Airseeker Sustainment and Follow on Development	633	637	+4	+4
Total (£m)	**633**	**637**	**+4**	**+4**

B.4.1 Cost variation against approved Support / PFI Cost

B.4.1.1 Airseeker Sustainment and Follow on Development

Date	Variation (£m)	Category	Reason for Variation
September 2011	+4	Exchange Rate	Project approval based on July 2011 corporately mandated forward exchange rates. The latest Project forecast was based on exchange rates set for the annual planning round in March 2011. The variation is the difference between the two rates. The project has a separate approved risk allocation for exchange rate variation (£101.328M) .
Net Variation (£m)	**+4**		

B.4.2 Operational Impact on Support / PFI Cost

Increment Title	Category	Explanation
Airseeker Sustainment and Follow on Development		-

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	38	0	38
Demonstration and Manufacture Phase	15	115	130
Support Phase / PFI Cost	0	3	3
Total Expenditure	**53**	**118**	**171**

[1] The Airseeker approval figures have been updated this year because the Airseeker approval has now been finalised.

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase (months)
Airseeker	August 2003	March 2010	79

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Approved	Budgeted For	Latest Approved
Airseeker	July 2014	October 2014	August 2015

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Airseeker	In-Service Date The In-Service Date is the date at which the User will have a minimum deployable capability and would declare an Initial Operating Capability. Initial Operating Capability 1. Delivery of the following Equipment Defence Lines Of Development elements in accordance with the Project Airseeker Integrated Test, Evaluation and Acceptance Plan: a. One aircraft. b. Ground Support facilities at the Main Operating Base and ground analysis facility. c. One Modular Processing System (deployable ground station). 2. Provision of the following Training Defence Lines of Development elements: a. Declaration of Ready For Training date. b. Provision of two trained air crews. c. Provision of sufficient trained Groundcrew and Mission Support Personnel to support a *** deployment. 3. Provision of declaration of Logistic Support Date.

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Airseeker	October 2014	October 2014	0	0

C.3.3 Timescale variation

C.3.3.1 Airseeker

Date	Variation (+/- months)	Category	Reason for Variation
Net Variation (+/- months)	**0**		

C.3.4 Other costs / savings resulting from timescale variation

Project/Increment Title	Date	£m (+ Cost / - Saving)	Category	Reason for expenditure or saving
Total		**0**		

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

Project/Increment Title	Operational Impact
Airseeker	-

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Airseeker	Initial Operating Capability with the addition of: - Two aircraft (giving a total of three aircraft) - One modular processing system (giving a total of two) - One Airborne Capability Extension System - One Mission Crew Training System - One Maintenance Crew Training System - Two Trained Air Crews (giving a total of four) - Fully trained support and maintenance personnel.	Progress is on track to meet the Full Operating Capability via the Foreign Military Sales Case for the Rivet Joint procurement together with the Co-manning and Sustainment and Follow-on Development Memoranda of Understanding with the USA.

C.5. Support / PFI Contract

C.5.1 Scope of Support / PFI Contract

Project/Increment Title	Scope
Airseeker Sustainment and Follow on Development	The conduct of the Co-operative Support programme under this Memorandum of Understanding will be governed by a joint Steering Committee. A Co-operative Programme Office will be established at the main contractor's facility in Greenville, Texas to manage day to day maintenance and support of the combined fleet together with management of the through-life upgrade programme. The UK and US will jointly man the Co-operative Programme Office on the basis of the proposed cost share. Depth maintenance will be based at the main contractor's facility in Greenville, Texas which currently forms the support hub for the USA Air Force fleet of Rivet Joint aircraft.

C.5.2 Progress against approved Support / PFI Contract Go-Live Date

Project/Increment Title	Approved Date	Actual Date	Variation (+/- months)	In-year Variation (+/- months)
Airseeker Sustainment and Follow on Development	April 2010	June 2011	+14	0

C.5.2.1 Go-Live Date Variation

Airseeker Sustainment and Follow on Development

Date	Variation (+/- months)	Category	Reason for Variation
Historic	+14	Budgetary Factors	Following approval of the Main Gate Business Case in March 2010 a Capability Management Measure relating to Planning Round 2010 stage 3c was imposed which resulted in delaying the support phase of the project by 14 months.
Net Variation (+/- months)	**+14**		

C.5.3 Progress against approved Support / PFI Contract End Date

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-year Variation (+/- months)
Airseeker Sustainment and Follow on Development	March 2025	March 2025	0	0

C.5.3.1 End of Contract Date Variation

Airseeker Sustainment and Follow on Development

Date	Variation (+/- months)	Category	Reason for Variation
			-
Net Variation (+/- months)	**0**		

C.5.4 Other costs / savings resulting from Support Cost variation

Project/Increment Title	Date	£m (+ Cost / - Saving)	Category	Reason for expenditure or saving
		-		-
Total (£m)		**0**		

C.5.5 Operational Impact of Support / PFI Support Contract variation

Project/Increment Title	Operational Impact
Airseeker Sustainment and Follow on Development	-

D Section D: Performance

D.1. Sentinel Score

Current score	Last years score	Comments
85% GREEN	80% GREEN	Score as of 30 March 2012

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	The provision of the Rivet Joint aircraft and ground-based systems that sustain the UK's Airborne Signals Intelligence capability to at least 2025.	Yes (with risks)	
2. Training	The provision of sufficient quantities of competent and current Aircrew and Ground Operators and Maintainers to meet Airseeker In-Service Date, Full Operating Capability timescales and through-life support to at least 2025.	Yes	
3. Logistics	Planning in detail the procurement, movement and maintenance all the support requirements that will be affected by the Airseeker acquisition and through life support for all the five elements of Airseeker systems, which are: Air Platform, Air Element, Ground Equipment, Training Element (Maintenance Training System, Field Exportable Training System) and Support Element (Forward Maintenance Equipment (Support Equipment, Test Equipment, Tools) and Ground Support Equipment (Power, Cooling, Jacks, Rigs)).	Yes	
4. Infrastructure	The acquisition, development and management of fixed permanent buildings and structures, land, utilities and facility management services in support of the Airseeker programme to meet In-Service Date, Full Operating Capability timescales and through-life support to at least 2025.	Yes (with risks)	

5. Personnel	The provision of sufficient quantities of competent and current Aircrew and Ground Operators and Maintainers to meet In-Service Date, Full Operating Capability timescales. The Airseeker Programme is adequately resourced to meet In-Service Date, Full Operating Capability timescales and the continued through-life support to at least 2025.	Yes	
6. Doctrine	The development and endorsement of Rivet Joint Concept of Use and Rivet Joint Concept of Operations.	Yes	
7. Organisation	Maintain 51 Squadron throughout co-manning. 51 Squadron has the ability to maintain and operate the Rivet Joint. Airseeker project team is sufficiently manned to manage the introduction of the Rivet Joint system into service and manage associated through life support activities.	Yes	
8. Information	The provision of the Rivet Joint system to have connectivity to UK Communication Information System for Information Exchange Requirements. System is Security Accredited by UK / USA Authorities	Yes	
Current forecast (with risks)		8 (2)	0
Last year's forecast (with risks)		8 (4)	0

D.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Training	Technical Factors	Previous reported risk of maintainer shortages at Iinitial Operating Ccapability will be mitigated through the temporary use of Field Service Representatives.
October 2011	Logistics	Technical Factors	Sustainment & Follow-on Development MoU signed and waiver received from Joint Supply Chain authorities to exempt the use of Management of Joint Defence Inventory.
Historic	Equipment	Technical Factors	Risk of not achieving Aircraft Release to Service.

Historic	Training	Technical Factors	The risk that the initial Operator and Maintainer training solution might not adequately meet UK requirements.
Historic	Logistics	Technical Factors	UK Supply Policy mandates the use of Management of Joint Defence Inventory for Airseeker but support arrangement with the US government precludes use of this logistic information system approach. UK Joint Support Chain authorities will have to be satisfied that the alternative approach based on the US Air Force system is acceptable.
Historic	Infrastructure	Technical Factors	Fixed ground element at communications infrastructure site may not be complete in time for Interim Operating Capability.

D.3. Performance against Key Performance Measures

D.3.1 Airseeker

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
KUR 1	Equipment	Missions shall be capable of being mounted on a daily basis for a sustained period (represented by *** days) from any combination of the Main Operating Base and Deployed Operating Base with a *** probability of completion without mission failure, defined as an attributable failure that results in either a mission abort or loss of the mission objective.	Yes	

KUR 2	Logistics	The Ground Element shall complete follow-on exploitation of a mission within *** hours of the completion of each mission.	Yes	
KUR 3	Information	The User shall be provided with the secure interoperability necessary to deliver the required Military Capability, i.e. interoperability with all organisations, platforms and systems necessary to deliver all requirements associated with assured information exchange to the priority specified in the Helix Information Exchange Requirements Document	Yes	
KUR 4	Training	The means shall be provided to fully train all those personnel involved in the operation of the system.	Yes	
KUR 5	Training	The means shall be provided to fully train all those personnel involved in operational support of the system.	Yes	

KUR 6	Training	The means shall be provided to fully train all those personnel involved in the maintenance of the system.	Yes	
KUR 7	Information	Detectable routine radio emissions upon selection shall provide electronic combat support to the military commander.	Yes	
KUR 8	Information	Detectable routine radar emissions upon selection shall provide electronic combat support to the military commander.	Yes	
KUR 9	Infrastructure	The Ground Element shall provide Operational Support.	Yes	
Current forecast (with risks)			9 (0)	0
Last year's forecast (with risks)			9 (1)	0

D.3.1.2 Key Performance Measures Variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	KUR 6	Technical Factors	Previous reported risk of maintainer shortages at Initial Operating Capability will be mitigated through the temporary use of Field Service Representatives.
Historic	KUR 6	Technical Factors	The initial Operator and Maintainer training solution might not adequately meet UK requirements

D.3.1.3 Operational Impact of variation

D.4 Support Contract

D.4.1 Airseeker Sustainment and Follow on Development

D.4.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
KUR 1&2	Logistics	FMS Contract Signed	Yes	
KUR 1&2	Logistics	SFD MoU Signed	Yes	
Current forecast (with risks)			2 (0)	0
Last year's forecast (with risks)			# (#)	#

D.4.1.2 Key Performance Measures variation

D.4.1.3 Operational Impact of variation

Project Title		
Astute		
Team Responsible		
Submarine Production		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Commodore Richard Stokes (Deterrent and Under Water Capability)	19th June 2012	
Project/Increment Name	**Current Status of Projects / Increments**	
Astute Boats 1-3	Post Main Investment Decision	
Astute Boat 4	Post Main Investment Decision	
Astute Boat 5	Post Main Investment Decision	
Astute Boat 6	Pre-Main Investment Decision	
Astute Boat 7	Pre-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

The military requirement is for up to 8 Astute Class Submersible Ship Nuclear to replace the existing Trafalgar Class of nuclear powered attack submarine.

Astute Class submarines are required to perform a range of military tasks; these unique requirements are combined within the Astute design to provide global reach, endurance, covertness, sustained high speed and the ability to conduct unsupported operations in hostile environments.

A.2 The Assessment Phase

In June 1991 (equivalent of Initial Gate) approval was given to proceed with a programme of studies at an estimated cost of £6 million (1991/1992 prices) to define the Batch 2 Trafalgar Class Boat (now known as the Astute Class). This programme of studies led to the issue of an Invitation to Tender for the design and build of an initial batch of three Astute Class Submersible Ship Nuclear and a further approval of £2 million (1992/1993 prices) for contractor and Defence Research Agency support to MOD during the tendering exercise in 1994.

In July 1994, as a result of concerns over the overall affordability of the programme, Minister (Defence Procurement) and the Treasury approved a further £24 million (at 1993/1994 prices) for risk reduction studies to be undertaken in parallel with the formal bid phase of the project. To maintain an effective competition, contracts for risk reduction were awarded to both bidders, GEC Marconi (now BAE Systems (Submarine Solutions)) and Vickers Shipbuilding and Engineering Ltd.

GEC-Marconi was identified as MOD's preferred bidder in December 1995. Using the policy of No Acceptable Price No Contract, a Prime Contract was placed in March 1997 for the design, build and initial in service support of the first three of the Class.

A.3 Project History since Main Gate

For Astute Class Programme historical data please refer to previous MPRs

Planning Rounds
In 2009 a savings measure option was taken removing £139 million of funding from Astute Boats 2-7 from 2009 to 2013. The savings resulted in delayed delivery of Boats 2-4, which were already in build and deferred build start dates and the procurement of long lead items for Boats 5-7. As a consequence of this, cost growths occured in later years as reported in more detail in MPR 09. During Planning Rounds 10 and 11 Boats 2 to 7 were delayed further to align with the deferred Successor Deterrent Programme, culminating in the Strategic Defence and Security Review and the Value For Money Review which delayed the Successor In Service Date to 2028 and further delayed the Astute Class Programme to sustain industry. Together this forms the Planning Rounds 11 and 12 baseline.

Boat 1 HMS ASTUTE
HMS ASTUTE successfully completed first dive and initial series of dived trials during February and March 2010, and successfully completed full power trials and deep dive 30 April 2010.

In Service Date based on meeting the above criteria was declared and agreed by Investment Appraisal Board in July 2010, retrospectively back dated to 30 April 2010. HMS ASTUTE continued with the Contractor's Sea Trials programme covering platform and initial capability proving trials, interspersed with planned maintenance and defect rectification periods.

HMS ASTUTE was commissioned, by the Duchess of Cornwall the boat's patron, into the Royal Navy at Her Majesty’s Naval Base Clyde on 27 August 2010.

On 22 October 2010 HMS ASTUTE was involved in a grounding and collision incident whilst on sea trials near the Isle of Skye and the British Underwater Test and Evaluation Centre on the West coast of Scotland. The submarine was floated off after 12 hours and following evaluation by the Head of Submarine Production Team and BAE Systems Engineers she returned to Her Majesty’s Naval Base Clyde under her own power. The submarine was repaired on the Faslane Ship Lift and left the facility on 24 November.

HMS ASTUTE reached Contract Acceptance Stage 1 Platform Demonstration, on 29 November 2010 from which point it is managed as an In-Service Submarine under MOD rather than contractor direction.

HMS ASTUTE returned to sea in early December 2010 for training to re-validate its navigational certification. The sea trials programme has been delayed by ten months due to First of Class technical issues, including modification of the Internal Communication System and the actions required recovering from the grounding.

Boat 2 AMBUSH
Boat 2 reactor core load was completed in November 2010 with the submarine named on 16 December 2010 and launched on 6 January 2011. It continues systems commissioning and preparations for Power Range Testing planned for late 2011 with sailing on sea trials anticipated Spring 2012.

Boats 3 to 7
During 2007 to 2010 Boats 3 to 7 have been delayed due to Boat 1 holding on to scarce resource for longer to deal with the technical issues, and also due to the MOD slowing the programme down to realise early year savings.

Boat 3 (ARTFUL) completed final hull unit welding in May 2010; she is now a closed submarine. Final stages of outfitting continued throughout the year.

Since the launch of Boat 2 in January 2011 Boat 4 (AUDACIOUS) units and modules are being moved onto the build line.

In March 2010 approval for Initial Build activities for Boat 5 was given, and Long Lead Items were ordered for Boat 6.

ASTUTE CLASS TRAINING SERVICE
The Astute Class Training Service (ACTS) was established through a Private Finance Initiative arrangement, to deliver the unique training required following the introduction of the Astute Class Submarines. Contract award was in 2001, with training delivery commencing in 2006. The current contract covers training for Boats 1-3 only because, at the time of contract award, there was no approval for the build of later Astute Class Submarines. Further approval was received in 2007, to include provision for Boat 4 (AUDACIOUS) within Astute Class Training Service and work is underway to add this to the contract.

SUPPORT
In July 2006 an Astute Class Support Review Note was approved to implement an Initial Astute Support Solution for four years and 5 months elapsed time, up to the end of December 2012.

STRATEGIC DEFENCE AND SECURITY REVIEW
In October 2010 outcome of the Strategic Defence and Security Review endorsed the political, military and industrial requirement for a 7-Boat Astute Class Programme leading to the Successor Deterrent Programme First of Class In Service Date at 2028, based on a 36 month nuclear powered ballistic submarine production drumbeat. Part of the Astute Class Programmes objectives is to sustain industry for Successor; therefore the revised plan for Astute Class Programme extended timeframes by an average of 14 months per boat. A Review Note to secure approval for revised time and cost parameters will be submitted to Her Majesty's Treasury before September 2011.

A.4 In-year Progress

Approvals
On 20th July 2011 Her Majesty's Treasury approved revised time and costs for Boats 1 to 4 and approved Main Build for boat 5, Initial Build for boat 6 and Long Lead Items for boat 7. At this time the Investment Approvals Committee also approved In-Service Dates for Boats 5, 6 and 7.

Boat 1 HMS ASTUTE
In June 2011 HMS ASTUTE successfully completed the UK phase of Contractor Sea Trials. While on a comprehensive sea trials programme in US waters the submarine successfully completed the first of class British Tomahawk Land Attack Missiles Firing Trials, final Spearfish deep discharge trials and underwater Magnetic Silencing; returning to Her Majesty's Naval Base Clyde in March 2012 to commence Base Maintenance Period number 6, completion of which is planned to be late autumn 2012. As a further element of the First of Class sea trials programme HMS ASTUTE has been fitted with a Payload Bay and will prove and demonstrate this additional capability during the next phase of sea trails.

Boat 2 AMBUSH
Boat 2 AMBUSH was launched and lowered in to the basin outside of the Devonshire Dock Hall on 6 January 2011. Fitting out of the submarine has been completed and the vessel is now undergoing a rigorous period of trials and testing prior to exiting the shipyard. The submarine successfully completed her first test dive in the shipyard's basin in early October 2011. This is a critical milestone ahead of the boat's planned exit from Barrow.

Boats 3 to 5
Boat 3 ARTFUL continues construction in the Devonshire Dock Hall at Barrow and is making good progress with Diesel Generator Trials successfully completed in August 2011. It is anticipated that ARTFUL will leave the Devonshire Dock Hall in 2013 and exit Barrow approximately 12 months later to commence sea trials.

Boat 4 AUDACIOUS; all hull and casing units have been moved to the Devonshire Dock Hall and a number of the internal equipment modules have also been shipped inside the respective units. First phase of reactor loop build was successfully completed and Main Propulsion Machinery Package shore trials have begun (pre-shipping). Two key pressure hull unit-to-unit welds have commenced.

Boat 5 ANSON had her 'keel laid' on 13th October 2011, at a traditional keel laying ceremony where the Minister for International Security Strategy, Gerald Howarth unveiled a section of her hull.

ASTUTE CLASS TRAINING SERVICE
The Astute Class Training Service (ACTS) has provided training for the ships companies of both HMS ASTUTE and AMBUSH throughout the last twelve months. This year saw the first delivery of the Submariner Qualification course for the Royal Navy. A Formal Notice of Change was issued to the Training Service Provider, FAST Training Services Limited, for the inclusion of Boat 4 AUDACIOUS into the training service programme. On 15th February 2012 the Investment Approvals Committee approved the Astute Class Training Service Boat 4 Information Note which articulated a revised funding approach for the ACTS Boat 4 change delivering a saving against the 2007 Astute Class Training Service Boat 4 approval. Boat 4 will be placed on contract with FAST during 2013.

SUPPORT
Our revised approval sought to extend the principles and structure of the Initial Astute Support Solution model to Operational Handover (plus 3 months) for each of the 7 submarines. The additional 3 months post Operational Handover is to capture any residual transition costs that fall beyond the Operational Handover milestone for each submarine.

A.5 Capability Risks

Delivery of Boat 1 is critical to attack submarine's readiness profile. Boat 1's delay will result in the delayed introduction of improved capability over current classes. The Astute Class will also de-risk capability essential for an affordable Successor deterrent programme.

A.6 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
Swiftsure & Trafalgar Class Update Final Phase	2004	In- Service

A.7 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Procurement Route**			**Approval Status**
Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Astute Boats 1-3	BAE Systems Maritime-Submarines (formerly BAE Systems (Submarine Solutions) and BAE Systems Electronics Ltd – Astute Class Project and BAE Systems Astute Class Ltd)	Demonstration to In-Service	Boat One – Target Cost Incentive Fee Boats Two & Three – Target Cost Incentive Fee with Maximum Prices	Competitive - UK

Astute Boat 4	BAE Systems Maritime-Submarines	Boat 4 and Design for Cost Reduction for Boats 4 to 7	Limit of Liability for 1st three years of seven year build programme. Working towards Inclusion of Target Costs Incentive Fee for whole Boat 4. A Revised procurement strategy for remainder of Astute Class is under development following the outcome of the Strategic Defence and Security Review.	Single Source
Astute Boat 5	BAE Systems Maritime-Submarines	Boat 5 Long Lead items & Initial Build	Limit of Liability placed for Minimum Long Lead Items Scope of Work	Single Source
Astute Boat 6	BAE Systems Maritime-Submarines	Boat 6 Long Lead Items	Limit of Liability placed for Minimum Long Lead Items Scope of Work	Single Source
Astute Boat 7	BAE Systems Maritime-Submarines	Boat 7 Long Lead Items	Limit of Liability placed for Minimum Long Lead Items Scope of Work	Single Source

A.8 Support Strategy

Description
The Initial Astute Support Solution was approved in July 2006; it follows a traditional support model, but recognises Astute's differences and introduces additional arrangements as appropriate. Provision has been made to employ the build contractor (BAE Systems) as the Astute Technical Authority; MOD will be the Approving Authority, with the Nuclear Propulsion Project Team responsible for the Nuclear Steam Raising Plant. MOD Equipment Project Teams will support specific equipments with Head of In-Service Submarine (Head of Submarine Production up to Operational Handover) maintaining a Platform focus and providing the flotilla wide single point of contact for Navy Command. Astute Class Maintenance at the waterfront will be conducted under existing Warship Support Modernisation Initiative arrangements. The Astute Class Training Service is a Private Finance Initiative contract, initially approved for 36 years to provide Astute Class specific training to the Royal Navy for Boats 1-3. Approval was given in 2007, to extend to a 38 year contract, to cover the life of Boat 4. Approval for later Boats will be considered during FY11/12 to support an Approvals strategy for training to be presented as part of Submarine Training and Education Programme during FY12/13

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
Technical Authority Support Contract	BAE Systems	Provision of Technical Authority services	Firm Price	Single Source
Astute Class Training Sevice Boats 1-3	FAST Training Services Limited; 47.5% owned by BAE Systems, 47.5% owned by L-3 MAPPS and 5% owned by VT Group	Training	PFI	Competitive Tender
Astute Class Training Sevice Boats 4-7	FAST Training Services Limited; 47.5% owned by BAE Systems, 47.5% owned by L-3 MAPPS and 5% owned by VT Group	Training	PFI	Single Source

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Astute	33	29	-4	1%	1%
Total (£m)	**33**	**29**	**-4**	**1%**	**1%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Astute Boats 1-3	-	2233	-
Astute Boat 4	1224	1279	1351
Astute Boat 5	1369	1464	1467
Astute Boat 6	-	632	-
Astute Boat 7	-	325	-

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Astute Boats 1-3	2233	3386	+1153	-94
Astute Boat 4	1279	1448	+169	+44
Astute Boat 5	1464	1453	-11	+26
Astute Boat 6	632	617	-15	-13
Astute Boat 7	325	300	-25	-25
Total (£m)	**5933**	**7204**	**+1271**	**-62**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.1.1 Astute Boats 1-3

Date	Variation (£m)	Category	Reason for Variation
March 2012	-30	Budgetary Factors	Submarine Enterprise Performance Programme saving Option
March 2012	-43	Technical Factors	Prime contract decreases (a mixture of overheads, material and labour). (-£36m). Non Prime decreases (a mixture of combat systems, nuclear power management, safety platform and desing and other non construction costs). (-£7m)
March 2012	+1	Receipts	Shipbuilders Relief not claimed in forecast year 2011/12 (£1m)

April 2011	-5	Receipts	Change in profile of Shipbuilders Relief. (-£5m)
April 2011	-17	Technical Factors	Prime contract decreases (a mixture of overheads, material and labour). (-£18m). Non Prime decreases (a mixture of combat systems, nuclear power management, safety platform and design and other non construction costs). (+£1m)
Historic	+6	Technical Factors	Prime contract increases (a mixture of overheads, materials and labour). (+£6m).
Historic	+28	Budgetary Factors	Non Prime increases (a mixture of combat systems, nuclear power management, safety platform and design and other non construction costs) (+28m). This is as a result of aligning the Non Prime costs to the revised deferred build programme issued under Planning Round 2011 option.
Historic	+144	Budgetary Factors	An option was taken during the 2011 Planning Round to defer the Successor In-Service Date and modify build delivery rate. Astute build "drumbeat" was revised to match Successor revised In-Service Date. (+£144m).
Historic	+1	Technical Factors	Cost of HMS Astute's grounding incident. (+£1m).
Historic	-412	Accounting Adjustments and Re-definitions	Removal of Cost of Capital due to Clear Line of Sight policy implemented by HM Treasury (-£412m).
Historic	+22	Technical Factors	Prime contract increases (a mixture of overheads, materials and labour). (+£31m). Non Prime decrease (a mixture of combat systems, nuclear power management, safety platform and design and other non construction costs) (-£9m).
Historic	-2	Receipts	Increase in receipt for Shipbuilders Relief (-£2m).

Historic	+9	Budgetary Factors	A savings option, Defer Successor (Future Deterrent) In Service Date and modify the build programme of later Astute hulls, was taken in Planning Round 2010 which increases the cost of Astute Boats 1-3 by (£9m).
Historic	+40	Technical Factors	Prime increases (a mixture of labour, materials, sub-contractors and risk/indemnity/warranty and other construction costs) (+£76m). Non Prime decrease (a mixture of combat systems, nuclear power management, safety platform and design and other non construction costs) (-£36m).
Historic	+3	Receipts	Reduction in receipt for Shipbuilders Relief (+£3m).
Historic	+87	Budgetary Factors	A savings option was taken in the 2009 Planning Round which removed £139M of funding over the 4 years from 2009/10 from the Astute Boats 2-7 build programme, the consequent programme slippage results in additional cost growth in later years of £539m. Of this, £87m relates to boats 1-3.
Historic	-23	Accounting Adjustments and Re-definitions	Increase in shipbuilders relief (-£12m). Re-costing of Non-Attributable items since MPR06 (Items not Included in the original approval) (+£51m). Shipbuilders Relief (-£58m) and Sunk cost corrections (-£3m) made in project account. Decommissioning and Decontamination costs (-£1m).
Historic	+47	Accounting Adjustments and Re-definitions	Reallocation of Pension cost increases since MPR05 (-£5m). Re-costing of Non-Attributable items since MPR07 (i.e. those items not included in original approval) (+£28m). Shipbuilders Relief correction (+£6m). Recosting of Non-Attributable items since MPR05 (items not included in the original approval) (+£29m). Removal of items wrongly attributed to Astute Approval in previous years (-£11m)

Historic	-177	Accounting Adjustments and Re-definitions	Decrease reflects difference between anticipated resource profile at approval and current profile (Equipment Plan 2001) (-£74m). Removal of Astute Class Training Service costs that have been incorrectly included in previous MPRs – training not part of original Astute Main Gate approval (-£62m). Removal of items wrongly attributed to Astute Approval in previous Years (-£41m).
Historic	+257	Changed Capability Requirements	Includes change to fore end design, completion of land attack missile capability and improved tactical data link capability (+£32m). Additional Capability originally part of Astute second buy which has been brought forward into the first buy (+£225m).
Historic	+39	Procurement Processes	BAE Systems to forego any incentive payments on Boat One(-£13m). Reduction in Warranty to be provided by BAE Systems from three years to one year (-£3m). Planned Contract Amendments (+£55m).
Historic	+40	Inflation	Variation between anticipated rates for GDP and Variation on Price on contract (sunk costs only) (+£14m). Correction in previous Variation on Price calculation – incorrect split between labour and materials (+£26m).

Historic	+115	Technical Factors	Sustainability costs of maintaining submarine build capability removed (-£204m). Option E07UW178S – capability reduction to a 7 Boat Astute Programme, taken in Equipment Plan 2007 (-£29m). Option E07UW601S – compress Astute class Boats1-3 sea trials programme, taken in EP07 (-£3m). Cost Growth from Review Year 06 to EP07. Materials (+£164m), Labour (+£68m), GDP (+£65m), Risk (+£50m), Profit (+£7m), Non-Prime (-£66m), Overhead (-£12m), Shipbuilder Relief (+£58m). Cost growth in provision of some elements of nuclear safety cases (+£17m).
Historic	+272	Technical Factors	Departmental review identified savings opportunities within other elements of nuclear safety cases (-£20m). Increase in cost as a result of the reassessment of risk, specifically, Team Leader challenge in MPR05 (+£123m). Cost increase identified as part of the Integrated Project Team's internal review in 2005/06 Prime Contract Overheads (+£97m), Prime Contract Materials (+£61m), Prime Contract Labour (+£26m) and unallocated cost growth (+£21m). Changes in throughput assumptions between MPR05 and MPR06 (-£73m). Reduced Requirement for Technology Insertion post MPR05 (CDEL -£17m. Prime Contract pricing assumptions and changes to costing (+£19m). Reassessment of risk (+£51m). Reduction of risk on Sonar 2076 programme (-£16m).

Historic	+751	Technical Factors	Re-costing of land attack missile interface & integration (+£5m). Re-costing of External communications (+£5m). Increase in overall BAE Systems base costs (shipyard and sub contracts) reflecting a re-estimate as well as cost of delay (+£571m). Increase in risk provision owing to technical complexity (+£152m). Changed cost reflecting Astute Agreement of February 2003 (+£52m). Re-assessment of overhead rates used in costing (-£36m).Man-hour reduction on Prime contract (-£20m).Removal of Risk funding post Boat 3 delivery (-£2m). Expenditure not apportionable to specific elements of the programme due to 2007 budgeting baseline being overstated which has subsequently been corrected (+£25m). Prime increase (+£27m). Non Prime decrease (-£28m).
Net Variation (£m)	**+1153**		

B.3.1.2 Astute Boat 4

Date	Variation (£m)	Category	Reason for Variation
March 2012	+51	Technical Factors	Increase driven by changes to the Prime data (Labour, Overheads, Material) (+£51m)
March 2012	-7	Technical Factors	A decrease in 11/12 Forecast of Outturn Year due to Combat Systems (-£4m), Platform (-£3m), Core H9 (-£2m) offset by an increase in Prime Contract for Baseband Coherency (+£2m).
Historic	+56	Budgetary Factors	An option was taken during the 2011 Planning Round to defer the Successor In-Service Date and modify build delivery rate. Astute build drumbeat was revised to match Successor revised In-Service Date. (+56m)

Historic	+15	Technical Factors	Prime contract increase, a mixture of labour overheads, materials and VAT (+£20m). Non Prime contract decrease, a mixture of Electric Boat, Government Furnished Materiel and Nuclear (-£5m).
Historic	-26	Technical Factors	Prime contract decrease, a mixture of labour overheads, materials and VAT (-£25m). Non Prime contract decrease, a mixture of Combat systems and Nuclear (-£1m).
Historic	+10	Budgetary Factors	A savings option to defer Successor (Future Deterrent) In-Service Date and modify the build programme of later Astute hulls, was taken in Planning Round 2010 which increases the cost of Boats 4-7 by £322m. Of this, £10m relates to Boat 4.
Historic	+102	Budgetary Factors	A savings option was taken in the 2009 Planning Round which removed £139M of funding over the 4 years from 2009/10 from the Astute Boats 2-7 build programme, the consequent programme slippage results in additional cost growth in later years of £539m. Of this, £102m relates to Boat 4.
Historic	+19	Technical Factors	Increase in Build, Nuclear Plant and Safety costs (+£19m).
Historic	-51	Receipts	VAT Receipt relating to sunk costs (-£51m).
Net Variation (£m)	**+169**		

B.3.1.3 Astute Boat 5

Date	Variation (£m)	Category	Reason for Variation
March 2012	+55	Technical Factors	Prime data increase in future years against pre approval baseline profile, driven by a mixture of labour, overheads and materials (+£55m)
March 2012	+21	Technical Factors	Prime data increase in FY11/12 against pre approval baseline profile, driven by a mixture of labour, overheads and materials (+£21m)

March 2012	-50	Receipts	VAT receipt relating to sunk costs (-£50m)
Historic	+11	Budgetary Factors	A savings option to defer Successor (Future Deterrent) In-Service Date and modify the build programme of later Astute hulls, was taken in Planning Round 2010 which increases the cost of Boats 4-7 by £322m. Of this, £11m relates to Boat 5.
Historic	-15	Budgetary Factors	Reduction in the expected cost of Boat 5 reactor core.
Historic	-33	Budgetary Factors	The variance of £32m generated between the expected cost outturn of Boat 5 and the relevant Boat 5 approval results from the Boat re-design activities, an element of which have been approved against Boats 4 and 5, as a batch solution, but are contracted for solely against Boat 4. As the re-design work is a batch solution BAE have not been able to provide costs on a Boat by Boat basis which would align with separate IAB approvals. Sunk Costs have therefore been scored against the Boat 4 within the Submarine Project Team accounts which has created the variation between outturn boat costs and boat approval for Boat 5
Net Variation (£m)	**-11**		

B.3.1.4 Astute Boat 6

Date	Variation (£m)	Category	Reason for Variation
March 2012	-11	Budgetary Factors	Impact of Option taken against the Astute Batch 2 Programme to reprofile costings. The £11M has come back into the programme but outside of the time line of the existing Boat 6 Approval.
March 2012	-2	Technical Factors	Prime data decrease in FY11/12 against pre- approval baseline profile, driven by a mixture of labour, overheads and materials (-£2m)

Historic	-1	Budgetary Factors	Revised estimate of cost of the Nuclear Reactor Core for Astute Boat 6. (-£1m)
Historic	+1	Accounting Adjustments and Re-definitions	Removal of Cost of Capital due to Clear Line of Sight policy implemented by HM Treasury.(+£1m)
Historic	-2	Budgetary Factors	Revised estimate of cost of the Nuclear Reactor Core for Astute Boat 6 (-£2m)
Net Variation (£m)	**-15**		

B.3.1.5 Astute Boat 7

Date	Variation (£m)	Category	Reason for Variation
March 2012	-25	Budgetary Factors	Impact of Option taken against the Astute Batch 2 Programme to reprofile costings. The £25M has come back into the programme but outside of the time line of the existing Boat 7 Approval.
Net Variation (£m)	**-25**		

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

B.4 Progress against approved Support / PFI Cost

Project/Increment Title	Approved Cost (£m)	Forecast cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Initial Astute Support Solution	315	269	-46	-3
Astute Class Training Service Boats 1-3	151	660	+509	+12
Astute Class Training Service Boat 4	260	201	-59	-117
Total (£m)	**726**	**1130**	**+404**	**-108**

B.4.1 Cost variation against approved Support / PFI Cost

B.4.1.1 Initial Astute Support Solution

Date	Variation (£m)	Category	Reason for Variation
March 2012	-3	Technical Factors	Cost reduction due to re assessment of the cost of supporting boats. (-£3m).
Historic	-25	Technical Factors	Cost reduction due to not needing to support boats as a result of slippage (-£25m).

Historic	-18	Technical Factors	Cost reduction due to not needing to support boats as a result of slippage (-£18m).
Net Variation (£m)	**-46**		

B.4.1.2 Astute Class Training Service Boats 1-3

Date	Variation (£m)	Category	Reason for Variation
March 2012	+10	Technical Factors	Re-alignment of training to the latest Astute class programme (+£10m).
March 2012	+2	Budgetary Factors	Increase in amount of recoverable VAT due to re-assessment of costs. (+£2m).
Historic	+4	Technical Factors	Re-assessment of costs relating to risk, future changes to Astute Class Training Service training and infrastructure (+£4m).
Historic	+41	Budgetary Factors	An option was taken during the 2011 Planning Round to defer the Successor In-Service Date and modify build delivery rate. Astute build "drumbeat" was revised to match Successor revised In-Service Date which impacts on Astute training (+£41m).
Historic	+15	Budgetary Factors	Increase in amount of recoverable VAT due to re-assessment of costs (+£4m). VAT rate increase to 20% (+£11m)
Historic	-1	Technical Factors	Re-assessment of costs (-£1m).
Historic	-2	Budgetary Factors	Reduction in amount of recoverable VAT due to re-assessment of costs (-£2m).
Historic	+357	Technical Factors	Re-assessment of costs for training/policy changes.(+£14m). Re-alignment of Astute Class Training Service to the revised Astute Boat Programme and extending the contract from 25 to 36 years. (+£343m).
Historic	+83	Budgetary Factors	Addition of recoverable VAT to ensure that the forecast cost is consistent with the approved cost.
Net Variation (£m)	**+509**		

B.4.1.3 Astute Class Training Service Boat 4

Date	Variation (£m)	Category	Reason for Variation
April 2011	-117	Changed Capability Requirements	Reduction in requirement. (-£117m).
Historic	+3	Technical Factors	Re-assessment of infrastructure costs and refinement of Fleet training requirements (+£3m).
Historic	+48	Budgetary Factors	An option was taken during the 2011 Planning Round to defer the Successor In-Service Date and modify build delivery rate. Astute build drumbeat was revised to match Successor revised In-Service Date which impacts on Astute training. (+£48m).
Historic	+7	Technical Factors	Re-assessment of Private Finance Initiative costs (+£5m). Extension of FAST Training Services Ltd infrastructure costs (+£3m). Other minor decreases (-£1m)
Net Variation (£m)	**-59**		

B.4.2 Operational Impact on Support / PFI Cost

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	29	0	29
Demonstration and Manufacture Phase	4036	376	4412
Support Phase / PFI Cost	218	88	306
Total Expenditure	**4283**	**464**	**4747**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase
Astute Boats 1-3	June 1991	March 1997	69
Astute Boat 4	-	May 2007	-
Astute Boat 5	-	June 2011	-
Astute Boat 6	-	-	-
Astute Boat 7	-	-	-

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Approved	Budgeted For	Latest Approved
Astute Boats 1-3	-	June 2005	-
Astute Boat 4	February 2015	August 2015	103 months from contract signature
Astute Boat 5	May 2020	August 2020	April 2021
Astute Boat 6	February 2022	May 2022	January 2023
Astute Boat 7	December 2023	March 2024	November 2024

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Astute Boats 1-3	**Original In Service Date definition:** Contract Acceptance Schedule Stage 1 (safe operation and start of operational work up) **MPR2011 Definition:** Successful completion of deep dive and full power trials. **Reason for Change:** In-Service Date has been declared on successful completion of deep dive and full power trials and demonstrates that the submarine can operate safely and independently in the operational environment. HMS Astute is now a valuable training asset for Navy Command. There was also financial and commercial benefit to MoD removing the link between contract acceptance and In-Service Date.
Astute Boat 4	**Original In Service Date definition:** Platform and Weapons acceptance against all requirements as defined within the Astute Class Through Life Management Plan, issue 6 dated April 2006. **MPR 2009 definition:** Boat 4 Operational Handover to Fleet **Reason for change:** To align In Service Date with asset being utilised by Navy Command.
Astute Boat 5	Operational Handover to Fleet
Astute Boat 6	Operational Handover to Fleet
Astute Boat 7	Operational Handover to Fleet

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Astute Boats 1-3	June 2005	April 2010	58	0
Astute Boat 4	August 2015	January 2018	29	0
Astute Boat 5	August 2020	August 2020	0	0
Astute Boat 6	May 2022	May 2022	0	0
Astute Boat 7	March 2024	March 2024	0	0

C.3.3 Timescale variation

C.3.3.1 Astute Boats 1-3

Date	Variation (+/- months)	Category	Reason for Variation
Historic	-3	Technical Factors	Re-definition of In-Service Date approved by the Investment Appraisals Board, giving retrospective achievement date of In-Service Date from July 2010 to April 2010. (-3 months).
Historic	+4	Technical Factors	Technical and programme difficulties with Boat 1 First of Class undertaking trials for the first time in 17 years. (+4 months).
Historic	+10	Technical Factors	Further delays have occurred during Astute (Boat 1) testing and commissioning phase. These were caused by technical factors the rapid resolution of which was hampered by the lack of skilled personnel with recent submarine testing and commissioning experience. (+10 months).
Historic	+47	Technical Factors	Risk analysis, taking into account opportunities to reduce construction time, predicts most likely In-Service Date of November 2008 (-1 month). Risk analysis, taking in to account opportunities to reduce construction time, predicts a most likely In-Service Date of December 2008 (-1 month). Exceptional difficulties arose with the introduction of a computer aided design system, the availability of trained staff and project management (+43 months). Effect of technical problems assessed a six month slip in In-Service Date (completion of the first phase of sea trials) (+6 months).
Net Variation (+/- months)	**+58**		

C.3.3.2 Astute Boat 4

Date	Variation (+/- months)	Category	Reason for Variation
Historic	+13	Budgetary Factors	An option was taken during the 2011 Planning Round to defer the Successor In-Service Date and modify build delivery rate. Astute build drumbeat was revised to match Successor revised In-Service Date which impacts on Astute Operational Handover dates.
Historic	+16	Budgetary Factors	A savings option was taken in the 2009 Planning Round which removed funding from Boats 2-7 build programme leading to delayed delivery dates, 16 months delay is attributed to Boat 4. This variation was not shown in MPR10 as the project was not measuring against the 50% date at that time.
Net Variation (+/- months)	**+29**		

C.3.4 Other costs / savings resulting from timescale variation

Project/Increment Title	Date	£m (+ Cost / - Saving)	Category	Reason for expenditure or saving
Support costs and current equipment	-	-	-	Costs from this delay have been factored and subsumed into the Department's revised assessment of Force Level Requirements.
Other	-	-	-	Costs from this delay have been factored and subsumed into the Department's revised assessment of Force Level Requirements.
Total		**0**		

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

Project/Increment Title	Operational Impact
Astute Boats 1-3	The Astute delay resulted in the delayed introduction of improved capability over current classes; such as improved detection, greater weapon load and increased availability. Since these delays the Department has fully considered the plans for submarine capability in the light of this and many other factors.
Astute Boat 4	Reduced ability to fulfil Fleet tasking.

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Astute Boats 1-3	FOC will be declared when the Submarines are available for operational tasking i.e following achievement of Operational Handover, generation and operational work up by Navy Command.	
Astute Boat 4	FOC will be declared when the Submarine is available for operational tasking i.e following achievement of Operational Handover, generation and operational work up by Navy Command.	
Astute Boat 5	FOC will be declared when the Submarine is available for operational tasking i.e following achievement of Operational Handover, generation and operational work up by Navy Command.	
Astute Boat 6	FOC will be declared when the Submarine is available for operational tasking i.e following achievement of Operational Handover, generation and operational work up by Navy Command.	
Astute Boat 7	FOC will be declared when the Submarine is available for operational tasking i.e following achievement of Operational Handover, generation and operational work up by Navy Command.	

C.5. Support / PFI Contract

C.5.1 Scope of Support / PFI Contract

Project/Increment Title	Scope
Initial Astute Support Solution	The BAE Systems contracted element of the Initial Astute Support Solution provides Design Management of the Astute Platform; maintenance of the Safety Case, configuration management of the design including design change and maintenance of the Certificate of Design.
Astute Class Training Service	The Astute Class Training Service is a Private Finance Initiative contract to provide Astute specific team and individual training to the Royal Navy for Boats 1-3. Approval was given in 2007, to extend to a 38 year contract, to cover the life of Boat 4.

C.5.2 Progress against approved Support / PFI Contract Go-Live Date

Project/Increment Title	Approved Date	Actual Date	Variation (+/- months)	In-year Variation (+/- months)
Initial Astute Support Solution	May 2007	May 2007	0	0
Astute Class Training Service Boats 1-3	January 2004	March 2008	+50	0
Astute Class Training Service Boat 4	December 2013	May 2015	+17	0

C.5.2.1 Go-Live Date Variation

Initial Astute Support Solution

C.5.2.2 Astute Class Training Service Boats 1-3

Date	Variation (+/- months)	Category	Reason for Variation
Historic	+50	Technical Factors	Re-alignment of Astute Class Training Service to the revised Astute Boat Programme.
Net Variation (+/- months)	**+50**		

C.5.2.3 Astute Class Training Service Boat 4

Date	Variation (+/- months)	Category	Reason for Variation
Historic	+13	Budgetary Factors	Aligning Boat 4 crew joining and training dates with Boat 4 delivery post Planning Round 2011 Option delay (+13 months)
Historic	+22	Technical Factors	2nd Manoeuvring Room Trainer procurement no longer required in advance of Boat 4 due to greater understanding of the impact of Reactor Control & Indication update on Boats 1-3 training and decision to direct fund Astute Class Training Service capital expenditure through the PFI, months to align delivery of 2nd MRT with crew joining date and training need for Boat 4 (+ 22 months)
Historic	-18	Changed Capability Requirements	To offset the risk of design changes, increased training throughput and to ensure retention of key supplier resources.
Net Variation (+/- months)	**+17**		

C.5.3 Progress against approved Support / PFI Contract End Date

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-year Variation (+/- months)
Initial Astute Support Solution	December 2012	December 2012	0	0
Astute Class Training Service Boats 1-3	September 2026	September 2037	+132	0
Astute Class Training Service Boat 4	September 2039	September 2039	0	0

C.5.3.1 End of Contract Date Variation

Initial Astute Support Solution

C.5.3.2 Astute Class Training Service Boats 1-3

Date	Variation (+/- months)	Category	Reason for Variation
Historic	+72	Technical Factors	Re-alignment of Astute Class Training Service to the revised Astute Boat Programme.
Historic	+60	Procurement Processes	Decision to extend contract by 5 years to obtain better value for money.
Net Variation (+/- months)	**+132**		

C.5.3.3 Astute Class Training Service Boat 4

C.5.4 Other costs / savings resulting from Support Cost variation

C.5.5 Operational Impact of Support / PFI Support Contract variation

D Section D: Performance

D.1. Sentinel Score

Current score	Last years score	Comments
75 Green	61 Amber	The change in the Sentinel score is due to the Astute Class Review Note being approved by HMT in July 2011 for revised time and costs for Boats 1-4 and approved Main Build for Boat 5, Initial Build for Boat 6 and Long Lead Items for Boat 7.

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	The provision of the platform and equipment/systems to meet the user requirement.	Yes (with risks)	
2. Training	Delivery of trained submarine crew and support personnel, by the enduring provision of sufficient and suitable facilities, training media and instructors.	Yes	
3. Logistics	Capability being sustained in order that Astute Class can meet allocated military tasks in peacetime, conduct a transition to war and operate effectively in time of conflict.	Yes	
4. Infrastructure	How Astute Class will operate and interface with naval real estate such as dockyards, ammunition facilities, pilots and ranges.	Yes	
5. Personnel	The provision of trained people. Acceptance of the manning solution will be a staged process.	Yes	
6. Doctrine	Expression of the principles by which military forces guide their actions and is a codification of how activity is conducted today.	Yes	
7. Organisation	The Forces Structures component of Military Capability for Astute is measured against the number of vessels in the class and their readiness state against the requirement of the Royal Naval Plan		Yes
8. Information	The provision of a coherent development of data, information and knowledge requirements for capabilities and all processes designed to gather and handle data.	Yes	
Current forecast (with risks)		7 (1)	1
Last year's forecast (with risks)		7 (1)	1

D.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
Historic	Training	Technical Factors	It is now assessed that the Training Capability for Boats 1-3 will be met. In the past 12 months a recovery plan has been instigated to address the shortfalls reported in March 2010. This action is now making significant progress such that it is now expected that the requirement will be met.
Historic	Equipment	Technical Factors	Equipment is considered to be at risk. The technical challenge of commissioning the capability is beginning to affect the schedule for the delivery of the entire Astute capability.
Historic	Organisation	Budgetary Factors	The Department's Equipment Procurement Plan balancing measures in the 2009, 2010, and 2011 Planning Rounds have deferred the delivery of the 7 Astute class boats such that the planned readiness as required by the Naval Plan cannot be met.
Historic	Training	Technical Factors	Training is at risk due to the extent of Boat design changes and the potential impact of these changes to Astute Class Training Service. Mitigation is that Astute Class Training course delivery has been prioritised to meet the known requirement and essential safety training updates are being optimised with the training delivery.
Historic	Logistics	Technical Factors	Logistics no longer considered at risk. Boat programme slippage has allowed logistics to catch up.
Historic	Logistics	Technical Factors	Risk remains to the support solution during the Transition phase from manufacture into service and in providing the initial provision of spares to the first of class.

D.3. Performance against Key Performance Measures

D.3.1 Astute Boats 1-3

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	1 to 7	Weapon system effectiveness	Yes	
2	1 to 7	Sonar performance	Yes	
3	1,3	Hull strength (survivability)	Yes	
4	1,2,3,5	Top speed		Yes
5	1,3	Endurance	Yes	
6	1,2,3,4,5,8	Acoustic signature	Yes	
7	3,5	Complement	Yes	
8	1 to 8	Land attack capability	Yes	
9	1 to 8	Capability dependencies	Yes (with risks)	
Current forecast (with risks)			8 (1)	1
Last year's forecast (with risks)			8 (1)	1

D.3.1.2 Key Performance Measures Variation

Date	Key Performance Measure	Category	Reason for Variation
Historic	Capability dependencies	Technical Factors	Limited suitably qualified and experienced personnel available to commission the support facilities.
Historic	Top Speed	Technical Factors	To date initial trials in Boat 1 have been deliberately constrained but unrestricted trials will be conducted prior to Operational Handover.

D.3.1.3 Operational Impact of variation

D.3.2 Astute Boat 4

D.3.2.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	1,2,4,5,6,7,8	Intelligence and Surveillance	Yes	
2	1,2,3,4,5,8	Interoperability	Yes (with risks)	
3	1,2,3,4,5,6,8	Sustained Global Reach	Yes	
4	1 to 8	Theatre Mobility	Yes	
5	1 to 8	Mission Flexibility	Yes	
6	1 to 8	Force and Power Projection	Yes	
7	1 to 8	Battlespace Dominance	Yes (with risks)	
8	1,2,3,5,8	Survivability	Yes (with risks)	
9	1 to 5	Generation	Yes	
10	1,3,8	Through Life Adaptability	Yes	
Current forecast (with risks)			10 (3)	0
Last year's forecast (with risks)			10 (4)	0

D.3.2.2 Key Performance Measures variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	Intelligence and Surveillance	Technical Factors	Communication and Radar integrated solution are now funded and in the Boat 4 baseline.
Historic	Intelligence and Surveillance	Technical Factors	Technical challenges with installing Communication and Radar Electronic Support Measures (CESM and RESM) capability.
Historic	Interoperability Battlespace Dominance Survivability	Technical Factors	Since last years report, funding has been provided for the Spearfish Upgrade. Funding approval from HM Treasury for both the Naval Extremely/Super High Frequency Satcom Terminal and Astute Capability Sustainment Programme projects remain outstanding.
Historic	Interoperability	Technical Factors	Three complementary projects (Naval Extremely/Super High Frequency Satcom Terminal, Spearfish Upgrade and Astute Capability Sustainment Programme) are still awaiting HM Treasury approval to proceed placing 3 Astute Boat 4 Key Performance Measure at risk.

Historic	Battlespace Dominance	Technical Factors	Three complementary projects (Naval Extremely/Super High Frequency Satcom Terminal, Spearfish Upgrade and Astute Capability Sustainment Programme) are still awaiting HM Treasury approval to proceed placing 3 Astute Boat 4 Key Performance Measures at risk.
Historic	Survivability	Technical Factors	Three complementary projects (Naval Extremely/Super High Frequency Satcom Terminal, Spearfish Upgrade and Astute Capability Sustainment Programme) are still awaiting HM Treasury approval to proceed placing 3 Astute Boat 4 Key Performance Measures at risk.

D.3.2.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
March 2012	2,7,8	At Risk	Without resolution there could be reduced operational effectiveness, employability and survivability against more capable threats.

D.3.3 Astute Boat 5

D.3.3.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	1,2,4,5,6,7,8	Intelligence and Surveillance	Yes	
2	1,2,3,4,5,8	Interoperability	Yes (with risks)	
3	1,2,3,4,5,6,8	Sustained Global Reach	Yes	
4	1 to 8	Theatre Mobility	Yes	
5	1 to 8	Mission Flexibility	Yes	
6	1 to 8	Force and Power Projection	Yes	
7	1 to 8	Battlespace Dominance	Yes (with risks)	
8	1,2,3,5,8	Survivability	Yes (with risks)	
9	1 to 5	Generation	Yes	
10	1,3,8	Through Life Adaptability	Yes	
Current forecast (with risks)			10 (3)	0
Last year's forecast (with risks)			N/A	N/A

D.3.3.2 Key Performance Measures variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	Interoperability	Technical Factors	Naval Extremely/Super High Frequency Satcom Terminal approved by HM Treasury (December 2011), Astute Capability Sustainment Programme still awaiting HM Treasury approval to proceed, however even though some elements are being pursued separately, three Astute Boat 4 Key Performance Measures still remain at risk for Boat 5.
March 2012	Battlespace Dominance	Technical Factors	Naval Extremely/Super High Frequency Satcom Terminal approved by HM Treasury (December 2011), Astute Capability Sustainment Programme still awaiting HM Treasury approval to proceed, however even though some elements are being pursued separately, three Astute Boat 4 Key Performance Measures still remain at risk for Boat 5.
March 2012	Survivability	Technical Factors	Naval Extremely/Super High Frequency Satcom Terminal approved by HM Treasury (December 2011), Astute Capability Sustainment Programme still awaiting HM Treasury approval to proceed, however even though some elements are being pursued separately, three Astute Boat 4 Key Performance Measures still remain at risk for Boat 5.

D.3.3.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
March 2012	2,7,8	At Risk	Without resolution there could be reduced operational effectiveness, employability and survivability against more capable threats.

Project Title		
Beyond Visual Range Air-to-Air Missile		
Team Responsible		
Beyond Visual Range Air-to-Air Missile		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Air Commodore Simon Rochelle (Deep Target Attack Capability)	27th April 2012	
Project/Increment Name	**Current Status of Projects /**	
Beyond Visual Range Air-to-Air Missile	Post-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

The Beyond Visual Range Air-to-Air Missile system (the selected equipment is the Meteor system) will provide Typhoon with the capability to combat projected air-to-air threats and sustain air superiority throughout the life of the aircraft. The integration of Meteor onto Typhoon forms part of the project, with a current approved Initial Operating Capability of 2015

Until Meteor is integrated, Typhoon will be armed with the Advanced Medium Range Air-to-Air Missile, acquired from Raytheon Missile Systems.

Key features of the Beyond Visual Range Air-to-Air Missile requirement include stealthy launch, enhanced kinematics (giving increased stand-off and disengagement ranges, a better ability to engage and destroy highly agile manoeuvring targets), a large no-escape zone and robust performance against countermeasures.

A.2 The Assessment Phase

On 2 October 1995, Minister (Defence Procurement) gave approval for the issue of an Invitation to Tender for Beyond Visual Range Air-to-Air Missile. The Invitation to Tender was issued on 5 December 1995. Two bids were received; one from a consortium led by Matra BAe Dynamics UK Ltd (now MBDA UK ltd), and one from Raytheon Systems Ltd. After extensive analysis, it was decided that both bids contained areas of risk that needed to be addressed before a development and production contract could be placed. In May 1997, a Project Definition & Risk reduction phase was approved and contracts were placed on both bidders for a period of one year, with results to be technically and operationally assessed before a final decision was made. Both Project Definition & Risk reduction contracts were let in August 1997 and revised bids were received in May 1998. Due to the complexity of the Beyond Visual Range Air-to-Air Missile assessment, the need to accommodate the requirements of the Prospective Partner Nations and the need to go for 'Best and Final' Offers (primarily as a result of a French request to join the programme), Main Gate Approval was not achieved until May 2000. In his statement to the House of Commons on 16 May 2000, the Secretary of State announced that the Matra BAe Dynamics Meteor missile had been selected.

A.3 Project History since Main Gate

The contract for the demonstration, manufacture and support of Meteor was placed with MBDA UK Ltd on 23 December 2002. To date, the UK, Spain, France, Sweden and Italy have committed to production.

A programme of early integration work on Typhoon (CP270) was begun in July 2009.

A.4 In-year Progress

The Meteor programme is now progressing towards the end of the Demonstration phase, marked by the six-nation signature of the Certificate of Design scheduled for the latter part of 2012.

The CP270 early integration work continues to progress on schedule, and will end with an aerial firing of the missile from a Typhoon in the latter part of 2012.

However, the delivery of the full integration programme outturn is dependent on the completion of the Typhoon Future Capability Programme 1. This has now been delayed until late 2013, meaning that Industry cannot now develop and validate Meteor capability until late 2016, which supports a likely In Service Date 2 declaration in October 2017. This is based upon the current Industry Meteor Integration draft Bid schedule. However, this date cannot be confirmed until a formal rescheduling of the precursor Typhoon work and the Meteor/Typhoon integration programme has been completed, at which point a Review Note will be submitted to the Investment Approvals Committee for endorsement.

A.5 Capability Risks

The Meteor capability is required to replace the current AIM-120 Advanced Medium Range Air to Air Missile whose capability falls significantly below that of Meteor. The procurement of the Advanced Medium Range Air to Air Missile was a temporary solution to provide Typhoon's anti-air capability for the period between Typhoon Operational Employment Date and Meteor In-Service Date. Whilst the continued use of the Advanced Medium Range Air to Air Missile is not expected to affect peacetime air policing, the survivability and capability of Typhoon in almost all operational roles will be compromised by non-delivery of Meteor. It will also necessitate an extension to the life of existing Advanced Medium Range Air to Air Missile missiles beyond the currently supported date, and will introduce a risk that stock levels will be insufficient to meet the operational needs.

Given the Meteor integration slip, there is a need to address any gap in the Advanced Medium Range Air to Air Missile capability.

A.6 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
Typhoon Future Capability Programme 2	October 2017	Concept Phase

A.7 Procurement Strategy

Project / Increment Title	Contractor	Contract Scope	Contract Type	Procurement Route
Beyond Visual Range Air-to-Air Missile	MBDA UK (Meteor)	Demonstration (all six nations) and Manufacture (United Kingdom, France, Spain and Sweden at present)	Firm price up to June 2007 (Demonstration), Firm Price up to June 2006 (Manufacture), Fixed Price thereafter subject to Variation of Price.	Competitive - International
Advanced Medium Range Air-to-Air Missile	Raytheon Missile Systems ((Advanced Medium Range Air-to-Air Missile)	Manufacture to In Service	Firm Price	Non-Competitive - International

A.8 Support Strategy

Description
It is intended that Meteor will be supported through Contractor Logistic Support arrangements, covering Post Design Services, Repairs and Surveillance and Life Extension and will be submitted to the approval authorities during 2012 to allow them to be in place before the first production deliveries of missiles containing energetics.

Enter Text Here

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Beyond Visual Range Air-to-Air Missile	14	20	+6	1%	2%
Total (£m)	**14**	**20**	**+6**	**1%**	**2%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Beyond Visual Range Air-to-Air Missile	1098	1136	1249

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Beyond Visual Range Air-to-Air Missile	1136	1122	-14	+7
Total (£m)	**1136**	**1122**	**-14**	**+7**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.1.1 Beyond Visual Range Air-to-Air Missile

Date	Variation (£m)	Category	Reason for Variation
March 2012	+1	Exchange Rate	Change in Euro and Krona exchange rates (+£1m)
June 2011	-10	Technical Factors	Reassessment of Variation of Price for the Production milestones in the Meteor Prime Contract (-£3m). Over estimated Memorandum of Understanding provision to complete Development programme (-£2m).Estimated cost to complete the Development trials reduced with completion of trials programme expected by July 2012 (-£5m).
June 2011	+6	Accounting Adjustments and Re-definitions	Effect of VAT increase from 17.5% to 20% on Meteor Prime Contract (+£6m).

June 2011	+11	Exchange Rate	Change in Euro and Krona exchange rates on Meteor Prime Contract (£+11m)
April 2011	-1	Procurement Processes - International Collaboration	Benefit of Meteor Partner Nations sharing liability on common Guided Firing Trials requirements (-£1m)
Historic	+1	Exchange Rate	Change in Euro and Krona exchange rate on Meteor Prime Contract (+£1m).
Historic	+14	Technical Factors	UK share to support extended Development Guided Firing Programme (+£8m), UK specific requirements (+£4m), Additional common Memorandum of Understanding requirement to support the Development programme (+£2m)
Historic	-2	Procurement Processes - International Collaboration	Benefit of Meteor Partner Nation committing to a Production order and related Production Pre Investment (-£2m).
Historic	+1	Accounting Adjustments and Re-definitions	Effect of VAT increase from 17.5% to 20% on Meteor Prime Contract (+£1m).
Historic	-3	Procurement Processes - International Collaboration	Benefit of Meteor Partner Nation committing to a Production order and related Production Pre Investment (-£3m).
Historic	-2	Procurement Processes - International Collaboration	Benefit of Meteor Partner Nation committing to a Production order and related Production Pre Investment (-£2m).
Historic	-2	Procurement Processes - International Collaboration	Benefit of Meteor Partner Nation committing to a Production order and related Production Pre Investment (-£2m).
Historic	-6	Changed Capability Requirements	Adjustment to Meteor Production requirements (-£6m).
Historic	-40	Accounting Adjustments and Re-definitions	Removal of Cost of Capital due to Clear Line of Sight policy implemented by HM Treasury (-£40m).
Historic	-13	Technical Factors	Re-assessment of Meteor Integration (-£4m). Re-assessment in UK Technical Support / GFE (-£8m).

Historic	-2	Accounting Adjustments and Re-definitions	Benefit of achieving Prime Contract Milestones at reduced VAT rate (-£2m).
Historic	+23	Exchange Rate	Change in Euro and Krona exchange rate on Meteor Prime Contract (+22m). Revaluation of foreign currency assumptions on provision of Target service in support of Meteor Firing trials (+1m).
Historic	+3	Exchange Rate	Change in Euro exchange rate on Meteor Prime Contract (+3m)
Historic	+8	Accounting Adjustments and Re-definitions	Change in assumption in regard to recovery of VAT (+£9m), Derivation of approved cost on resource basis (-£4m), Correction of treatment in Contracted Out Services VAT from previous years to align with Main Gate Approval (+£3m)
Historic	+59	Budgetary Factors	Container Development (+£1m). Container Production (+£1m). Support to Typhoon Integration (+£2m). Revised deliveries of Meteor Missiles (+£12m). Container Logistics Support for Meteor (+£7m). Production Investment (+£1m). Trial Ranger (+£11m). Increase in Unit Production Cost for Advanced Medium Range Air-to-Air Missile missiles (MPR03 +£25m; MPR04 +£15m). Surveillance Spares for Advanced Medium Range Air-to-Air Missile (+£1m). UK share of Government Furnished Equipment (+£6m). Decrease for Service Evaluation Trials for Meteor (-£7m). Integration of Meteor onto Typhoon (-£9m), Production of Meteor Telemetred Operational Missiles (-£1m), In Service Reliability Demonstration support (£-3m). Meteor Technical Support (-£2m). Miscellaneous Meteor Items (-£1m).

Historic	-131	Budgetary Factors	In consultation with the customer the decision has been taken to examine capability trade-offs while Realignment and Integration proposals are being matured and assessed against the requirement (-£36m). Effect of Equipment Planning 05 Options: reduce Meteor numbers (-£55m), decision taken not to upgrade AIM-120B Advanced Medium Range Air-to-Air Missiles to C-standard (-£65m). Re-costing of UK Technical Support requirements in addition to Memorandum Of Understanding commitments (+£3m). Re-costing of Meteor Integration (-£1m). Increases for Insensitive Munitions (+£9m). Missiles & Ancillary Equipment in Support of Typhoon Integration (+£6m). Surveillance & Life Extension (+£5m). Initial Spares (+£3m).
Historic	-120	Changed Capability Requirements	UK share of additional common requirement (+£2m), additional requirement for Dual Date Link (+£6m), additional containers required for Meteor (+£2m), refurbishment of existing Advanced Medium Range Air-to-Air Missiles (-£16m). Re-costing of Meteor Missile Additional Acquisition (-£2m). Reduction in missile numbers to minimum contractual commitments (-£53m). Reassessment of In Service Evaluation Trials for Meteor (-£19m). Re-assessment of Meteor Integration (-£40m).
Historic	+55	Change in Associated Project	UK support to Development Guided Firing campaign on Gripen (+£6m). UK support to Tornado F3 Alternative trials platform (+£3m). UK share of “Realignment” programme due to the non-availability of Typhoon aircraft for Meteor Development Trials programme (+£46m).

Historic	-8	Procurement Processes	UK's share of MBDA revalidation of prices caused by delay in contract placement (+£6m). Revalidation to reflect prices within Advanced Medium Range Air-to-Air Missile contract (-£14m)
Historic	+30	Exchange Rate	Change in Euro exchange rate on Meteor prime (+£29m). Change in Dollar exchange rate on Advanced Medium Range Air-to-Air Missile (-£11m). Revaluation of foreign currency assumptions on current and future Advanced Medium Range Air-to-Air Missile contracts (+£9m). Revaluation of foreign currency assumptions on Meteor Prime Contract (+£3m).
Historic	-31	Procurement Processes	Revaluation of UK's share of Government Furnished Equipment/ Government Furnished Facilities requirements (-£20m). Additional funding required for integration of AIM-120C Advanced Medium Range Air-to-Air Missiles onto Typhoon (+£82m). Gripen Trial (+£2m). Realism measure on funding for integration of AIM-120C Advanced Medium Range Air-to-Air Missiles onto Typhoon (-£65m). Decrease in UK's share of Development (-£30m).

Historic	+145	Procurement Processes	Increase of UK's share of development through transfer of work share from Germany (+£31m) and UK share of Government Furnished Equipment (+£1m). UK share of Memorandum Of Understanding Technical Support requirements (+£2m). UK share of Memorandum Of Understanding Government Furnished Equipment requirements (+£7m). Revised Variation of Price associated with deliveries of Meteor Missiles (+£27m). Reduction in technical support to Advanced Medium Range Air-to-Air Missile (-£5m). Prime Contractor supporting Typhoon Integration Programme (+£20m). UK contractual commitment to pre-production activities (+£5m). Cost associated with UK's contractual commitment to minimum Production quantities (+£57m).
Net Variation (£m)	**-14**		

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

Project/ Increment Title	Category	Explanation
Beyond Visual Range Air-to-Air Missile	Procurement Processes - International Collaboration	Changes do no affect quantity, quality or delivery of operational equipment.

B.4 Progress against approved Support / PFI Cost

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	20	0	20
Demonstration and Manufacture Phase	695	50	745
Support Phase / PFI Cost	0	0	0
Total Expenditure	**715**	**50**	**765**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase (months)
Beyond Visual Range Air-to-Air Missile	October 1995	May 2000	55

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Approved	Budgeted For	Latest Approved
Beyond Visual Range Air-to-Air Missile (Original In-Service Date)	June 2010	September 2011	August 2012
Beyond Visual Range Air-to-Air Missile (In-Service Date 1)		August 2012	
Beyond Visual Range Air-to-Air Missile (In-Service Date 2)	February 2015	July 2015	July 2015

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Beyond Visual Range Air-to-Air Missile (Original In-Service Date)	**Original In-Service Date Definition:** Achievement of an operational capability with (CONF)*** missiles and supporting infrastructure. At MPR 2007 forecast In-Service Date was August 2013, against the approved In-Service Date at Main Gate of August 2012. The In-Service Date definition was redefined in 2008, following a review of the programme to reflect a two-stage approach to delivering the capability, as follows:
Beyond Visual Range Air-to-Air Missile (In-Service Date 1)	**In-Service Date 1:** (Platform Ready): A fully developed missile standard ready for delivery and platform integration, having demonstrated achievement of In-Service Date 1 Key Performance Measures
Beyond Visual Range Air-to-Air Missile (In-Service Date 2)	**In-Service Date 2: Initial Operating Capability** (Typhoon Meteor Capability): The first Front Line Unit is declared Operational with at least (CONF)*** missiles and having demonstrated achievement of In-Service Date 2 Key Performance Measures.

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Beyond Visual Range Air-to-Air Missile (Original In-Service Date)	September 2011	August 2013	+23	0
Beyond Visual Range Air-to-Air Missile (In-Service Date 1)	August 2012	November 2012	+3	0
Beyond Visual Range Air-to-Air Missile (In-Service Date 2)	July 2015	June 2017	+23	+23

C.3.3 Timescale variation

C.3.3.1 Beyond Visual Range Air-to-Air Missile (Original In-Service Date)

Date	Variation (+/- months)	Category	Reason for Variation
Historic	+15	Change in Associated Project	Typhoon integration delays cannot be absorbed and uncertainty over Typhoon Future Capability Programme (+15 months).
Historic	+8	Procurement Processes	Slippage caused by delays in placing contract (+11 months). Reassessment of opportunities arising from Meteor Realignment activities, to reduce the duration of firing trial campaigns and to de-risk transition from Demonstration to Production phases (-3 months).
Net Variation (+/- months)	+23		

C.3.3.2 Beyond Visual Range Air-to-Air Missile (In-Service Date 1)

Date	Variation (+/- months)	Category	Reason for Variation
Historic	+3	Technical Factors	A supplier design change delayed the start of qualification (+3 months).
Net Variation (+/- months)	+3		

C.3.3.3 Beyond Visual Range Air-to-Air Missile (In-Service Date 2)

Date	Variation (+/- months)	Category	Reason for Variation
March 2012	+23	Change in Associated Project	Slippage of precursor Typhoon Future Cability Programme 1 and associated radar enhancement work (+23 months).
Net Variation (+/- months)	+23		

C.3.4 Other costs / savings resulting from timescale variation

Project/Increment Title	Date	£m (+ Cost / - Saving)	Category	Reason for expenditure or saving
Beyond Visual Range Air-to-Air Missile	Historic	+5	Change in Associated Project	Extension to the life of the current Advanced Medium Range Air-to-Air Missile variant until integration of Meteor onto Typhoon is achieved (+£5m).
Total		**+5**		

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

Project/Increment Title	Operational Impact
Beyond Visual Range Air-to-Air Missile	Extended reliance on the current AIM-120 Advanced Medium Range Air-to-Air Missile. The capability of the latter falls significantly below that of Meteor: its procurement was a temporary solution to provide Typhoon with an anti-air capability for the period between Typhoon Operational Employment Date and Meteor In-Service Date. Whilst the In-Service Date delay is not expected to affect peacetime air policing, the survivability and capability of Typhoon in almost all operational roles would be compromised by an extended delay. A staged transfer from Advanced Medium Range Air-to-Air Missile to Meteor is necessary owing to the latter's delivery profile, and hence use of Advanced Medium Air-to-Air Missile by Typhoon extends beyond Meteor In-Service Date. There is some risk that part of the Advanced Medium Range Air-to-Air Missile stocks will not endure until the revised In-Service Date and hence we may fall below the minimum required stockpile liability, although this cannot be confirmed at present.

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Beyond Visual Range Air-to-Air Missile	The full exploitation of the Meteor capabilities by the Typhoon platform. This includes a two way datalink, a full six-missile fit and the full use of Meteor symbology and cockpit functionality	The option of proceeding to Full Operating Capability will be considered in due course in the light of further threat analysis.

C.5. Support / PFI Contract

D Section D: Performance

D.1. Sentinel Score

Current score	Last years score	Comments
49% RED	69% AMBER	Deterioration caused by delay to In-Service Date 2 as result of the slippage of precursor Typhoon work.

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	Integrated Meteor missile, support equipment	Yes	
2. Training	Industry led training for in-service users	Yes	
3. Logistics	Industrial support for in-service use	Yes	
4. Infrastructure	Defence Estate prepared to support	Yes	
5. Personnel	Supply of sufficient qualified personnel	Yes	
6. Doctrine	Principles for capability employment	Yes	
7. Organisation	Establishing organisational relationship	Yes	
8. Information	Identifying data, information, knowledge	Yes	
Current forecast (with risks)		8 (0)	0
Last year's forecast (with risks)		8 (1)	0

D.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Equipment	Technical Factors	Progress on development programme now gives no reason to doubt that Certificate of Design will be signed in a timely manner.
Historic	Equipment	Technical Factors	Combination of the declared in-year slip (see Section C.3.3.2.) and the risk of further delays in the final stages of the development programme which will prevent timely signature of the Certificate of Design and thus ability to accept deliveries.

D.3. Performance against Key Performance Measures

D.3.1 Beyond Visual Range Air-to-Air Missile

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Information	Multiple Target Capability	Yes	
2	Doctrine	Kill Probability	Yes	
3	Doctrine	Enhanced Typhoon Survivability	Yes	
4	Equipment	Typhoon Compatibility	Yes	
5	Logistics	Minimum Air Carriage Life	Yes	
6	Logistics	Reliability	Yes	
7	Logistics	Support	Yes	
Current forecast (with risks)			7 (0)	0
Last year's forecast (with risks)			7 (0)	0

D.3.1.2 Key Performance Measures Variation

D.3.1.3 Operational Impact of variation

D.4 Support Contract

Project Title		
Chinook New Buy		
Team Responsible		
Chinook Project Team		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Commodore Wayne Keble (Air and Littoral Manoeuvre Capability)	01 February 2011	01 March 2013
Project/Increment Name	**Current Status of Projects / Increments**	
Chinook New Buy Julius	Post-Main Investment Decision Decision	

A. Section A: The Project

A.1 The Requirement

The UK currently has a fleet of 46 Chinook, delivered between 1981 and 2001.

Project New Buy:
The new Rotary Wing Strategy, announced by the Secretary of State in December 2009, established that the Future Heavy Lift capability would be provided by the Chinook helicopter. The Rotary Wing Strategy set out the intention to buy an additional 22 new Chinook, in addition to the replacement for the two aircraft destroyed on operations in Afghanistan in August 2009 (for which approval will be sought through the HM Treasury Reserve), that would take the Chinook fleet upto 70 aircraft.

Operational Analysis has routinely identified the unique strength of capability provided by Chinook. The most recent Lift Advanced Concept Phase 3 analysis provides clear evidence of the need for a greater number of Chinook helicopters. However, Operational Analysis has not identified an obvious blend of helicopter types that is affordable, cost-effective, and which meets all our helicopter requirements. Chinook delivers more capability for a given investment than smaller types, and hence the earlier this rebalancing can occur, the faster overall UK helicopter capability can be increased.

In Sept 2010 the Strategic Defence and Security Review reduced the requirement to 14 aircraft (12+ 2 attrition aircraft to replace those lost in Afghanistan in 2009).

Project JULIUS:
An Urgent Operational Requirement was introduced in 2002 to enhance the operational capability of the Chinook during night-time operations in Iraq. The Night Enhancement Package was fitted to eight Chinook Mk2/2A aircraft, and was intended to fill a short-term gap until the introduction of the delayed Chinook Mk3 to provide heavy-lift helicopter capability specifically for Special Forces.

In September 2004 a "Fix-to-Field" project for the eight Chinook Mk3 aircraft commenced. The proposed solution to meet the Special Forces requirement was to modify the cockpit display systems, together with integration of special operations equipment and a comprehensive Defensive Aids Suite.

In June 2005, under the auspice of the Future Rotorcraft Capability programme, a Land Advanced Concept Phase was initiated to determine the most cost-effective and balanced fleet of future rotorcraft lift platforms. Subsequently, it was decided to adopt an incremental approval strategy; Increment 2 presented options to address the balance of Special Forces heavy lift requirement. It was assumed that Fix-to-Field would still deliver eight Mk3 Special Forces aircraft.

In March 2007 the Fix-to-Field project was cancelled in favour of a project to revert the Chinook Mk3 aircraft to a standard similar as the Mk2/2A. The imperative was to make helicopters available for operations in Afghanistan as quickly as possible.

The JULIUS project was therefore conceived to modify eight Chinook Mk2/2A aircraft and convert them from a Support Helicopter standard into a Special Forces variant, to be designated Mk4/4A. The main changes to the aircraft were to be the incorporation of an integrated glass cockpit, moving map tablet and a crewman's workstation. The Joint Capabilities Board later decided to increase the flexibility of the current Chinook fleet by moving to fit all of the fleet with the JULIUS modification, to deliver a 48 aircraft coherent fleet, so that aircraft could more easily 'swing role' between Special Forces and Support Helicopter tasks, thus obviating the need to acquire the additional six aircraft for Special Forces that had been planned under Land Advanced Concept Phase Increment 2.

A.2 The Assessment Phase

Project New Buy:

In March 2010 Initial Gate approval for the Chinook New Buy project was granted to conduct an Assessment Phase at a total cost of £67M (50% confidence). This funding approval assumed that a Main Gate Business Case would be presented in December 2010, and that a Demonstration and Manufacture contract would be placed shortly thereafter.

In May 2010 the Investment Approvals Board endorsed a Review Note to down-select to a preferred configuration for the new Chinooks. The configuration selected was the CH-47F equipped with a development of the Thales JULIUS cockpit and a digital automatic flight control system and current UK Chinook Theatre Entry Standard modifications.

In January 2011, subsequent to Strategic Defence and Security Review announcements, and the delay to a Main Gate decision for New Buy Chinook, a Review Note was submitted to the Investment Approvals Board seeking an uplift of £29M to the approval to sustain critical path activity and protect all delivery options to the end of May 2011. However, the Investment Approvals Board only approved an uplift of £6.5M to fund programme activity to the end of March 2011 and requested further advice in early March, assuming the Defence Board and Ministers had determined the way forward on Chinook in the context of the wider Planning Round.

In April 2011 the Department's latest financial plan captured the Defence Board's direction to pursue a 14 Chinook aircraft programme that would see the first flight in Quarter one of 2013 and all aircraft delivered by end of 2015. HM Treasury approved an Investment Approvals Board uplift to the Assessment Phase of £23.4M.

In July 2011 a further uplift of £47.1M, to extend the Assessment Phase to October 2011, was approved. However, subsequently HM Treasury approved the Main Gate Business Case on the 20th July 2011. Key milestones were approved as follows: Entry into Service of one aircraft delivered to the UK with an Interim Release to Service in May 2014; an Initial Operating Capability of three aircraft available for worldwide deployment in January 2015.

Project JULIUS:

In November 2007 HMT declined to fund the modification programme from the Conflict Prevention Fund and the Joint Capabilities Board decided that the Urgent Operational Requirement should be departmentally funded.

In April 2008 the JULIUS project was formally initiated and a sole-source procurement strategy for eight aircraft was endorsed with Boeing as prime contractor using Thales cockpit displays.

In December 2008 the Main Gate Business Case to modify eight aircraft to the JULIUS standard was approved. The Initial Operating Capability was defined as two aircraft available for deployment at the required capability with all Defence Lines of Development in place including simulator, out of four aircraft delivered, by September 2011 (50% confidence level).

A.3 Project History since Main Gate

Project New Buy:
A full firm price Demonstration and Manufacture contract was signed with Boeing on the 29th July 2011.

In September 2011 the Platform Critical Design Review was successfully passed. Completing the Review was a major milestone towards achieving an agreed design baseline and providing assurance that the project was on-track.

In March 2012 the cabin and aft structures for the first aircraft (tail number ZK550) were built and the aircraft moved to final assembly.

A senior Boeing/MoD independent programme review took place in March 2012 and concluded that there were additional risks surrounding the integration of the Digital Auto Flight Control System and that the flight test schedule, whilst adequate in flying hours, provides limited scope in programme timescale to address any issues identified during flight test. As a consequence, we have now declared a delay in Entry into Service of six months to November 2014 to accommodate these additional risks.

Project JULIUS:
A Demonstration and Manufacture contract was placed on 29th January 2009 with Boeing as the Prime Contractor, and based on the Thales 'Top Deck' glass cockpit solution. The Through-Life Customer Support partnering contract with Boeing was used as the tasking arrangement.

In July 2009 the Main Gate Business Case to modify the rest of the Chinook fleet (remaining 40 aircraft at the time) was approved.

In August 2009 two Chinook aircraft were destroyed on operations in Afghanistan. Rather than reduce the JULIUS approval by two aircraft sets, the subsequent New Buy approval was abated by the same amount.

In June 2011, during Test and Evaluation, issues with software, firmware and Electromagnetic Compatibility surfaced that necessitated a forecast delay of three months to Initial Operating Capability. The 50% confidence date was now reported as December 2011.

In August the JULIUS 8 and 40 projects were merged, and going forward project performance will be reported against Julius as a whole.

In October 2011 a reappraisal of technical risks and delivery timescales concluded that a further design iteration was required. Consequently, an intense period of rig and flight testing began to resolve the following primary issues: Vertical Speed Indicators (VSI) Analogue to Digital Conversion; Electromagnetic Compatibility of the Multi Function Displays; and Mission Management System functionality. The Initial Operating Capability was forecast to be delayed to May 2012.

In March 2012 an issue with how the aircraft's height relative to the surrounding terrain is displayed in the cockpit emerged during Release to Service activity. Consequently, the forecast for Initial Operating Capability was delayed by a further 11 months, to April 2013.

A.4 In-year Progress

Project New Buy:

Key scheduled activities have been completed, including: delivery of software releases from Thales; Government Furnished Assets Working Group held; Test and Evaluation Working Groups held in preparation for the Test Readiness Review. Aircraft continue to be built on the production line. As of the end of May 2012, Aircraft 4 was at the Cabin Cockpit Splice stage and Aircraft 3 Cabin had been painted.

Project JULIUS:

The Mk 4 Release to Service was signed by Assistant Chief of the Air Staff on the 11th May 2012, enabling aircrew to begin training on the aircraft. Aircrew training is underway to support operations and Initial Operating Capability was achieved on June 15th 2012, against the initial approval of September 2011. As of the end of May 2012, MOD had accepted 5 aircraft in total. The overarching project remains on schedule to meet its Full Operating Capability in October 2015.

A.5 Capability Risks

Project New Buy:

There is an urgent need to replace those aircraft recently lost on operations and to build MOD's CH-47 capability in theatre to allow for the withdrawal of Sea King Mk4. Further investment will be required to address obsolescence and sustain the Chinook fleet to the planned Out of Service Date of 2040.

Project JULIUS:

The requirement stemmed from the need to operate in Low Ambient Light Conditions in Afghanistan and addressing the safety and airworthiness concerns of the current Night Enhancement Package.

A.6 Associated Projects

A.7 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Procurement Route**			**Approval Status**
Chinook New Buy				
Julius				
Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Chinook New Buy	Boeing	Demonstration and Manufacture	Firm Price	Non-Competitive - International
Julius	Boeing	Demonstration and Manufacture	Firm Price	Non-Competitive - International

A.8 Support Strategy

Description
Since May 2006, the in-service Chinook fleet has been successfully supported through a spares-inclusive availability based contract with Boeing, known as Through-Life Customer Support. The second five-year pricing period of Through-Life Customer Support commenced in 2011. An amendment has been made to this contract to incrementally include the new standard of aircraft (Mk4) as the fleet changes configuration. An amendment will also be made to this contract to incrementally include the new aircraft (Mk6) as they enter the fleet. Through-Life Customer Support is the most cost-effective way of delivering support to Chinook and has consistently demonstrated Value for Money in line with increased operational output.

Support Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Through Life Customer Support (TLCS)	Boeing	Support	Target Cost Incentive Fee	Non-Competitive - International

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Chinook New Buy[1]	11	10	-1	1%	1%
Total (£m)	**11**	**10**	**-1**	**1%**	**1%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Chinook New Buy	796	841	891
Julius	256	280	309

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Chinook New Buy	841	841	0	0
Julius	280	280	+0	+0
Total (£m)	**1121**	**1121**	**+0**	**+0**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.4 Progress against approved Support / PFI Cost

Project/Increment Title	Approved Cost (£m)	Forecast cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Through Life Chinook Support	391	386	-5	-5
New Buy Support	84	84	+0	+0
Total (£m)	**475**	**470**	**-5**	**-5**

B.4.1 Cost variation against approved Support / PFI Cost

B.4.1.1 Through Life Chinook Support

Date	Variation (£m)	Category	Reason for Variation
March 2012	-5	Budgetary Factors	Through Life Customer Support PP2 (Pricing Period 2) risk not materialised in Year 1.
Net Variation (£m)	**-5**		

B.4.1.2 New Buy Support

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	10	0	10
Demonstration and Manufacture Phase	174	162	336
Support Phase / PFI Cost	0	62	62
Total Expenditure	**184**	**224**	**408**

[1] The Assessment phase cost reported is lower than that reported in Major Projects Report 2011. This is because when the Demonstration and Manufacture phase was approved, the approval included some money that was originally approved as part of the Assessment phase approval. These costs are now included at B.2 and B.3.

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase
Chinook New Buy	March 2010	July 2011	16

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Approved	Budgeted For	Latest Approved
Chinook New Buy	March 2014	May 2014	December 2014
Julius	June 2011	September 2011	March 2012

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Chinook New Buy	Entry Into Service is one aircraft delivered to the UK with an interim Release to Service.
Julius	2 aircraft available for deployment at the required capability with all Defence Lines of Development in place including simulator, out of 4 aircraft delivered.

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Chinook New Buy	May 2014	November 2014	6	6
Julius	September 2011	April 2013	19	19

C.3.3 Timescale variation

C.3.3.1 Chinook New Buy

Date	Variation (+/- months)	Category	Reason for Variation
March 2012	6	Technical Factors	A senior Boeing/MoD independent programme review identified additional risks surrounding the integration of Digital Auto Flight Control System and that the flight test schedule, whilst adequate in flying hours, provides limited scope in programme timescale to address any issues identified during flight test.
Net Variation (+/- months)	**6**		

C.3.3.2 Julius

Date	Variation (+/- months)	Category	Reason for Variation
June 2011	3	Technical Factors	Test & Evaluation issues (software, firmware and Electro Magnetic Compatibility)
October 2011	4	Technical Factors	Reappraisal of technical risks and delivery timescales
November 2011	1	Technical Factors	Reappraisal of technical risks and delivery timescales
March 2012	11	Technical Factors	Unable to provide the user sufficient confidence of a solution to how the aircraft's height relative to the surrounding terrain is displayed in the cockpit.
Net Variation (+/- months)	**19**		

C.3.4 Other costs / savings resulting from timescale variation

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

Project/Increment Title	Operational Impact
Chinook New Buy	Worldwide deployment of new aircraft will be delayed.
Julius	Crew conversion delayed for pre-deployment training for Afghanistan.

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Chinook New Buy	The delivery of 14 aircraft available for worldwide deployment to any theatre of operation	On-track
Julius	33 of the entire UK Chinook fleet fitted with Julius	On-track

C.5. Support / PFI Contract

C.5.1 Scope of Support / PFI Contract

Project/Increment Title	Scope
Chinook	Spares-inclusive availability based contract with Boeing.

C.5.2 Progress against approved Support / PFI Contract Go-Live Date

Project/Increment Title	Approved Date	Actual Date	Variation (+/- months)	In-year Variation (+/- months)
Chinook	May 2011	May 2011	0	0

C.5.2.1 Go-Live Date Variation

C.5.3 Progress against approved Support / PFI Contract End Date

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-year Variation (+/- months)
Through Life Chinook Support	March 2016	March 2016	0	
New Buy Support	March 2016	March 2016	0	

C.5.3.1 End of Contract Date Variation

D Section D: Performance

D.1. Sentinel Score

Project/ Increment Title	Current score	Last years score	Comments
Chinook New Buy	79	N/A	Joined population in January 2012
Julius	65	86	Initial Operating Capability date slippag

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	The provision of the Chinook Mk4 & Mk6 platform including all appropriate mission equipment needed to meet the Key User Requirements specified and endorsed by the MOD unified customer.	Yes (with risks)	
2. Training	The Chinook Training Solution will deliver appropriately qualified personnel, to allow Front Line Commands to generate the Force Elements at Readiness required for contingent tasks in accordance with the Force Commanders Plans.	Yes (with risks)	
3. Logistics	The logistics DLOD covers the provision of the logistics support solution required to sustain the Chinook Mk4 and Mk6 fleet capability until the OSD to a level specified in the Joint Business Agreement (JBA) with both Joint Helicopter Command. (JULIUS risk only)	Yes	
4. Infrastructure	The Infrastructure DLoD embraces the investment required in the UK MoD estate to deliver the infrastructure necessary to support Chinook capability, associated equipments and personnel.	Yes	
5. Personnel	The timely provision of sufficient, capable, trained, equipped and motivated personnel to deliver Defence outputs, both now and in the future for Chinook operations.	Yes	

6. Doctrine	The Concepts and Doctrine DLoD for Chinook Mk4 and Mk6 aircraft to Full Operational Capability is bounded by: the need to provide a timely, coherent and dynamic Concept of Use (CONUSE) for all Chinook marks; and devise and deliver relevant and updated tactical doctrine, including Tactics, Techniques and Procedures, for Chinook training and operational flying.	Yes	
7. Organisation	Establish an operational and non-operational organisational relationships of people for the Chinook force. It typically includes military force structures, MoD civilian organisational structures and Defence contractors providing support.	Yes	
8. Information	The Information DLOD is concerned with the contribution that data, information and knowledge make to Chinook operational capability.	Yes	
Current forecast (with risks)		8 (2)	0
Last year's forecast (with risks)		# (#)	#

D.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Equipment	Technical Factors	New Buy - DAS obsolescence issues; JULIUS - Technical issues may lead to a gradual delivery of capability.
March 2012	Training	Procurement Processes	New Buy - Staff resource holding up procurement of simulator.

D.3. Performance against Key Performance Measures

D.3.1 Chinook New Buy

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Equipment	Lift. The user requires the ability to conduct vertical lift operations to deploy and support joint forces, as operationally effective units, from land bases.	Yes	

2	Equipment	Operational Availability. The user shall be provided with a capability that is available for the required sustained level of operational effect throughout its expected life.	Yes (with risks)	
3	Equipment	Survivability. The user shall be able to deliver the required operational capability within a man-made hostile environment.	Yes (with risks)	
4	Equipment	Interoperability. The user shall be provided with a capability that can interoperate with relevant military and civil authorities.	Yes	
5	Equipment	Environmental. The user requires the capability to conduct operations in the defined natural and man made environmental conditions.	Yes	
6	Equipment	Operational Locations. The user shall be provided with a capability that can operate from land and sea bases.	Yes	
7	Logistics	Deployability. The user shall be provided with a capability that can be deployed to those areas of the world in which UK forces can be expected to operate.	Yes	
Current forecast (with risks)			7 (2)	0
Last year's forecast (with risks)			N/A	N/A

D.3.1.2 Key Performance Measures Variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	2. Availability	Budgetary Factors	Funding at risk for aircraft life sustainment programme.
March 2012	3. Survivability	Technical Factors	Obsolescence issues affecting Defence Aids fit for aircraft

D.3.1.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
March 2012	2. Availability	At Risk	Lack of aircraft numbers on Front Line
March 2012	3. Survivability	At Risk	Aircraft may be at risk in certain

D.3.2 Julius

D.3.2.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Equipment	Lift. The user requires a capability to insert, resupply, relocate and extract conventional & special forces, as operationally effective units, to and from target areas	Yes	
2	Equipment	Operational Availability. The user shall be provided with a capability that is available to sustain the required level of operational effect	Yes	

3	Equipment	Survivability. The user shall be able to deliver operational capability with a likelihood of survival within permissive, semi-permissive and non-permissive environments, commensurate with the operational context.	Yes	
4	Equipment	Interoperability. The user shall be provided with a capability that can operate with relevant military and civil authorities and organisations	Yes	
5	Equipment	Day/Night All Environment. The user shall have a capability that can operate within defined natural and man-made environmental conditions in order to conduct specified tasks.	Yes (with risks)	
6	Equipment	Operational Locations. The user shall be provided with a capability that can be operated from both land and sea bases.	Yes (with risks)	
7	Logistics	Deployability. The user requires a capability that can be strategically and tactically deployed world wide.	Yes	
Current forecast (with risks)			7 (2)	0
Last year's forecast (with risks)			N/A	N/A

D.3.2.2 Key Performance Measures variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	5. Environment	Technical Factors	Technical issues may delay full Low Light capability.
March 2012	6. Op Locations	Technical Factors	Awaiting read-across of ship clearances from other Marks.

D.3.2.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
March 2012	5. Environment	At Risk	Deployment to certain theatres may be delayed.
March 2012	6. Op Locations	At Risk	Nil - temporary clearances sought, with more Operational Risk held.

D.4 Support Contract

D.4.1 Chinook

D.4.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Equipment	Aircraft Available to the Authority for Operational and Training purposes on a daily basis. An Aircraft is not considered to be Available to the Authority when it has less than 3 flying hours available.	Yes (with risks)	
2	Logistics	Technical Support and Items, within the scope of this Partnering Agreement, provided to ensure that the Authority, with reasonable endeavours, is capable of maintaining 70% of the Authority held Aircraft Serviceable.	Yes	
Current forecast (with risks)			2 (1)	0
Last year's forecast (with risks)			N/A	N/A

D.4.1.2 Key Performance Measures variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	1. Availability	Technical Factors	Through Life Chinook Support is delivering, but availability of aircraft is impacted by JULIUS embodiment programme.

D.4.1.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
March 2012	1. Availability	At Risk	Lack of aircraft numbers on Front Line

Project Title		
Complex Weapons Pipeline		
Team Responsible		
Team Complex Weapons		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Air Commodore Simon Rochelle (Centre Managed Programmes)	27th April 2012	
Project/Increment Name	**Current Status of Projects /**	
Interim Main Gate 1	Post-Main Investment Decision	
Loitering Munitions	Post-Main Investment Decision	
Spear Capability 2 Block 1	Post-Main Investment Decision	
Spear Capability 2 Block 2	Pre-Main Investment Decision	
Spear Capability 3	Pre-Main Investment Decision	
Future Local Area Air Defence System	Pre-Main Investment Decision	
Interim Main Gate 2- Future Local Area Air Defence System	Post-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

The Team Complex Weapons initiative is based on meeting the UK's enduring requirement to have battle winning military capability through the use of Complex Weapons; to be assured that the weapons will perform as expected; and to retain the ability to develop leading edge Complex Weapons technologies.

Within this context, the initiative aims to deliver:

(a) Improved, adaptable and flexible Complex Weapons that can be shaped to meet current and future military capability needs;

(b) Freedom of Action and Operational Advantage in our Complex Weapons through a sustained indigenous industrial construct.

A.2 The Assessment Phase

The Assessment Phase

In April 2008 an Initial Gate submission was made to the Investment Approvals Board (IAB) for the Complex Weapons Sector. This was approved in June 2008. The Business Case sought approval to enter a non-competitive Assessment Phase (AP) with Team Complex Weapons. The Assesssment Phase was designed to test the viability of UK Sovereign acquisition of Complex Weapons (CW) through a modular and funding pipeline approach that offered greater value for money. This was consistent with the Defence Industrial Strategy (DIS) in maintaining operational sovereignty of UK Complex Weapons and sustaining UK industry's specialist capabilities.

Initial work considered a number of options, ranging from non-competitive based around Team Complex Weapons to full open competition. The options were assessed on their ability to meet military capability, operational sovereignty and value for money measured against the draft Concept of Analysis. The analysis strongly indicated that the continued use of competition would progressively erode the MoD's ability to secure affordable and effective military capability and restrict future choice and decision making.

A.3 Project History since Main Gate

The Team Complex Weapons (TCW) proposition is founded on the Defence Industrial Strategy (DIS) that set out the UK's intent to preserve operational sovereignty of its Complex Weapons. The first step in assessing the viability of a UK sovereign acquistion was a non competitive Assessment Phase which was approved by the Investment Approvals Board (Initial Gate June 2008). This covered risk reduction work to develop solutions to meet the Future Air to Surface Guided Weapon (FASGW), Loitering Munition; Stormshadow Capability Enhancement Programme (SSCEP); Future Local Area Air Defence System (FLAADS); and Selected Precision Effects at Range (SPEAR) programmes. Review Note 1 (March 2009) sought approval of a second tranche of money to continue the Assessment Phase and Review Note 2 (November 2009) sought approval for funds to conclude the Assessment Phase and to address the questions raised by the Investment Approvals Board (July/October 2009).
The Assessment Phase concluded that the preferred option was a long term partnering model based on bilateral arrangements with the Team Complex Weapons Prime Contractors.

With the Strategic Defence Review on the horizon Interim Main Gate 1 (March 2010) proposed entering into a shorter term Interim Portfolio Management Agreement (PMA-I) with MBDA UK. It also sought approval for expenditure to meet only immediate Complex Weapons requirements specifically:
Loitering Munition (Fireshadow) (Demonstration & Manufacture);
Selected Precision Effects at Range (SPEAR) Capability 2 Block 1 (Demonstration & Manufacture) (now Brimstone 2);
Future Local Area Air Defence System (FLAADS) (Assessment Phase);
Spear Capability 2 Block 2 (now Spiral Development) (Assessment Phase); and
Spear Capability 3 (Assessment Phase)

Interim Main Gate 2 was the second of three submissions which sought approval for the Demonstration Phase of the maritime element of the Future Local Area Air Defence System (Maritime). This was approved in principle by the Investment Approvals Committee in April 2011 and in December 2011 Director General Finance confirmed that it was affordable.

A.4 In-year Progress

Interim Main Gate 1
Loitering Munition - The Demonstration and Manufacture Phase of Fireshadow was approved by the Investment Approvals Board in April 2010 as part of the Complex Weapons Interim Main Gate 1 submission. It is intended that this will be demonstrated in 2012.

Spear Capability 2 Block 1 (Brimstone 2)
(i) Rocket Motor April 2011 - an issue identified. June - High level issues resolved. February 2012 Rocket motor failed qualification. Detailed investigations into failure begins
(ii) Tandem firing performance trials undertaken July/August 2011; outcome unsatisfactory. Discussions with company ongoing
(iii) Warhead gained Critical Design Review in December 2011
(iv) Telemetry firings in January/February 2012 (using legacy rocket motor). Analysis ongoing but indications that firings were successful

Spear Capability 2 Block 2

Planning Round 2011 Option to delete and decision to continue with Spear Capability 2 Spiral Development.

Spear Capability 3

(i) Request for Quotations (RFQ) for seekers released - February 2011
(ii) Initial discussions about demonstration and manufacture/integration issues with Typhoon - May 2011
(iii) Assessment Phase subsystem downselect, Concept Design Review and Phase 2 Gate Review completed - July 2011
(iv) MBDA commenced launcher study because BRU-61 launcher found to be incompatible with chilled airframe design - August 2011
(v) Warhead supplier recommendation endorsed by Portfolio Management Board; Systems Design Review Complete; BAE Systems under contract for Phase 1 of Airframe and Propulsion Flight Demonstration. Draft System Requirement Document issued - December 2011
(vi) Contract let with Hamilton Sunstrand for Turbojet Technical Assistance Agreement - January 2012

Interim Main Gate 2
Following Investment Approvals Board approval in April 2011, Future Local Area Air Defence System (Maritime) (now officially known as Sea Ceptor) Type 23 Demonstration Phase Contract was placed in December 2011. MBDA is the prime contractor with supporting non-prime elements provided by BAE Maritime Services, Qinetiq and Defence Science and Technology Laboratory (DSTL).
The Preliminary Design Review was held in February/March 2012 and its successful conclusion marks a major milestone.

Interim Main Gate 3 was the third of the submissions and concerned approval for the Future Anti-Surface Guided Weapon (Heavy) Demonstration and Manufacture Phase. The Business Case was presented to Equipment Capability Secretariat on 9 January 2012 and was considered by the Investment Approvals Committee on 18 January. On 31 January Director General Finance approved the case, with a caveat that negotiations should be concluded with France before 31 March 2012. Bi-laterals continued, but by 28 March when Chief Secretary to the Treasury(CST) wrote to the MoD, discussions had not been concluded and as such Chief Secretary to the Treasury approved the case, subject to receiving French national approval. Reflecting this caveated approvals position and the absence of a final negotiated position on the Future Anti Surface Guided Weapon (Heavy) Demonstration and Manufacture Phase, standard Major Projects report practice has been followed meaning that this project is not included in later sections of this report.

A.5 Capability Risks

Interim Main Gate 1

Selective Precision Effects at Range Capability 2 Block 1 (Spear Capability 2 Block 1) - Brimstone 2 - replaces the legacy Brimstone missile's energetics and airframe with a new Insensitive Munitions (IM) compliant warhead, rocket motor and an upgraded seeker and airframe. Spear Cap 2 Block 1 will replace the Dual Mode Seeker Brimstone (DMSB) capability currently in service with the Royal Air Force (RAF) and will be integrated onto Tornado GR4 and is intended for integration on Typhoon. Spear Capability 3 is a new 100kg class weapon. This capability will be the primary air-to-ground armament for the Joint Combat Aircraft (JCA)/F-35B Joint Strike Fighter from ***, and optimised for internal carriage. Spear Capability 3 will provide the means to destroy/defeat a wide range of targets at range, including mobile and re-locatable targets, in all weathers day and night, in complex environments under tight rules of engagements (ROE). The Indirect Fire Precision Attack (IFPA) programme will address the requirement to attack static and moving targets at various ranges. Within this, Loitering Munitions will focus on the most complex targets where man-in-the-loop capability is required in order to ensure mission success and minimise the potential for collateral damage.

Interim Main Gate 2

The Future Local Area Air Defence System (FLAADS) implementation will provide increased capability over Sea Wolf that addresses the capability shortfall identified in the 2009 Capability Above Water capability audits.

The Future Local Area Air Defence System solution is the only candidate to fill the capability gap that is both affordable and will meet the Key User Requirements (KURs) within the required timescales.

A.6 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
Tornado GR4	Brimstone 2 - Missile In Service Date - To Be Confirmed	In Service
Typhoon Future Capability Programme 2	Brimstone 2 - Typhoon Upgrade Programme – Missile In Service Date - To Be Confirmed	Pre-Main Gate
Joint Combat Aircraft	Spear Cap 3 - Expected prior to Joint Combat Aircraft Present Assumed Service Entry	Post Main Gate
Apache Helicopter	Spear Cap 2 Block 2 - ***	Concept Phase

A.7 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Procurement Route**			**Approval Status**
Spear Capability 2 Block 2	Non-Competitive - UK			Pre-Main Gate
Spear Capability 3	Non-Competitive - UK			Pre-Main Gate
Future Local Area Air Defence System	Non-Competitive - UK			Pre-Main Gate
Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Loitering Munitions	MBDA UK	Demonstration and Manufacture	Prime Contractor	Non-Competitive - UK
Spear Capability 2 Block 1	MBDA UK	Demonstration to Manufacture	Prime Contractor	Non-Competitive - UK
Interim Main Gate 2- Future Local Area Air Defence System	MBDA UK	Demonstration to Manufacture	Prime Contractor	Non-Competitive - UK

A.8 Support Strategy

Description
The current support approach is through individual contracts for each weapon type, e.g. Stormshadow, ASRAAM, etc. The intent in Interim Main Gate 1 was to secure a long term arrangement for In Service Support (ISS) under the Unified Support Environment (USE) with MBDA. The USE strategy has since been revised with the transfer of the explosives business stream of Joint Support Chain Services into Defence Equipment and Support (DE&S) Weapons Operating Centre (WOC) and will be taken forward under the wider transformation activity required to deliver efficiencies into this business. The most recent contract with MBDA (April 2011) for the Sea Viper In Service Support arrangement will provide the benefits afforded by the Portfolio Management Agreement (Interim) including gainshare, and has the potential to act as a catalyst for ISS transformation in the longer term.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
Unified Support Environment	MBDA UK Ltd	Manufacture to In Service	Prime Contractor	Non-Competitive - UK

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Complex Weapons Assessment Phase	239	236	-3	31%	30%
Interim Main Gate 1 Assessment Phase Elements	145	143	-2	60%	59%
Total (£m)	**384**	**379**	**-5**	**49%**	**48%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Interim Main Gate 1 Demonstration & Manufacture Elements	-	246	-
Loitering Munitions			
Spear Capability 2 Block 1			
Interim Main Gate 2- Future Local Area Air Defence System	-	541	-

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Interim Main Gate 1	246	243	-3	0
Loitering Munitions				
Spear Capability 2 Block 1				
Interim Main Gate 2- Future Local Area Air Defence System	541	540	-1	-1
Total (£m)	**787**	**783**	**-4**	**-1**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.1.1 Interim Main Gate 1

Date	Variation (£m)	Category	Reason for Variation
Historic	-3	Capability Trading	Loitering Munition and Spear Capability 2 Block 1 are both in the Demonstration & Manufacture phase and have a combined approval of £196M (£96m[1] + £100m). Spend on these two projects totals £243m giving a variance of +£47m. This would suggest that the Interim Main Gate 1 approval has been breached, however, in February 2009, prior to the Complex Weapons Pipeline approval, Team Complex Weapons received approval for Brimstone Insensitive Munition - £67m. The Project spent £17m on Brimstone Insensitive Munition and transferred the remainder (£50m) to Spear Capability 2 Block 1, to form part of the pipeline funding. When this additional approval is added to that in Interim Main Gate 1 (£196M) the combined approval is £246m. This gives overall approvals headroom of circa £3m.
Net Variation (£m)	**-3**		

B.3.1.2 Interim Main Gate 2- Future Local Area Air Defence System

Date	Variation (£m)	Category	Reason for Variation
March 2012	-1	Technical Factors	Interim Main Gate 2, £483m is committed via a firm price contract with MBDA. The remaining £58m is for Non-prime activities, that is Contracts let with companies other than MBDA. These Contracts will be raised over the remaining period of the project and will not necessarily be firm price agreements. As such these costs are subject to change and the Project's current forecast is that there will be a slight underspend against approval of £1m.
Net Variation (£m)	**-1**		

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	268	39	307
Demonstration and Manufacture Phase	82	156	238
Support Phase / PFI Cost	0	0	0
Total Expenditure	**350**	**195**	**545**

[1] The Major Projects Report states that the Department has spent £207 million on Loitering Munition. This is made up of £107 million spent against the approval of £96 million, which was noted in Interim Main Gate 1, and £100 million spent on Assessment phase activities.

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase
Complex Weapons	June 2008	April 2010	22

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Forecast/ Approved	Budgeted For	Latest Forecast/ Approved
Loitering Munitions		March 2012	
Spear Capability 2 Block 1	July 2012	October 2012	December 2012
Interim Main Gate 2- Future Local Area Air Defence System	July 2016	November 2016	May 2018

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Loitering Munitions	**Original definition:** The project will deliver 25 safe and useful munitions in March 2012 (50%). These will form a start-up capability for current operations. **MPR 2012 definition:** These definitions are not applicable yet given the incremental acquisition approach. In Service Date and Initial Operating Capability would likely occur in later increments and be subject to definition and approvals at an appropriate time. However, an initial batch of weapons systems was delivered, on time, in March 2012. These were demonstrated in June 2012 and while the success rate was lower than desired, performance of the hardware met the Loitering Munition key performance measures. **Reason for change:** The Senior Responsible Owner took a decision not to deploy the weapon for testing in Afghanistan as the capability was not sufficiently mature. It could therefore not meet its In-Service Date for use in Afghanistan so it has been re-defined.
Spear Capability 2 Block 1	200 missiles and six aircraft modified to operate them
Interim Main Gate 2- Future Local Area Air Defence System	In Service Date is the date on which there is sufficient evidence across all Defence Lines Of Development (DLODS) to allow the Front Line Command to take control of the system. More specifically, In Service Date is achieved with successful completion of acceptance activities which includes completion of the first Type 23 platform integration and trials, including firings. For Future Local Area Air Defence System Initial Operating Capability will coincide with the In Service Date.

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Loitering Munitions	March 2012	In-Service Date was not met	-	-
Spear Capability 2 Block 1	October 2012	February 2015	+28	+23
Interim Main Gate 2- Future Local Area Air Defence System	November 2016	November 2016	0	0

C.3.3 Timescale variation

C.3.3.1 Loitering Munitions

C.3.3.2 Spear Capability 2 Block 1

Date	Variation (+/- months)	Category	Reason for Variation
Historic	+5	Technical Factors	Technical issues with Warhead and Rocket Motor; reported in Interim Main Gate 2.
March 2012	+23	Technical Factors	Further technical issues with the Warhead and significant technical issues with Roxel manufactured Rocket Motor. A minor performance concession has been agreed to assist in resolving the technical issue with the Rocket Motor.
Net Variation (+/- months)	**+28**		

C.3.3.3 Interim Main Gate 2- Future Local Area Air Defence System

C.3.4 Other costs / savings resulting from timescale variation

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

Project/Increment Title	Operational Impact
Spear Capability 2 Block 1	To avoid an unacceptable operational impact arising from the In Service Date variation it is planned to deliver an IOC that will provide a fully functional Spear Capability 2 capability utilising current Spear Capability 1 rocket motor and warhead (non-Insensitive Munition (IM) standard) followed by a Full Operating Capability when the IM rocket motor issues have been resolved.

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Loitering Munitions	Full Operating Capability requirement under revision as part of wider Indirect Fire Precision Attack Programme.	The incremental approach has delivered an End- to- End Capability Demonstration which was successful in yielding information and understanding that will be used to inform Departmental planning on the way forward- not just in relation to Loitering Munition, but the whole Indirect Fire Precision Attack Project.
Spear Capability 2 Block 1	Full Operating Capability is defined as: full stockpile on Spear Capability 2 Block 1 delivered, all platforms modified to utilise its full capability, sufficient trained air and ground crews, full in-service support solution in place.	Warhead lethality requirement achieved and Critical Design Review passed; three development firings completed successfully with Brimstone 2 seeker and software.
Interim Main Gate 2- Future Local Area Air Defence System	As for Initial Operating Capability but with all remaining Type 23 Frigates (x12) fitted and a full missile stockpile (*** total warshot incl initial ***) delivered.	(i) Acheivement of Demonstration Phase Contract Award to deliver First of Class Platform - December 2011. (ii) Successful completion of the System Preliminary Design Review - March 2012.

D Section D: Performance

D.1 Sentinel Score

Project/Increment Title	Current Score	Last Years Score	Comments
Loitering Munition	84 GREEN	84 GREEN	
Spear Capability 2 Block 1	58 RED	67 AMBER	The movement from Amber to Red is the result of a major slip caused by technical problems which will lead to replanning of milestones and possible financial implications.
Spear Capability 2 Block 2	N/A	N/A	Increment has been cancelled
Interim Main Gate 2 Future Local Area Air Defence System (Maritime)(M)	84 GREEN	88 GREEN	

D.2 Performance against Defence Lines of Development

D.2.1 Loitering Munitions

Fire Shadow Block 1B is undergoing pan-DLOD acceptance with the Sponsor (first part due for completion in Apr 2012) and the focus is now on the support to the lead up to a User-led capability demonstration in June 2012.

D.2.1.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	Equipment has been delivered.	Yes	
2. Training	Troop have been trained.	Yes	
3. Logistics	Logistics requirements have been met, commensurate with equipment delivery	Yes	
4. Infrastructure	Facilities (inc training classroom) commissioned at Albermarle Barracks	Yes	
5. Personnel	Fire Shadow Troop Formed.	Yes	
6. Doctrine	CONOPS (Concept of Operations) Issued.	Yes	
7. Organisation	Troop formed for current phase. Future org plans TBC.	Yes	
8. Information	Requirements have been met, commensurate with equipment delivery	Yes	
Current forecast (with risks)		8 (0)	0
Last year's forecast (with risks)		N/A	N/A

D.2.1.1 Defence Line of Development variation

D.2.2 Spear Capability 2 Block 1

D.2.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	Spiral development of Dual Mode Brimstone. Insentive Munition Development	Yes (with risks)	
2. Training	Training provided for in-service users	Yes	
3. Logistics	Support provided for in-service use	Yes	

4.	Infrastructure	Infrastructure sufficient to support stockpile at readiness.	Yes	
5.	Personnel	Supply of sufficient qualified personnel	Yes	
6.	Doctrine	Principles for capability employment	Yes	
7.	Organisation	No change to organisation required.	Yes	
8.	Information	Data handling and transmission sufficient.	Yes	
Current forecast (with risks)			8 (1)	0
Last year's forecast (with risks)			N/A	N/A

D.2.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Equipment	Technical Factors	Significant technical difficulties experienced with Rocket Motor and Warhead Development are being managed to minimise the impact on cost, time and capability performance.

D.2.3 Spear Capability 2 Block 2

N/A: Spear Capability 2 Block 2 Cancelled - Capability assumed to be absorbed by Capability 2 Block 1 Technical Insertion (Planned Assumption for Service Entry 2024) and Capability 2 Block 3 (Planned Assumption for Service Entry 2022)

D.2.4 Interim Main Gate 2 - Future Local Area Air Defence System Demonstration & Manufacture

D.2.4.1 Performance against Defence Lines of Development

Line of Development		Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1.	Equipment	Delivery, installation and acceptance of First of Class system	Yes	
2.	Training	Delivery of Operator training solution through Maritime Composite Training System and maintainer training through Computer based training solution.	Yes	
3.	Logistics	Industrial In-service support solution in place	Yes	
4.	Infrastructure	Defence Munitions processing capability in place.	Yes	
5.	Personnel	Supply of sufficient qualified personnel	Yes	
6.	Doctrine	Principles for capability employment	Yes	
7.	Organisation	Organisation in place to exploit capability.	Yes	
8.	Information	information interfaces defined, proven and	Yes	
Current forecast (with risks)			8 (0)	0
Last year's forecast (with risks)			N/A	N/A

D.2.4.2 Defence Line of Development variation

D.3 Key Performance Measures

D.3.1 Loitering Munitions

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
CPS 226	all	Man In The Loop Operation	Yes	

CPS 273	all	Range from Control Node	Yes	
CPS 279	all	Prosecution of target	Yes	
CPS 285	all	Operate in Climatic Zones	Yes (with risks)	
CPS 431	all	Control Node transportable in transit cases	Yes	
CPS 361	all	Capable of operating in daylight	Yes	
CPS 416	all	Prosecution of target	Yes	
CPS 278	all	Endurance including transit	Yes	
CPS 432	all	Each Control Node package be a maximum *** man lift	Yes	
CPS 362	all	Capable of operating during darkness	Yes	
CPS 346	all	Image of sufficient quality at ***	Yes	
CPS 546	all	Responsiveness at range	Yes	
CPS 547	all	Responsiveness at range	Yes	
CPS 536	all	Control Node communications in all azimuths	Yes	
CPS 390	all	Engagement per Control Node	Yes	
CPS 289	all	Specified munition altitude ceiling	Yes	
CPS 388	all	*** launchers per hour, per Node	Yes	
CPS 385	all	Control Node into action less than *** hours	Yes	
CPS 433	all	Control Node operated from ***	Yes	
CPS 543	all	Moving Target-prosecution of target	Yes	
CPS 415	LOGISTICS	No need for dedicated handling or loading equipment	Yes	
CPS 230	LOGISTICS	Control Node transportable internally by CH47	Yes	
CPS 425	LOGISTICS	Launch Node transportable internally by CH47	Yes	
CPS 434	LOGISTICS	Munitions transportable internally by CH47	Yes (with risks)	
Current forecast (with risks)			24 (2)	0
Last year's forecast (with risks)			N/A	N/A

D.3.1.2 Key Performance Measures variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	CPS 285	Technical Factors	Technical evidence (trials reports) awaited in relation to the qualification of the Boost Motor. The extra information was required to complete the compliance position for operating in specified climatic zones (CPS 285) and being transported by helicopter (CPS 434).
March 2012	CPS 434	Technical Factors	Technical evidence (trials reports) awaited in relation to the qualification of the Boost Motor. The extra information was required to complete the compliance position for operating in specified climatic zones (CPS 285) and being transported by helicopter (CPS 434).

D.2.3.3 Operational Impact of variation

D.3.2 Spear Capability 2 Block 1

D.3.2.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
KUR1, UR 1.1	Equipment	The User requires a capability that is effective against the specified target set at the stipulated max range.	Yes	
KUR2, UR 1.4	Equipment	The User requires a weapon that can achieve a lethal effect against a wide variety of target types.	Yes	
KUR3, UR 1.7	Equipment	The User requires the ability to engage targets in complex scenarios with a high degree of confidence that only the intended targets will be engaged.	Yes	
KUR4, UR 1.9	Equipment	The User requires a single weapon to be able to effectively prosecute moving / manoeuvring targets.	Yes (with risks)	
KUR5, UR 1.14	Equipment	The user requires the ability to engage targets in environments where collateral damage issues exist	Yes	
KUR7, UR 1.16	Equipment Information	The User requires that data be provided to Dstl to enable the Theatre Command Structure to complete Collateral Damage Assessment as part of the target clearance process for pre-planned missions.	Yes	
KUR10, UR 1.46	Equipment	The User requires a capability that allows an engagement to be aborted after launch	Yes	
KUR 11, UR 2.1	Operational and Logistical	The user required the all-up-round to be compliant with the external profile, mass and Centre of Gravity (including tolerances) for the specified in service weapon warhead	Yes	
KUR 12, UR 3.27	Operational and Logistical	The User requires that the warhead be compatible with the in-service components and equipment associated with legacy weapons as stated.	Yes	
Current Forecast (with risks)			9 (1)	0
Last year's forecast (with risks)			N/A	N/A

D.3.3.2 Key Performance Measures variation

Date	Key Performance Measure	Category	Reason for Variation
16/04/2012	KUR4, UR 1.9, The User requires a single weapon to be able to effectively prosecute moving / manoeuvring targets	Yes (With Risks)	Project yet to complete (seeker handover) trials activities to generate assurance information. The UOR weapon configuration on which Brimstone 2 is based was not formally assessed under trials conditions due to the rapid timescales

D.3.3 Spear Capability 2 Block 2- cancelled

D.3.4 Interim Main Gate 2 - Future Local Area Air Defence System D&M

D.3.4.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
KUR 1	Equipment Doctrine	The User shall be able to neutralise the Air Threats targeting the Host Platform.	Yes	
KUR 2	Equipment Doctrine	The User shall be able to neutralise the Air Threats targeting the Defended Asset.	Yes	
KUR 3	Equipment Doctrine	The User shall be able to neutralise the Stand-off Air Threat.	Yes	
KUR 4	Equipment Doctrine	The User shall be able to Control the Engagement.	Yes	
KUR 5	Equipment	The User shall be able to utilise in Environmental Conditions.	Yes	
KUR 6	Equipment Information	The User shall integrate to the Host Platform.	Yes	
KUR 7	Information	The Communication and Information System interoperability elements of the solution to this User Requirement Document shall be acquired in accordance with MOD Communication and Information System policy.	Yes	
KUR 8	Personnel Organisation	The User shall utilise with available manning.	Yes	
KUR 9	Training	The User shall be trained to Utilise	Yes	
KUR 10	Logistics Equipment	The User shall complete missions without Critical Failure	Yes	
Current forecast (with risks)			10 (0)	0
Last year's forecast (with risks)			N/A	N/A

D.3.4.2 Key Performance Measures variation

Project Title		
Falcon		
Team Responsible		
Network Systems Project Team		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Air Commodore C Jones (Command, Control, Communications and Computers, Intelligence, Surveillance and Reconnaissance	16th April 2012	
Project/Increment Name	**Current Status of Projects /**	
Increment A	Investment Decision	
Increment C	Investment Decision	
Urgent Operational Requirement	Investment Decision	

A. Section A: The Project

A.1 The Requirement

Falcon will provide the comprehensive deployable communication systems that are needed at all levels of command and will operate in conjunction with systems such as Bowman, Cormorant, Skynet 5 and with allies' communication and information systems. It will not duplicate the capability of existing systems, but will be the high capacity system that binds together tactical communications in a theatre of operations as an integral part of the plans for Networked Enabled Capability. Falcon will replace, incrementally, a number of current systems, in particular Ptarmigan and RAF Transportable Telecommunications System/Deployable Local Area Network.

The programme comprises a number of increments of which Increments A and C of the equipment programme and the Urgent Operational Requirement / Urgent Defence Requirement (Increment H) are reflected in MPR. Increment A will provide a tactical formation level secure communication system for the High Readiness Force (Land) and the Allied Rapid Reaction Corps. It will enable units to be deployed rapidly to areas of crisis, thereby allowing the UK to remain a pivotal member of the Allied Rapid Reaction Corps. The system will be modular and upgradeable, incorporating much off the shelf technology that will ease management of obsolescence throughout its service life. Increment C, providing capability for Royal Air Force deployed operating bases, is the same equipment as contracted under Falcon Increment A. Falcon Increment A will require significantly less manpower to operate than the system being replaced.

In addition, during 2009 project Falcon was selected as the preferred solution to meet the requirements of the deployed technical architecture in Afghanistan, replacing in theatre communication systems. This requirement led to a contract amendment to incorporate system modifications essential for the operation in Afghanistan.

A.2 The Assessment Phase

Increment A of the Falcon programme gained Initial Gate approval in July 2002, following an extended Concept Phase that considered two key options: buy off the shelf technology (Bowman and Cormorant) or buy new capability. It was concluded that a new capability was required.

Marconi Selenia (now Selex) and BAE Systems Insyte were selected for the 15 month Assessment Phase contract and to compete for the Demonstration and Manufacture Phase prime contract for Increment A. The Assessment Phase contracts concentrated on reducing the risk in the proposals for the Demonstration and Manufacture phase, including demonstration of components and subsystems to achieve an acceptable, affordable, low risk solution. In addition, Whole Life Cost estimates were refined. Bidders' proposals for the Demonstration and Manufacture phase were submitted on 31 March 2004. The procurement strategy endorsed at Initial Gate comprised four increments: Increment A provided for High Readiness Force (Land) and the Allied Rapid Reaction Corps; Increment B for UK divisions and brigades under armour; Increment C for Royal Air Force deployed operational bases; and Increment D for littoral warfare and deep support, including higher mobility. Increment D was then an unfunded aspiration.

During the later stages of the Assessment Phase in 2004/2005, a savings option removed funding from the first two years of the Demonstration and Manufacture phase, resulting in a review of the incremental procurement strategy. Two options were considered. The first was for a single programme that effectively would have combined all three funded increments. This would have necessitated the project returning to pre-Initial Gate status and delayed the In Service Date by up to four years. This option was adopted as the planning assumption and reflected in MPR 2005. The second option was for the delivery of "early capability" that would provide for one medium scale deployment by 2010. It would utilise the savings option funding profile and exploit the existing contractor bids for Increment A. This option was explored and found to be viable.

In July 2005, approval was given to the further in-depth exploration of the second option and the selection of BAE Systems Insyte as the preferred bidder for Falcon Increment A. A programme was developed in conjunction with the preferred bidder that was affordable within the available funding.

Falcon Increment C achieved Main Gate approval in July 2007 and was added as a Falcon Increment A contract amendment in September 2007.

A.3 Project History since Main Gate

Following Main Gate approval for Increment A in March 2006, the Demonstration and Manufacture contract was awarded to BAE Systems Insyte. This contract was added to in September 2007, introducing Increment C, and again in April 2010 incorporating modifications to support the Deployed Technical Architecture (In Theatre Communications Network). The system has been developed to a high degree of maturity and the system validation and verification process is nearing completion, but there have been delays to the voice telephony sub-system and the cryptographic sub-system, which have had a consequential delay to the whole contract. The Equipment Acceptance Trial, a key milestone in the system's development, was completed successfully and reported as a pass with caveats in November 2009. Further, a Technical Field Evaluation of the system was successfully conducted in July 2010. Falcon Phase 2, which is in the early concept stage and is thus not covered by the MPR, is subject to a financial planning round 2012 Options which seek to reduce capability and funding in future years.

A.4 In-year Progress

Falcon had been experiencing difficulties since Quarter 3 2010 when it was identified that technical issues with the cryptographic subsystem meant that the project was subject to a series of senior management reviews. The development issue with the crypto was the sole contributory factor to the delay of the Falcon programme.

A 2-Star Programme Review to get Falcon back on track took place on the 17th May 2011 led by Director Information Systems and Services. In attendance were senior stakeholders in Industry, user and customer communities and Government Communications Head Quarters focused on resolving the issue. As a result, an Integrated Baseline Review was conducted; Part 1 during the period 13-17 June 2011 with a follow up Part 2 conducted in September 2011 with the contractor.

Part 1 focussed on scope, scheduling, resourcing and risk as follows.

- Determining whether the remaining scope of work was clearly understood and agreed by the Authority.
- Evaluating whether the Project Schedule(s) to deliver the remaining scope of work was sufficiently robust and reflected a realistic resource position and could be used as the basis for establishing the revised Baseline and measuring success.
- Providing confidence to the Authority that the Project Risk & Opportunity Management Process was being followed so that the resultant schedule of work included due cognisance of the Project's risks, opportunities and uncertainty.

Part 2 focused on confirming the Performance Measurement Baseline had been established and that Earned Value Management Reviews and Reporting were operating effectively.

An Information Note was raised in June 2011 informing the Investment Approvals Committee of the delay to the programme.

In addition due to the delay to the programme, Falcon was invited to attend the inaugural Major Projects Review Board conducted by Chief Defence Materiel and Secretary of State for Defence in June 2011. Following the review, Chief Defence Materiel communicated with industry that continued lack of performance could result in contract cancellation. The programme re-presented at the next Major Project Review Board in September 2011 reporting that the cryptographic problems had been resolved and the programme was now back on track. An action was placed indicating Falcon would again be reviewed at the next Major Projects Review Board in December 2011.

A Review Note was raised for timescale only in November 2011 to reset the In Service Date for Increments A and C plus the UOR. The programme slippage was a total of 19 months from previous approval. The revised dates were reset to December 2012 (at 50%) for Increments A and C, and UOR Equipment Delivery Date of March 2013 (at 90%). These dates were approved in December 2011.

A.5 Capability Risks

Falcon Increment A and Increment C will deliver secure one-to-one voice and wideband data networks to deployed forces, including Headquarters Allied Rapid Reaction Corps, Divisional and Brigade Headquarters and unit level command posts and Deployed Operating Bases. Without this capability Land and Air Forces will be unable to execute effective command and control. In addition, Falcon Increment A and Increment C will also provide wideband data coverage for vital intelligence gathering platforms such as Airborne Stand Off Radar, Land Environment Air Picture Provision and Watchkeeper. Without the wideband data network delivered under Falcon this intelligence information will not be delivered to the key decision makers in a timely fashion. Falcon Increment C will also support the increased data requirements of new aircraft such as Typhoon and will allow them to operate from Deployed Operating Bases.

A.6 Associated Projects

A.7 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Procurement Route**			**Approval Status**
Increment A				
Increment C				
Urgent Operational Requirement				
Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Increment A	BAE Systems Insyte	Demonstration and Manufacture	Firm Price	Competitive - UK
Increment C	BAE Systems Insyte	Demonstration to Manufacture	Firm Price	Single Source
Urgent Operational Requirement	BAE Systems Insyte	Demonstration to Manufacture	Firm Price	Single Source

A.8 Support Strategy

Description
The support strategy is based on a Contractor Logistic Support agreement with firm prices for the first four years from Initial Operating Capability. Fixed prices have been secured for a further five years after this period for both Increments A and Increment C. The Deployed Technical Architecture (In Theatre communications Network) was augmented by specific funding for the first year of operations.

Support Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Increment A	BAE Systems Insyte	Manufacture to In Service	Firm Price	Competitive - UK
Increment C	BAE Systems Insyte	Manufacture to In Service	Firm Price	Single Source
Urgent Operational Requirement	BAE Systems Insyte	Manufacture to In Service	Firm Price	Single Source

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Increment A	30	31	+1	12%	12%
Increment C	-	-	-	-	-
Urgent Operational Requirement	-	-	-	-	-
Total (£m)	**30**	**31**	+1	**12%**	**12%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Increment A	280	297	319
Increment C	41	45	50
Urgent Operational Requirement	-	53	55

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Increment A	297	254	-43	-5
Increment C	45	44	-1	0
Urgent Operational Requirement	53	51	-2	0
Total (£m)	**395**	**349**	**-46**	**-5**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.1.1 Increment A

Date	Variation (£m)	Category	Reason for Variation
March 2012	-5	Technical Factors	Risk retirement and lower than expected Bowman Integration costs.
Historic	-14	Budgetary Factors	A Financial Planning Round 2009 Option was implemented which reduced risk funding for Increments A & C.
Historic	-8	Changed Capability Requirements	This is due to the Commitments Regime decision not to commit to Defence Information Infrastructure (Future) integration during 2008/09.

Historic	+1	Accounting Adjustments and Re-definitions	Correction of treatment in Contracted Out Services VAT from previous years to align with Main Gate Approval
Historic	-5	Budgetary Factors	Assessment of later years' risk mitigation budget yielded a reduction in 2011/12 (-£4m). Reduction in Risk Mitigation funding in 2008/09 to ensure overall Falcon Increment A affordability within Equipment Programme 07 (-£1m).
Historic	-3	Changed Capability Requirements	Vehicle Military Engineering Programme for Falcon vehicles was transferred in 2006/07 to Joint Electronic Surveillance Integrated Project Team (-£1m). Vehicle Military Engineering Programme for Falcon vehicles was transferred 2005/06 to Joint Electronic Surveillance Integrated Project Team (-£2m).
Historic	-7	Procurement Processes	Condition of Main Gate Financial Approval was any planned accrual in 2005/06 that could not be achieved could not be slipped into subsequent financial years (-£7m).
Historic	-2	Technical Factors	Costs saved due to Falcon Vehicle change identified by contract study
Net Variation (£m)	**-43**		

B.3.1.2 Increment C

Date	Variation (£m)	Category	Reason for Variation
Historic	-1	Accounting Adjustments and Re-definitions	Reduction of In-Year expenditure against Control Total
Net Variation (£m)	**-1**		

B.3.1.3 Urgent Operational Requirement

Date	Variation (£m)	Category	Reason for Variation
Historic (February 2011)	-2	Budgetary Factors	Funding relating to the Urgent Operational Requirement element returned to HM Treasury as a result of realism and risk not materialising.
Net Variation (£m)	**-2**		

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

B.4 Progress against approved Support / PFI Cost

Project/Increment Title	Approved Cost (£m)	Forecast cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Increment A	82	70	-12	-0
Increment C	18	18	-0	-0
Urgent Operational Requirement	12	12	-0	-0
Total (£m)	**112**	**100**	**-12**	**0**

B.4.1 Cost variation against approved Support / PFI Cost

B.4.1.1 Increment A

Date	Variation (£m)	Category	Reason for Variation
Historic	-12	Accounting Adjustments and Re-definitions	Correction of treatment in Contracted Out Services VAT to align with Main Gate approval
Net Variation (£m)	**-12**		

B.4.1.2 Increment C

B.4.1.3 Urgent Operational Requirement

B.4.2 Operational Impact on Support / PFI Cost

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	31	0	31
Demonstration and Manufacture Phase	268	54	322
Support Phase / PFI Cost	4	0	4
Total Expenditure	**303**	**54**	**357**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase
Increment A	July 2002	March 2006	44
Increment C	-	July 2007	-
Urgent Operational Requirement	-	April 2010	-

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Approved	Budgeted For	Latest Approved
Increment A	October 2009	June 2010	February 2011
Increment C	May 2010	September 2010	March 2011
Urgent Operational Requirement	-	May 2011	August 2011

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Increment A	In Service Date: This is defined as the minimum scaling to provide wide and local area deployable communications that will support a non-enduring medium scale UK framework nation land deployment short of war fighting.
Increment C	In Service Date: This is the minimum scaling to provide local area deployable communications to support a non enduring medium scale peace keeping RAF deployment on one austere and one bare base
Urgent Operational Requirement	The Initial Operating Capability is defined as 38 Falcon nodes delivered to theatre and available for operations, and 19 nodes previously made available for UK based training / testing.

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation[1] (+/- months)
Increment A	June 2010	December 2012	+30	+15
Increment C	September 2010	December 2012	+27	
Urgent Operational Requirement	May 2011	December 2012	+19	+15

C.3.3 Timescale variation

C.3.3.1 Increment A

Date	Variation (+/- months)	Category	Reason for Variation
October 2011	+9	Technical Factors	A revised In Service Date was recommended by Defence Equipment & Support Review Board in October 2011 as a result of the technical delays to the crypto development programme.
April 2011	+6	Technical Factors	Continuing delays due to functional defects within the crypto development programme and revised schedule from BAE Systems Insyte.
Historic (August 2010)	+4	Technical Factors	Continuing delays due to functional defects within the crypto development programme.
Historic (April 2010)	+5	Changed Capability Requirements	Urgent Operational Requirement approved with caveat that Increments A and C reflect delay due to new requirement.
Historic	+1	Technical Factors	Impacting risks associated with Falcon Management System Software maturity.
Historic	+5	Technical Factors	Delays in development of voice telephony and Encryption sub-systems.
Net Variation (+/- months)	+30		

C.3.3.2 Increment C

Date	Variation (+/- months)	Category	Reason for Variation
October 2011	+9	Technical Factors	A revised In Service Date was recommended by Defence Equipment & Support Review Board in October 2011.
April 2011	+6	Technical Factors	Continuing delays due to functional defects within the crypto development programme and revised schedule from BAE Systems Insyte.
Historic (August 2010)	+4	Technical Factors	Continuing delays due to functional defects within the crypto development programme.
Historic (April 2010)	+1	Procurement Processes	Urgent Operational Requirement approved with caveat that Increments A and C reflect delay due to new requirement.
Historic	+2	Technical Factors	Impacting risks associated with crypto delays in the validation process.
Historic	+5	Technical Factors	Delays in development of voice telephony and Encryption sub-systems.
Net Variation (+/- months)	+27		

C.3.3.3 Urgent Operational Requirement

Date	Variation (+/- months)	Category	Reason for Variation
October 2011	+9	Technical Factors	A revised In Service Date was recommended by Defence Equipment & Support Review Board in October 2011.
April 2011	+6	Technical Factors	Continuing delays due to functional defects within the crypto development programme and revised schedule from BAE Systems Insyte.
Historic (August 2010)	+4	Technical Factors	Continuing delays due to functional defects within the crypto development programme.
Net Variation (+/- months)	+19		

C.3.4 Other costs / savings resulting from timescale variation

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Increment A	This is defined as the scaling and functionality that will enable the Allied Rapid Reaction Corps to conduct war fighting operations as a High Readiness Force (Land)	-
Increment C	This is the capability to support two medium scale RAF deployments as declared in the Planning Round 3rd Order Assumptions, one of which is enduring	-
Urgent Operational Requirement	This is defined as all 68 Falcon nodes required to meet this Urgent Operating Requirement delivered to theatre (where applicable) and installed with all equipment enhancements, including the upgraded management system software, complete.	-

C.5. Support / PFI Contract

C.5.1 Scope of Support / PFI Contract

Project/Increment Title	Scope
Increment A	Contractor Logistics Support providing for a minimal agreed level of System Availability
Increment C	Contractor Logistics Support providing for a minimal agreed level of System Availability
Urgent Operational Requirement	Contractor Logistics Support providing for a minimal agreed level of System Availability

C.5.2 Progress against approved Support / PFI Contract Go-Live Date

Project/Increment Title	Approved Date	Actual Date	Variation (+/- months)	In-year Variation (+/- months)
Increment A	February 2011	January 2012	+11	+10
Increment C	March 2011	January 2012	+10	+8
Urgent Operational Requirement		January 2012	0	0

C.5.2.1 Go-Live Date Variation

Increment A

Date	Variation (+/- months)	Category	Reason for Variation
October 2011	+10	Technical Factors	Continuing delays due to functional defects within the crypto development programme and revised schedule from BAE Systems Insyte.
Historic	+1	Technical Factors	Impacting risks associated with Falcon Management System Software maturity
Net Variation (+/- months)	**+11**		

C.5.2.2 Increment C

Date	Variation (+/- months)	Category	Reason for Variation
October 2011	+8	Technical Factors	Continuing delays due to functional defects within the crypto development programme and revised schedule from BAE Systems Insyte.
Historic	+2	Technical Factors	Impacting risks associated with Falcon Management System Software maturity
Net Variation (+/- months)	**+10**		

C.5.2.3 Urgent Operational Requirement

C.5.3 Progress against approved Support / PFI Contract End Date

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-year Variation (+/- months)
Increment A	December 2018	January 2021	+25	+15
Increment C	December 2018	January 2021	+25	+15
Urgent Operational Requirement		January 2013	-	-

C.5.3.1 End of Contract Date Variation

Increment A

Date	Variation (+/- months)	Category	Reason for Variation
October 2011	+9	Technical Factors	Continuing delays due to functional defects within the crypto development programme and revised schedule from BAE Systems Insyte.
April 2011	+6	Technical Factors	Continuing delays due to functional defects within the crypto development programme and revised schedule from BAE Systems Insyte.
Historic (August 2010)	+4	Technical Factors	Continuing delays due to functional defects within the crypto development programme and revised schedule from BAE Systems Insyte.
Historic	+1	Technical Factors	Impacting risks associated with Falcon Management System maturity.
Historic	+5	Technical Factors	Delays in development of voice telephony and Encryption sub-systems
Net Variation (+/- months)	**+25**		

C.5.3.2 Increment C

Date	Variation (+/- months)	Category	Reason for Variation
October 2011	+9	Technical Factors	Continuing delays due to functional defects within the crypto development programme and revised schedule from BAE Systems Insyte.
April 2011	+6	Technical Factors	Continuing delays due to functional defects within the crypto development programme and revised schedule from BAE Systems Insyte.
Historic (August 2010)	+4	Technical Factors	Continuing delays due to functional defects within the crypto development programme and revised schedule from BAE Systems Insyte.
Historic	+1	Technical Factors	Impacting risks associated with Falcon Management System maturity.
Historic	+5	Technical Factors	Delays in development of voice telephony and Encryption sub-systems
Net Variation (+/- months)	**+25**		

C.5.3.3 Urgent Operational Requirement

C.5.4 Other costs / savings resulting from Support Cost variation

C.5.5 Operational Impact of Support / PFI Support Contract variation

[1] A joint delay is being reported as the Increment A and Increment C timescales have now been aligned and both increments are being affected by the same technical issues. We continue to show the two increments separately to explain the historic differences.

D Section D: Performance

D.1. Sentinel Score

Current score	Last years score	Comments
91% Green	69% Amber	The variance was due to delays in the development of crypto by the contractor. A Review Note was approved in December 2011 which rescheduled the timeline. This brought the programme back on track to a more realistic baseline thereby increasing the score to 91.

D.2 Performance against Defence Lines of Development

D.2.1 Falcon Increment A

D.2.1.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	Delivery of suitable equipment to Army Headquarters in order to meet user requirements.	Yes	
2. Training	Sufficient Conversion Training and Steady State Training in order to allow Army Headquarters to deliver the correct level operational capability.	Yes (with risks)	
3. Logistics	Delivery of a robust support package in order to allow Army Headquarters to operate equipment at sufficient readiness levels.	Yes	
4. Infrastructure	Army Headquarters to ensure adequate garaging/storage facilities and work services are in place to meet equipment delivery schedule.	Yes (with risks)	
5. Personnel	Army Headquarters have sufficient personnel in place to deliver the Falcon capability.	Yes	
6. Doctrine	Army Headquarters have the relevant concepts and doctrine in place to support the deployment of the Falcon capability.	Yes	
7. Organisation	Army Headquarters have the relevant organisational structures in place in order to effectively deploy and manage the Falcon capability.	Yes	
8. Information	Army Headquarters ensure the relevant documentation and briefing material is in place to support the Falcon capability.	Yes (with risks)	

9. Interoperability	Networks Team is to ensure the equipment, procedures and documentation is in place to allow the Falcon capability to interoperate with other key Global Information Infrastructure network systems and the key Information Systems reliant on Falcon	Yes (with risks)	
Current forecast (with risks)		9 (4)	0
MPR2010 Forecast		9 (4)	0

D.2.1.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Training	Changed Capability Requirements	The Defence College of Communications and Information Systems have assessed that there are insufficient training placed to complete Conversion Training. This risk may be removed if the Falcon capability is not deployed to Afghanistan with the shortage being made up through in-unit training during Steady State Training.
March 2012	Infrastructure	Changed Capability Requirements	Army Headquarters intends to distribute the Falcon capability throughout the Corps of Royal Signals rather than exclusively to within two single regiments of the Corps. Whilst a lack of suitable garage space will not impact upon the capability, Army Headquarters is struggling to ensure that all intended locations have suitable secure storage for specialist items.
March 2012	Information	Technical Factors	Full Security Accreditation of the Falcon system is reliant on information gathered through the Manufacture phase (including System Field Test) of the project. Therefore, there is a risk that Falcon will not receive full Security Accreditation.
March 2012	Interoperability	Technical Factors	There has been extensive interoperability testing with MOD systems and Falcon. However, due to Falcon fixing its architecture at Main Gate Business Case (2006) some systems are employing technologies that are now not compatible with Falcon. The Urgent Operational Requirement enhancements have remedied this issue for a proportion of the fleet. The rest of the fleet will be enhanced in subsequent phases of Falcon procurement.

March 2012	Interoperability	Technical Factors	Falcon has increased its Message Transfer Unit size to treat this issue. The effect of this is to generate a requirement for Link Hardening at a cost of ***. A Planning Round 2012 Delete option has been submitted against this Link Hardening which will only affect performance in the most severe electronic conditions. This is still subject to confirmation with the rest of Planning Round 2012. This risk is in process of being treated.
March 2012	Training	Changed Capability Requirements	Defence College of Communications and Information Systems will now distribute the training of Falcon as far as possible into the Front Line Commands. This risk is now closed.
January 2012	Logistics	Technical Factors	Interactive Electronic Technical Publication v4 was release in January 2012. This is fit for task. This risk is now closed.
November 2011	Training	Technical Factors	The training solution has now been validated and training has commence in order to facilitate the System Field Trial prior to acceptance. The Training Readiness Date was November 2011. This risk is now closed.
September 2011	Equipment	Technical Factors	The Falcon encryption system (Thales eSecurity DC3T) has received fully certification from CESG to handle Secret information and below. This risk is now closed.
Historic	Equipment	Technical Factors	Crypto Evaluation Programme risk to the delivery of the Falcon System and delays to Falcon Management System for Factory Acceptance Testing.
Historic	Training	Technical Factors	Issues with the development of the training solution in time for the delivery of Conversion Training.
Historic	Logistics	Technical Factors	Issues with the development of the Interactive Electronic Technical Publications in time for contracted milestones

Historic	Equipment	Technical Factors	Programme slips in the delivery of the Falcon Encryption System, Voice Over Internet Protocol system and Management System for Factory Acceptance.
Historic	Training	Changed Capability Requirements	Issues with the capacity and resourcing plan for Falcon Steady State Training solution do not meet the perceived requirement.
Historic	Interoperability	Technical Factors	Emerging requirements from Defence Information Infrastructure (Future Deployed) and other Microsoft based Information Systems requires a change to the Falcon network in order to allow the correct passage of data. This risk was identified and appropriate risk funding was allocated to mitigate, however, the MOD Commitments Restraint Regime decided not to implement the risk mitigation.

D.2.2 Falcon Increment C

D.2.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	Delivery of suitable equipment to Headquarters AIR in order to meet user requirements.	Yes (with risks)	
2. Training	Sufficient Conversion Training and Steady State Training in order to allow Headquarters Air to deliver the correct level operational capability.	Yes (with risks)	
3. Logistics	Delivery of a robust support package in order to allow Headquarters Air to operate equipment at sufficient readiness levels.	Yes	
4. Infrastructure	Headquarters Air to ensure adequate garaging/storage facilities and work services are in place to meet equipment delivery schedule.	Yes	
5. Personnel	Headquarters Air have sufficient personnel in place to deliver the Falcon capability.	Yes	
6. Doctrine	Headquarters Air have the relevant concepts and doctrine in place to support the deployment of the Falcon capability.	Yes	
7. Organisation	Headquarters Air have the relevant organisational structures in place in order to effectively deploy and manage the Falcon capability.	Yes	
8. Information	Headquarters Air ensure the relevant documentation and briefing material is in place to support the Falcon capability.	Yes (with risks)	
9. Interoperability	Networks Team is to ensure the equipment, procedures and documentation is in place to allow the Falcon capability to interoperate with other key Global Information Infrastructure network systems and the key Information Systems reliant on Falcon.	Yes (with risks)	
Current forecast (with risks)		9 (4)	0
MPR2010 Forecast		9 (4)	0

D.2.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Equipment	Technical Factors	The system has not been subjected to a representative traffic stress test and therefore until the system can be proven a risk will exist. This has been partially mitigated through the use of modelling and simulation to provide some evidence to the robustness of the system.
March 2012	Training	Changed Capability Requirements	The Defence College of Communications and Information Systems have assessed that there are insufficient training places to complete Conversion Training. This risk may be removed if the Falcon capability is not deployed to Afghanistan with the shortage being made up through in unit training during Steady State Training.
March 2012	Information	Technical Factors	Full Security Accreditation of the Falcon system is reliant on information gathered through the Manufacture phase (including System Field Test) of the project. Therefore, there is a risk that Falcon will not receive full Security Accreditation.
March 2012	Interoperability	Technical Factors	There has been extensive interoperability testing with MOD systems and Falcon. However, due to Falcon fixing its architecture at Main Gate Business Case (2006) some systems are employing technologies that are now not compatible with Falcon. The Urgent Operational Requirement enhancements have remedied this issue for a proportion of the fleet. The rest of the fleet will be enhanced in subsequent phases of Falcon procurement.
March 2012	Logistics	Changed Capability Requirements	Provision has been made to ensure there is sufficient support facilities for both Cormorant and Falcon whilst Falcon is brought into service. Spares provision has been modelled by the delivery team and the contracted logistics support is to be reviewed periodically during the first two years in case changes need to me made. This risk is now closed.

March 2012	Interoperability	Technical Factors	Falcon has increase its Message Transfer Unit size to treat this issue. The effect of this is to generate a requirement for Link Hardening at a cost of ***. A Planning Round 2012 Delete option has been submitted against this Link Hardening which will only affect performance in the most severe electronic conditions. This is still subject to confirmation with the rest of Planning Round 2012. This risk is in process of being treated.
November 2011	Training	Changed Capability Requirements	The training solution has now been validated and training has commence in order to facilitate the System Field Trial prior to acceptance. The Training Readiness Date was November 2011. This risk is now closed.
September 2011	Equipment	Technical Factors	The Falcon encryption system (Thales eSecurity DC3T) has received fully certification from CESG to handle Secret information and below. Therefore, this risk is now closed.
Historic	Organisation	Changed Capability Requirements	Headquarters AIR Intro Working Group stood up in October 2009 resulting in Defence Line of Development no longer being at risk. This risk is now closed.
Historic	Equipment	Technical Factors	Crypto Evaluation Programme risk to the delivery of the Falcon System and delays to Falcon Management System for Factory Acceptance Testing have resulted in a lack of user confidence in the overall programme to deliver on time.
Historic	Logistics	Changed Capability Requirements	The current Contracted Logistic Support facilities may be insufficient to meet both Falcon and Cormorant requirements. Spares provision for Increment C may not meet the RAF utilisation.
Historic	Interoperability	Technical Factors	Emerging requirements from Defence Information Infrastructure (Future Deployed) and other Microsoft based Information Systems requires a change to the Falcon network in order to allow the correct passage of data. This risk was identified and appropriate risk funding was allocated to mitigate, however, the MOD Commitments Restraint Regime decided not to implement the risk mitigation.

Historic	Equipment	Technical Factors	Programme slips in the delivery of the Falcon Encryption System, Voice Over Internet Protocol system and Management System for factory acceptance trails have resulted in a lack of user confidence in the overall programme to deliver on time.

Historic	Training	Changed Capability Requirements	There is neither an accepted training plan nor a plan to ensure that the training meets either contracted solutions or Front Line Command aspirations. Actions are in-hand from Capability Integration Working Group and from the Training Working Group.
Historic	Organisation	Changed Capability Requirements	The current manning levels do not allow RAF to fully man all Falcon installations when deployed and this may be a formal requirement once the security requirements of Falcon are fully understood.

D.2.3 Urgent Operational Requirement

D.2.3.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	Delivery of suitable equipment to Operation HERRICK in order to meet user requirements.	Yes (with risks)	
2. Training	Sufficient Conversion Training and Steady State Training in order to allow Army Headquarters and Headquarters Air to deliver the correct level operational capability.	Yes (with risks)	
3. Logistics	Delivery of a robust support package in order to allow Army Headquarters and Headquarters Air to operate equipment at sufficient readiness levels.	Yes	
4. Infrastructure	Army Headquarters and Headquarters Air to ensure adequate garaging/storage facilities and work services are in place to meet equipment delivery schedule.	Yes (with risks)	
5. Personnel	Army Headquarters and Headquarters Air have sufficient personnel in place to deliver the Falcon capability.	Yes	
6. Doctrine	Army Headquarters and Headquarters Air have the relevant concepts and doctrine in place to support the deployment of the Falcon Urgent Operational Requirement capability.	Yes	
7. Organisation	Army Headquarters and Headquarters Air have the relevant organisational structures in place in order to effectively deploy and manage the Falcon capability.	Yes	

8. Information	Army Headquarters ensure the relevant documentation and briefing material is in place to support the Falcon Urgent Operational Requirement capability.	Yes (with risks)	
9. Interoperability	Networks Team is to ensure the equipment, procedures and documentation is in place to allow the Falcon capability to interoperate with other key Global Information Infrastructure network systems and the key Information Systems reliant on Falcon.	Yes (with risks)	
Current forecast (with risks)		9 (5)	0
Last year's forecast (with risks)		-	-

D.2.3.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Equipment	Technical Factors	The system has not been subjected to a representative traffic stress test and therefore until the system can be proven a risk will exist. This has been partially mitigated through the use of modelling and simulation to provide some evidence to the robustness of the system.
March 2012	Training	Changed Capability Requirements	The Defence College of Communications and Information Systems have assessed that there are insufficient training placed to complete Conversion Training. This risk may be removed if the Falcon capability is not deployed to Afghanistan with the shortage being made up through in unit training during Steady State Training.
March 2012	Infrastructure	Changed Capability Requirements	To enable the Urgent Operational Requirement, Falcon will utilise an Operational Training Equipment Pool and Operational Support Uplift Pool. This will be whole fleet management within 11 Signal Brigade. Not all receiving units will be able to garage Falcon but all units will have secure storage for access restricted items.
March 2012	Information	Technical Factors	Full Security Accreditation of the Falcon system is reliant on information gathered through the Manufacture phase (including System Field Test) of the project. Therefore, there is a risk that Falcon will not receive full Security Accreditation. This extends to the two Falcon hubs provided through the Urgent Operational Requirement.
March 2012	Interoperability	Technical Factors	There has been extensive interoperability testing with MOD systems and Falcon. However, due to Falcon fixing its architecture at Main Gate Business Case (2006) some systems are employing technologies that are now not compatible with Falcon. The Urgent Operational Requirement enhancements have remedied this issue for a proportion of the fleet. The rest of the fleet will be enhanced in subsequent phases of Falcon procurement.

D.3. Performance against Key Performance Measures

D.3.1 Falcon Increment A

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Equipment	Falcon shall meet the Information Exchange Requirements of its User communities	Yes	
2	Equipment	Falcon shall have the mobility necessary to support its User communities	Yes	
3	Equipment	Falcon shall be sufficiently flexible so resources can be proportionally matched to the scale of effort required during all phases of an operation	Yes	
4	Equipment	Falcon shall support the passage of secure information at a level appropriate to its protective marking	Yes	
5	Equipment	Falcon managers shall be able to manage all aspects of a Falcon deployment in an efficient, timely and effective manner in order to meet the needs of the User	Yes (with risks)	
6	Interoperability	Falcon Users shall be able to exchange information between co-operating forces in Joint and Combined operations without disruption to the conduct of operations	Yes (with risks)	

7	Organisation	Falcon shall minimise the manpower and training burden in order to provide efficient support to operations	Yes	
8	Equipment	Falcon shall survive in a hostile physical and electronic environment	Yes (with risks)	
9	Logistics	Falcon shall be sustainable on operations	Yes	
Current forecast (with risks)			9 (3)	0
MPR 10 forecast (with risks)			9 (1)	0

D.3.1.2 Key Performance Measures Variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	5	Technical Factors	The Falcon Management System (FMS) is currently at build state 6.0. This delivers all of the requisite functions but the effectiveness is blighted by usability issues of the system. This is being addressed through FMS 6.1 which greatly improves upon the usability and increase the functionality to include all Urgent Operational Requirement equipment but may not be available for Acceptance.
March 2012	6	Technical Factors	Information exchange is fully enabled for the Joint environment through the UK hubs into national systems. Some Combined operations are enabled through strategic gateways (e.g. Secret between UK and US) but this is dependent on services outwith the scope of Falcon. Therefore, risk is inherent due to the reliance on a third party and not all parties are catered for through strategic gateways.
Historic	6	Technical Factors	This MPR09 risk has been mitigated by a Contract amendment. This delivered enhanced reference equipment and infrastructure to the Land Systems Reference Centre.
Historic	6	Technical Factors	Emerging requirements from Defence Information Infrastructure (Future Deployed) and other Microsoft based Information Systems requires a change to the Falcon network in order to allow the correct passage of data. This risk was identified and appropriate risk funding was allocated to mitigate, however, the MOD Commitments Restraint Regime decided not
Historic	8	Technical Factors	interoperability issues described above it may be necessary to operate Falcon with a larger Maximum Transfer Unit size. The result of this increase in Maximum Transfer Unit size will have a detrimental effect on Falcon's ability to work in a hostile electronic environment.

D.3.1.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
Historic	6	To Be Met	Falcon Interoperability risks can now be fully addressed using this enhanced reference equipment.
Historic	8	With Risks	The survivability of the network radio paths will now be degraded in order to allow Microsoft based Information Systems to use Falcon as a transit network.
Historic	6	With Risks	The MOD Commitments Regime decision not to go ahead with the Defence Information Infrastructure (Future Deployed) Interoperability upgrade effectively doubles the amount of deployable infrastructure which units will have to deploy.

D.3.2 Falcon Increment C

D.3.2.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Equipment	Falcon shall meet the Information Exchange Requirements of its User communities	Yes	
2	Equipment	Falcon shall have the mobility necessary to support its User communities	Yes	
3	Equipment	Falcon shall be sufficiently flexible so resources can be proportionally matched to the scale of effort required during all phases of an operation	Yes	
4	Equipment	Falcon shall support the passage of secure information at a level appropriate to its protective marking	Yes	
5	Equipment	Falcon managers shall be able to manage all aspects of a Falcon deployment in an efficient, timely and effective manner in order to meet the needs of the User	Yes (with risks)	
6	Interoperability	Falcon Users shall be able to exchange information between co-operating forces in Joint and Combined operations without disruption to the conduct of operations	Yes (with risks)	

7	Organisation	Falcon shall minimise the manpower and training burden in order to provide efficient support to operations	Yes	
8	Equipment	Falcon shall survive in a hostile physical and electronic environment	Yes (with risks)	
9	Logistics	Falcon shall be sustainable on operations	Yes	
Current forecast (with risks)			9 (3)	0
MPR 10 forecast (with risks)			9 (1)	0

D.3.2.2 Key Performance Measures variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	5	Technical Factors	The Falcon Management System (FMS) is currently at build state 6.0. This delivers all of the requisite functions but the effectiveness is blighted by usability issues of the system. This is being addressed through FMS 6.1 which greatly improves upon the usability and increase the functionality to include all Urgent Operational Requirement equipment but may not be available for Acceptance.
March 2012	6	Technical Factors	Information exchange is fully enabled for the Joint environment through the UK hubs into national systems. Some Combined operations are enable through strategic gateways (e.g. Secret between UK and US) but this is dependent on services outwith the scope of Falcon. Therefore, risk is inherent due to the reliance on a third party and not all parties are catered for through strategic gateways.
Historic	6	Technical Factors	This MPR09 risk has been mitigated by a Contract amendment. This delivered enhanced reference equipment and infrastructure to the Land Systems Reference Centre. This risk is now closed
Historic	8	Technical Factors	Falcon has increased its Message Transfer Unit size to treat this issue. The effect of this is to generate a requirement for Link Hardening at a cost of ***. A Planning Round 2012 Delete option has been submitted against this Link Hardening which will only effect performance in the most sever electronic conditions. This is still subject to confirmation with the rest of Planning Round 2012. This risk is in process of being closed.

Historic	6	Technical Factors	Emerging requirements from Defence Information Infrastructure (Future Deployed) and other Microsoft based Information Systems requires a change to the Falcon network in order to allow the correct passage of data. This risk was identified and appropriate risk funding was allocated to mitigate, however, the MOD Commitments Restraint Regime decided not to implement the risk mitigation.
Historic	8	Technical Factors	In order to mitigate against the interoperability issues described above it may be necessary to operate Falcon with a larger Maximum Transfer Unit size. The result of this increase in Maximum Transfer Unit size will have a detrimental effect on Falcon's ability to work in a hostile electronic environment.

D.3.2.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
		NIL	

D.3.3 Urgent Operational Requirement

D.3.3.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Equipment	The solution shall be robust enough to meet the demands of the deployed environment. This includes physical, electronic and climatic conditions	Yes (with risks)	
2	Equipment	The user shall be able to conduct network management, dynamic configuration and prioritisation for the deployed network and all services defined.	Yes (with risks)	
3	Training	Sufficient training shall be delivered in line with the campaign training regime across all services, including SF.	Yes (with risks)	
4	Logistics	The solution shall have sufficient support to meet the system availability figure. A typical figure is 99%. This must be cognisant of the movement difficulties in theatre and position spares accordingly.	Yes	

5	Information	The User shall be able to exchange information across the HERRICK Joint Operations Area, and with strategic locations and agencies outside the Joint Operations Area, at a pace and capacity sufficient to sustain decision superiority.	Yes	
6	Equipment	The solution is to be holistic, flexible (scalable and agile), robust and able to deliver multiple domains with minimum demand on resources	Yes	

7	Equipment	Be rapidly deployable/re-deployable both tactically and strategically.	Yes	
8	Interoperability	The solution shall use open standards in order to interoperate with: Coalition, Non-Governmental Organisations; and Other Government Departments.	Yes (with risks)	
9	Information	The solution shall conform to the current campaign architecture, including physical footprint, logistics overhead and deployed manner.	Yes	
Current forecast (with risks)			9 (4)	0
MPR 10 forecast (with risks)			-	-

D.3.3.2 Key Performance Measures variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	1	Technical Factors	Whilst the system conforms to the requisite environmental Defence Standards as imposed by Increment A and C, evidence suggest that this is insufficient for conditions in Afghanistan. Further environmental protection is being applied to the Falcon system to mitigate this risk (e.g. sun shades). Further to this, the system has not been subjected to a representative traffic stress test and therefore until the system can be proven a risk will exist. This has been partially mitigated through the use of modelling and simulation to provide some evidence to the robustness of the system.

March 2012	2	Technical Factors	The Falcon Management System (FMS) is currently at build state 6.0. This delivers all of the requisite functions but the effectiveness is blighted by usability issues of the system. This is being addressed through FMS 6.1 which greatly improves upon the usability and increase the functionality to include all Urgent Operational Requirement equipment but may not be available for Acceptance.
March 2012	3	Changed Capability Requirements	The Defence College of Communications and Information Systems have assessed that there are insufficient training placed to complete Conversion Training. This risk may be removed if the Falcon capability is not deployed to Afghanistan with the shortage being made up through in unit training during Steady State Training.
March 2012	8	Technical Factors	Information exchange is fully enabled for the Joint environment through the UK hubs into national systems. Some Combined operations are enable through strategic gateways (e.g. Secret between UK and US) but this is dependent on services outwith the scope of Falcon. Therefore, risk is inherent due to the reliance on a third party and not all parties are catered for through strategic gateways.

D.3.3.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
		NIL	

D.4 Support Contract

D.4.1 Falcon Increment A

D.4.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Logistics	Availability of Spares at contractor provided equipment exchange point.	Yes	
2	Logistics	Contractor supplied Help Desk Availability.	Yes	
3	Logistics	Availability of Local Area Subsystem and Wide Area Subsystem.	Yes (with risks)	
4	Logistics	Reliability of the Internet Protocol Telephone	Yes	
Current forecast (with risks)			4 (1)	0
MPR 10 forecast (with risks)			NIL	NIL

D.4.1.2 Key Performance Measures variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	3	Technical Factors	The Prime Contractor claimed it is too labour intensive to collect and collate the data logs that would prove this KPM. The Delivery Team are engaged to resolve this issue as without it the Falcon system, as a whole, cannot be assessed.

D.4.1.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
		NIL	

Project Title		
Future Strategic Tanker Aircraft		
Team Responsible		
Strategic Transport and Air to Air Refuelling Team		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Brigadier John Brittain (Expeditionary Logistics and Support Capability)	21st March 2011	
Project/Increment Name	**Current Status of Projects /**	
Future Strategic Tanker Aircraft	Post-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

The Future Strategic Tanker Aircraft Service will provide the Air-to-Air Refuelling and the passenger Air Transport capability currently provided by the Royal Air Force's fleet of VC10 and TriStar aircraft. Air-to-Air Refuelling is a key military capability that significantly increases the operational range and endurance of front line aircraft across a range of Defence roles and military tasks.

A.2 The Assessment Phase

The Future Strategic Tanker Aircraft was nominated as a potential Private Finance Initiative project in 1997. An Assessment Phase, designed to confirm whether a Private Finance Initiative would offer best value for money, was launched following Initial Gate approval in December 2000.

The Assessment Phase confirmed industry's ability to meet the service requirement, programme timescales and costs and determined that the inclusion of passenger Air Transport capability in the contract would represent value for money. It also clarified the manning and personnel implications.

A.3 Project History since Main Gate

The Main Gate Business Case was submitted to the Investment Approvals Board in January 2007 and was approved in May 2007. In March 2008 a 27 year Private Finance Initiative contract was signed.

The final Approval envelope for Future Strategic Tanker Aircraft was set by the Investment Approvals Board in June 2008.

The Investment Approvals Board approved Contract Not To Exceed cost remains at £10.5 Bn. In addition there will be Front Line Command manpower and support costs leading to a total cost of £12.3 Bn.

The successful maiden flight of the first green Future Strategic Tanker Aircraft A330-200 aircraft took place on the 4th June 2009; the aircraft was subsequently delivered for conversion to the Airbus Military purpose-built hangar facility Getafé in Spain on the 10th July 2009. It was joined by the second Future Strategic Tanker Aircraft aircraft on the 7th September 2009; both aircraft have now been converted for their Future Strategic Tanker Aircraft role, which includes fitting of military avionics as well as the specialist refuelling equipment. Following this work both aircraft moved into the Certification and Qualification programme.

The Future Strategic Tanker Aircraft is not simply about the procurement of aircraft, but covers all aspects of an integrated worldwide aircraft service, ranging from the provision of the infrastructure, including a hangar complex (which allows for the maintenance of two aircraft simultaneously and houses the two Future Strategic Tanker Aircraft Squadrons, the maintenance crew; operations centre and associated office accommodation), a full flight crew and engineer training service, despatch and ground support. The new facility, known as the AirTanker Hub, was completed ahead of schedule and was officially opened on 31 March 2011, for the provision of the Future Strategic Tanker Aircraft service at Royal Air Force Brize Norton.

The construction of the training facility building was completed ahead of schedule, and will become fully operational towards the end of 2012.

A.4 In-year Progress

TEMPEST and Defensive Aids Sub System testing began at Boscombe Down on 18 April 2011 and Ground testing for Air to Air Refuelling with receivers began in May 2011.

European Aviation Safety Agency issued the Supplemental Type Certificate 1 and 2 to Airbus Military on 20 April 2011 and 29 July 2011 respectively.

MOD and Air Tanker signed a contract on 11 July 2011 to allow C130 Hercules aircraft to use the hangar for line maintenance.

Secretary of State for Defence, Dr Liam Fox named the Future Strategic Transport Aircraft 'Voyager' at the Royal International Air Tattoo at Royal Air Force Fairford on 15 July 2011.

Cobham achieved the UK Civil Aviation Authority approval for the extension to their European Aviation Safety Agency Part-145 accreditation, to include Base and Line Maintenance for the Airbus A330-243 series aircraft on 23 August 2011, signifying the beginning of the conversion programme at Cobham.

On the 10 October 2011 the Civil Aviation Authority issued the Part 145 & M Certificate to Air Tanker Services. This completed the set of Air Tanker Services deliverables for Introduction to Service. Because of problems in the trials programme and delay in delivery of documentation from Air Tanker, the Introduction To Service date slipped to February 2012.

The first Voyager aircraft arrived at Royal Air Force Brize Norton on 21 December 2011. On arrival, Air Tanker registered the aircraft and obtained the Civil Aviation Authority Certificate of Airworthiness.

The originally planned flight trials to clear wing pod Air to Air Refuelling for Tornado and Typhoon finished in December 2011. These trials identified problems associated with fuel leakage at various parts of the Air to Air Refuelling clearance flight envelope. Rectification plans for these issues were finally agreed with Air Tanker and the Independent Technical Adviser on 31 January 2012.

The Simulator Test Readiness Review completed successfully on 10 January 2012.

The Type Certification Exposition version 5 for Air Transport & Aeromed 3 was issued on 2 February 2012.

Capability Acceptance at Introduction To Service acknowledged that only the Air Transport and Aeromed 3 elements of the capability had been achieved on 2 February 2012, but not achievement of an acceptable Air to Air Refuelling capability.

The Director Air Support signed the Voyager Release To Service Recommendation for Air Transport and Aeromed 3 only, on 21 March 2012, and the Release To Service was signed by the Assistant Chief of the Air Staff on 4 April 2012. The Aircraft was placed on the Military Aircraft Register on 5 April 2012.

A.5 Capability Risks

The first VC10 aircraft entered service in the 1960s and these were converted to Air-to-Air refuelling tankers at various dates between 1980 and 1996. The aircraft has ageing and outdated technology, and the risks to maintaining reliability and value for money have grown and ultimately it will not be possible to sustain capability. These VC10 aircraft are planned to go out of service in 2013. The TriStars aircraft first entered airline service in the early 1970s and converted to their current tanker and tanker/freight roles between 1983 and 1987. These aircraft are planned to go out of service in 2014.

The Future Strategic Tanker Aircraft programme will provide the Royal Air Force with a reliable, safe and efficient Air Transport and Air to Air Refuelling service until its Out of Service Date in 2035.

The primary role for the Future Strategic Tanker Aircraft will be Air-to-Air Refuelling, and the objective of these operations is to enhance combat effectiveness by extending the range, payload or endurance, of front line fast jet aircraft and large aircraft types where and when it is needed. Without Future Strategic Tanker Aircraft, a significant gap would appear in the UK's strategic deployment and tactical strike capabilities. In addition the Future Strategic Tanker Aircraft is able to transport up to 291 passengers.

A.6 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status

A.7 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Procurement Route**			**Approval Status**
Future Strategic Tanker Aircraft				
Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Future Strategic Tanker Aircraft	AirTanker Ltd	PFI Service Delivery	PFI	Competitive - International

A.8 Support Strategy

Description
Future Strategic Tanker Aircraft is a Private Finance Initiative programme that will provide an Air-to-Air Refuelling and passenger Air Transport service for 24 years. The contract will provide a comprehensive and integrated service solution, based on new Airbus A330-200 aircraft modified to provide Air-to-Air Refuelling capability. The service will include the provision of purpose designed training and maintenance facilities at Royal Air Force Brize Norton, together with through life training, maintenance and support.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
Future Strategic Tanker Aircraft	AirTanker Ltd	PFI Service Delivery	PFI	Competitive - International

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Future Strategic Tanker Aircraft	13	38	+25	0.1%	0.3%
Total (£m)	**13**	**38**	**+25**	**0.1%**	**0.3%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Future Strategic Tanker Aircraft	12107	12307	12517

B.3 Cost of the Demonstration and Manufacture Phase- N/A

B.4 Progress against approved Support / PFI Cost

Project/Increment Title	Approved Cost (£m)	Forecast cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Future Strategic Tanker Aircraft	12307	12266	-41	+257
Total (£m)	**12307**	**12266**	**-41**	**+257**

B.4.1 Cost variation against approved Support / PFI Cost

B.4.1.1 Future Strategic Tanker Aircraft

Date	Variation (£m)	Category	Reason for Variation
March 2012	-98	Budgetary Factors	Increase in assumption of the amount that can be realised by refinancing.
March 2012	+367	Inflation	Increase in Retail Price Index assumption used in future costings (+£31m) and increase in predicted fuel costs (+£336m).
March 2012	+24	Changed Capability Requirements	Inability to realise savings associated with proposed French utilisation of Voyager capability.
March 2012	-10	Accounting Adjustments and Re-definitions	Revised VAT treatment of PFI training element.

March 2012	-20	Budgetary Factors	Reassessment by Front Line Command of manpower and operating costs.
March 2012	-3	Budgetary Factors	Reduction in general office support costs due to budgetary constraints.
January 2012	+2	Technical Factors	Implementation of civil aviation safety standards.
October 2011	-5	Technical Factors	Introduction to Service and aircraft receiver trials delayed resulting in reduced service charge.
Historic	+124	Changed Capability Requirements	Costs associated with Planning Round 2011 Options which address platform protection and greater utilisation of the aircraft.
Historic	-16	Budgetary Factors	Reduced costing due to reprofiling of project manpower required to support the programme and reduced in-year trials support costs.
Historic	+3	Accounting Adjustments and Re-definitions	Change in VAT rate from 17.5% to 20% resulting in an increase in costs.
Historic	-38	Accounting Adjustments and Re-definitions	Correction of IRDEL double counting
Historic	-8	Accounting Adjustments and Re-definitions	Reduction in costs associated with instrumentation of aircraft in support of Future Strategic Tanker Aircraft clearance trials.
Historic	-63	Accounting Adjustments and Re-definitions	Forecast based on expected levels of usage and fuel costs modelled in accordance with Front Line Command estimates
Historic	-300	Accounting Adjustments and Re-definitions	Method for costing Military equipment obsolescence and change in law costs amended from using actual figures to a risk based assessment.

Historic	-50	Accounting Adjustments and Re-definitions	Correction of Defensive Aids Suite balance sheet treatment to include RDEL reduction across the contract period.
Historic	-20	HM Treasury Reserve	Deployed operating costs subject to reimbursement from HM Treasury Reserve
Historic	-20	Technical Factors	Improved definition of the technical requirements relating to integration and support of Communication and Information Systems
Historic	+90	Accounting Adjustments and Re-definitions	Revised assessment of potential risk opportunities such as refinancing.
Historic	-50	Accounting Adjustments and Re-definitions	Correction of Defensive Aids Suite balance sheet treatment to include RDEL reduction across the contract period.
Historic	-20	HM Treasury Reserve	Deployed operating costs subject to reimbursement from HM Treasury Reserve
Historic	-20	Technical Factors	Improved definition of the technical requirements relating to integration and support of Communication and Information systems.
Historic	+90	Accounting Adjustments and Re-definitions	Revised assessment of potential risk opportunities such as refinancing
Net Variation (£m)	**-41**		

B.4.2 Operational Impact on Support / PFI Cost

Project / Increment Title	Category	Explanation
Future Strategic Tanker Aircraft	Changed Capability Requirements	The enhanced platform protection measure will expand operational capability

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	38	0	38
Demonstration and Manufacture Phase	0	0	0
Support Phase / PFI Cost	15	58	73
Total Expenditure	**53**	**58**	**111**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase
Future Strategic Tanker Aircraft	December 2000	May 2007	77

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Approved	Budgeted For	Latest Approved
Future Strategic Tanker Aircraft	January 2014	May 2014	November 2014

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Future Strategic Tanker Aircraft	Initial Operating Capability Introduction to Service + 18 months is the definition of Initial Operating Capability in the Future Strategic Tanker Aircraft programme. This is the point when one operational Air-to-Air Refuelling aircraft will be available with Wing Pod and Centreline Fuselage Refuelling Unit. In-Service Date At the point of Air-to-Air Refuelling In-Service Date there will be the capability to provide at least nine Future Strategic Tanker Aircraft capable of refuelling operations simultaneously with any two of Air-to-Air Refuelling-probe-equipped Fast Jets. Five of the nine Future Strategic Tanker Aircraft will be able to transfer fuel to large aircraft during day/night.

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Future Strategic Tanker Aircraft	May 2014	May 2014	0	0

C.3.3 Timescale variation

C.3.3.1 Future Strategic Tanker Aircraft

C.3.4 Other costs / savings resulting from timescale variation

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Future Strategic Tanker Aircraft	The Full Operating Capability is when all the Future Strategic Tanker Aircraft are accepted into service, the complete service available for use and the Key Performance Measures are met.	Introduction to Service has been achieved.

C.5. Support / PFI Contract

C.5.1 Scope of Support / PFI Contract

Project/Increment Title	Scope
Future Strategic Tanker Aircraft	Private Finance Initiative Contract covers full service

C.5.2 Progress against approved Support / PFI Contract Go-Live Date

Project/Increment Title	Approved Date	Actual Date	Variation (+/- months)	In-year Variation (+/- months)
Future Strategic Tanker Aircraft	March 2008	March 2008	0	0

C.5.2.1 Go-Live Date Variation- N/A

C.5.3 Progress against approved Support / PFI Contract End Date

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-year Variation (+/- months)
Future Strategic Tanker Aircraft	March 2035	March 2035	0	

C.5.3.1 End of Contract Date Variation

C.5.4 Other costs / savings resulting from Support Cost variation

C.5.5 Operational Impact of Support / PFI Support Contract variation

D Section D: Performance

D.1. Sentinel Score

Current score	Last years score	Comments
89 Green	88 Green	

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	All aircraft will be modified to conduct the required roles, but specific equipment will only be added as required to meet the tasking. All aircraft will be two-point tankers: of these seven will also be three-point capable, with five centre-line systems being available for use. Aircraft will be fitted for a Defensive Aids Suite.	Yes (with risks)	
2. Training	A comprehensive training service will be delivered by AirTanker as a key part of the contract. Aircrew will undergo type-related training on the A330 with additional Air-to-Air Refuelling role training conducted by military instructors. Ground crew will be trained to European Aviation Safety Agency standards and hold type-related licenses.	Yes (with risks)	
3. Logistics	Logistics support for the fleet will be controlled by AirTanker as part of the service-delivery contract.	Yes	
4. Infrastructure	A new hangar with bays for two A330 aircraft is being built at RAF Brize Norton, including maintenance bays and workshops. A training facility including a flight simulator will be housed in another complex nearby.	Yes	
5. Personnel	Flight deck crews comprising military and military Sponsored Reserves will be trained, together with Mission Systems Operators. There will be cabin crew, ground crew and operations support personnel.	Yes	
6. Doctrine	The solution meets the requirement identified within the Concept of Use.	Yes	
7. Organisation	The aircraft service will build up gradually from Introduction to Service to Air-to-Air Refuelling In-Service Date.	Yes	
8. Information	AirTanker Services will provide a bespoke Information Technology system to interface with current MOD Information Technology systems.	Yes	

Current forecast (with risks)	8 (2)	0
Last year's forecast (with risks)	8 (2)	0

D.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
Historic	Training	Technical Factors	Uncertainty of the acceptance by 22 Group of the Commercial Off The Shelf and training validation.
Historic	Equipment	Technical Factors	Development of avionics packages has fallen behind schedule. Increased resources have been identified as a mitigation strategy to ensure DLOD will be achieved. As at March 2011 the Military Avionics Integration issues remain. Key activities continue for the Certification of the aircraft.
Historic	Personnel	Technical Factors	Engineer training manpower to be made available. Line of Development no longer at risk.
Historic	Logistics	Technical Factors	A series of workshops has identified processes to ensure support solution will be in place and no major risks have been identified. Line of development no longer at risk.
Historic	Information	Technical Factors	Progress on interfaces has been made and no major risks have been identified. Line of Development no longer at risk .
Historic	Logistics	Technical Factors	Development of the detailed, practical aspects of the logistic support solution has identified areas of risk between contractor and MOD. These risk areas are being mitigated through logistic workshops and engagement with AirTanker to identify processes and solutions where required.
Historic	Personnel	Technical Factors	First ground crew go into training in December 2010. The manpower Establishment is to be in place by no later than July 2009 to allow for Candidates to be selected. Meetings are timetabled to progress this work.
Historic	Information	Technical Factors	A short term, manual, interface has been agreed between the Authority and AirTanker tasking and operations Information Technology systems. In the longer term an Application Programming Interface needs to be set up to allow direct communication between the 2 systems and the road-map to this solution is to be developed.

D.3. Performance against Key Performance Measures

D.3.1 Future Strategic Tanker Aircraft

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
KUR 01	Equipment	The User shall be able to utilise Future Strategic Tanker Aircraft to refuel all receiver aircraft cleared to operate with Future Strategic Tanker Aircraft.	Yes	
KUR 02	Equipment	The system shall be capable of transporting personnel and their associated personal equipment and freight	Yes	
KUR 03	Equipment	The User shall be able to utilise an air system that is airworthy and meets all appropriate regulations, both military and civilian, at all times.	Yes	
KUR 04	Logistics	The User shall be able to operate the air system world-wide, in both Air-to-Air Refuelling and passenger Air Transport Roles.	Yes	

KUR 05	Equipment / Information	The User shall have the capability to interoperate with appropriately configured aircraft in a manner necessary to carry out the required function.	Yes	
KUR 06	Doctrine	The system shall meet the readiness requirements to provide sufficient capability to support the Military Tasks laid down in the RAF Management Plan.	Yes	
KUR 07	Logistics	The User shall be able to utilise an air system that is fully supportable (including maintenance, spares, manpower, facilities and support equipment) at the rates of effort specified, both at the Main Operating Base and when deployed world-wide at all times.	Yes	
KUR 08	Logistics	The system shall be capable of providing the required level of operational capability at all times.	Yes	
KUR 09	Training	The User shall be able to acquire and maintain the necessary skills to utilise the system across the spectrum of operation.	Yes	
Current forecast (with risks)			9 (0)	0
Last year's forecast (with risks)			9 (0)	0

D.3.1.2 Key Performance Measures Variation

D.3.1.3 Operational Impact of variation

D.4 Support Contract- N/A

Project Title		
Joint Combat Aircraft		
Team Responsible		
Joint Combat Aircraft PT		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Air Commodore Mark Hopkins (Air Capability)	27th April 2012	
Project/Increment Name	**Current Status of Projects /**	
System Development & Demonstration	Investment Decision	
Production, Sustainment & Follow on Development	Investment Decision	

A. Section A: The Project

A.1 The Requirement

The Joint Combat Aircraft (JCA) is the requirement for a multi-role aircraft to be operated jointly by the Royal Air Force and the Royal Navy from both land bases and the new Queen Elizabeth Class aircraft carriers.

The Joint Strike Fighter (JSF) has been selected as the aircraft to meet the Joint Combat Aircraft requirement, and provides the UK with a fifth generation air system. Joint Combat Aircraft will provide the UK with an expeditionary multi-role fighter with the ability to enter and operate within contested airspace. Using secure links it will operate as a Combat Intelligence, Surveillance, Target Acquisition & Reconnaissance platform providing intelligence to troops on the ground, and when required will be able to employ a range of sophisticated weaponry, even through adverse weather.

A.2 The Assessment Phase

Approval was obtained in November 1996 to enter the Concept Demonstration Phase on the Joint Strike Fighter programme under a Memorandum of Understanding signed in December 1995. The phase began in November 1996 with two competing United States Prime Contractors (Boeing and Lockheed Martin) designing and flying demonstration aircraft on which the selection of the preferred bidder was based. The phase completed in October 2001 with the announcement of Lockheed Martin as the successful bidder. Studies into alternative options to Joint Strike Fighter to meet the requirement were also conducted but were rejected on cost grounds. A Main Gate demonstraion approval was obtained in January 2001 for the participation in the System Development and Demonstration phase of the Joint Strike Fighter programme.

A.3 Project History since Main Gate

Following the 1998 Strategic Defence Review, UK participation in the Concept Demonstration Phase of the programme and significant analysis, the US Joint Strike Fighter was selected to meet the Joint Combat Aircraft requirement for Carrier Strike. A Main Gate demonstration approval was obtained in January 2001 for participation in the System Development and Demonstration phase of the JSF programme, leading to signature that month by UK and United States governments of the System Development and Demonstration Memorandum of Understanding. The selection of Lockheed Martin as the Joint Strike Fighter air system prime contractor included a teaming agreement with Northrop Grumman and BAE Systems to collectively form Team Joint Strike Fighter. Two separate and competitive propulsion contracts were awarded to Pratt and Whitney for the F135 engine and General Electric/Rolls Royce Fighter Engine Team for the F136 engine. In April 2011, the F135 engine was selected as the sole engine variant within the Joint Strike Fighter programme. Whilst other partners joined the programme at Level 2 and 3 entry arrangements, only United States and UK requirements have driven the System Development and Demonstration baseline solution.

In September 2002 the UK selected the Short Take Off and Vertical Landing (STOVL) Joint Strike Fighter variant to meet the JCA requirement. A review of the Joint Strike Fighter Programme and the viability of the Short Take Off and Vertical Landing design was completed in January 2005. It concluded that a successful programme of weight reduction initiatives and other performance enhancements had restored confidence that the Short Take Off and Vertical Landing design should remain the UK's planning assumption. A further review by the Investment Approvals Board in July 2006 confirmed this decision.

On 12 December 2006 Minister of State for Defence Equipment and Support signed the Production Sustainment and Follow-on Development Memorandum of Understanding, which was the first of four Main Gates planned for the introduction to Service of Joint Combat Aircraft. In March 2009, approval was given for Phase 2 of the Joint Combat Aircraft incremental strategy, for participation in joint Initial Operational Test & Evaluation with the United States Services.

In October 2010 the UK Government's Strategic Defence and Security Review announced that the Joint Combat Aircraft programme would switch variant from the Short Take Off and Vertical Landing variant to the Carrier Variant.

A formal Initial Operating Capability for Joint Combat Aircraft requirement will not be set until the Main Gate 4 decision point. However, the Department is planning to deliver a capability from both land and sea that is consistent with Her Majesty's Government policy to introduce a carrier strike capability around 2020.

A.4 In-year Progress

During financial year 2011/12 the MOD continued to pursue a Carrier Variant aircraft based programme in line with the variant change decision taken under Strategic Defence and Security Review 2010. In year progress during financial year 2011/12 focused on the following:

1. Continuing production of three UK Joint Strike Fighter aircraft. The first two of these jets have entered the final production stages and are in pre flight testing at the Lockheed Martin Fort Worth Texas production line.

2. The Joint Strike Fighter programme System Development and Demonstration phase continues at pace with a total of 2,689 flight test hours achieved through to March 24th 2012, which exceeded test point and flight targets for all variants

3. The Joint Combat Aircraft project team received approval to accommodate further years of shared programme costs and long lead funding for a fourth Joint Strike Fighter to be procured under Low Rate Initial Purchase (LRIP) contract 7

4. The United States Department Of Defense Selected Acquisition Report 11 announced a slip to the Joint Strike Fighter programme milestone C, which represents the conclusion of System Design and Development, to April 2019. There is no cost increase to the UK contribution due to this slip, since UK contributions are fixed under the System Development and Demonstration Memorandum of Understanding. One of the most significant cost impacts reflected in the report was the US restructuring its production profile, reducing the aircraft quantity inside the US Financial Year 2013-17 timeframe by 179 aircraft, flattening the near term production rate to reflect a balanced development approach between concurrency and unit costs. The US is still committed to a total production buy of 2,443 aircraft. The Selected Acquisition Report 11 cost estimate does not affect the cost of the UK's first three aircraft but the costs of future aircraft will be affected and this impact will be considered in future approvals.

A.5 Capability Risks

The Strategic Defence and Security Review 2010 confirmed the need for Joint Strike Fighter which forms the backbone of Carrier Enabled Power Projection. If the UK did not acquire Joint Strike Fighter it would be unable to meet its Combat Air and Carrier Enabled Power Projection requirements and be unable to support ground forces in multi threat environments at a time and place of the Government's choosing. Joint Strike Fighter brings no significant risks to other projects, but relies heavily on the Queen Elizabeth Carrier programme to deliver suitable carriers to introduce a Carrier Strike capability around 2020.

A.6 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
Queen Elizabeth Class (Future Aircraft Carrier)	Initial Operating Capability: Ship 1 (Queen Elizabeth) - July 2017[1]	Post Main Gate

A.7 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Procurement Route**			**Approval Status**
System Development & Demonstration				
Production, Sustainment & Follow on Development				
Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
System Development & Demonstration	Lockheed Martin (Prime)	System Development and Demonstration	Cost plus award fee, subject to a maximum price	Competitive International collaboration procurement. UK participation through Memorandum of Understanding agreement. (Note: the contract is placed by the US Department of Defense who then contract Lockheed Martin on UK MOD behalf)
Production, Sustainment & Follow on Development	Lockheed Martin (Prime)	Initial Operational Test & Evaluation Aircraft	Cost plus award fee, subject to a maximum price.	Competitive International collaboration procurement. UK participation through Memorandum of Understanding agreement. (Note: the contract is placed by the US Department of Defense who then contract Lockheed Martin on UK MOD behalf)

A.8 Support Strategy

Description
Support strategy is currently under development for when IOC is achieved, current proposals assume that Lockheed Martin will provide a contracted for availability solution around performance based logisitics

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route

[1] The forecast Initial Operating Capability are those following the Carrier's conversion to the Carrier Variant configuration

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Joint Combat Aircraft	150	144	-6	7%	7%
Total (£m)	**150**	**144**	**-6**	**7%**	**7%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
System Development &	-	1874	2060
Production, Sustainment & Follow on Development	-	692	692

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
System Development &	1874	1566	-308	-19
Production, Sustainment & Follow on Development	692	634	-58	+23
Total (£m)	**2566**	**2200**	**-366**	**+4**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.1.1 System Development & Demonstration

Date	Variation (£m)	Category	Reason for Variation
March 2012	+1	Exchange Rate	MPR12: Exchange rate fluctuations through financial year 2011/12

March 2012	-20	Technical Factors	MPR12: Reclassification of UK specific work as development focussed rather than production (+£9m). Slower than anticipated progress on ship/air integration work (-£5m). Reduced levels of UK specific risk mitigations being required (-£18m). Qualification of UK weapons for carriage on F-35 (+£14m). Delays to work supporting UK's transition to the Carrier Variant post SDSR (-£9m). Reduced levels of engineering support required for UK specific development tasks (-£11m).
Historic	+13	Technical Factors	Reassessment of risk mitigation activities in relation to Reprogramming (+£5m) and Ship/Air Integration (£8m).
Historic	+8	Accounting Adjustments and Re-definitions	Removal of IRDEL (Foreign Exchange) as per revised Departmental policy.
Historic	-7	Exchange Rate	MPR2011 In year 2010/11 Exchange Rate variance (-£3m). Exchange rate variance 2011/12 to 2013/14 (-£4m).
Historic	+59	Technical Factors	Creation and ongoing funding of an Engineering Authority (£9m). £50m due to the Joint Strike Fighter's Technical Baseline Review impact on: a) the System Development and Demonstration now completing in 2015/16 (+£58m), b) In-year delays and revised short-term plans (-£8m).
Historic	-31	Changed Capability Requirements	Deletion of the Ship-Borne Rolling Vertical Landing Key User Requirement due to the Strategic Defence and Security Review decision to change aircraft variant.
Historic	-16	Accounting Adjustments and Re-definitions	Removal of Cost of Capital due to Clear Line of Sight policy implemented by HM Treasury.

Historic	+37	Exchange Rate	MPR2010 In year 2009/10 Exchange Rate variance (+£12m). Exchange rate variance 2010/11 to 2013/14 (+£25m).
Historic	-21	Budgetary Factors	Cost reductions and re-profiling of UK National requirements (-£15m), correction of effect of System Development & Demonstration Contribution non-financial contributions (+£1m), revision of Operational Test & Evaluation contribution (-£2m), reduced forecast for Ship-Borne Rolling Vertical Landing risk mitigation (-£5m).
Historic	-100	Exchange Rate	MPR2009 In year 2008/09 Exchange rate variance (+£4m). Exchange rate variance 2009/10 to 2013/14 (+£2m). MPR08: System Development and Demonstration contribution against MPR07 Versus MPR08 Exchange rate: 2007/08 (-£12m), 2008/09 to 13/14 (-£6m). MPR07: Exchange rate against profile until 2013 (-£11m). Change in dollar/pound exchange rate (MPR06 +£9m; MPR05 -£181m; MPR04 -£85m; MPR03 -£9m; MPR02 +£189m).

Historic	-25	Budgetary Factors	MPR09: In year out turn against forecast – Risk mitigation action leading to minimal level of unforeseen activities emerging (-£10m), Ship Borne Rolling Vertical Landing (-£8m) due to overestimate of the work required at this stage of the programme, slippage in the integration of JCA with the Future Aircraft Carriers (-£6m) due to slower than anticipated progress, correction of in year System Development & Demonstration Contribution (+£2m). Re-profiling of future years -comprising of Ship Borne Rolling and Vertical Landing – reassessment of the funding required to return the aircraft with a higher payload (-£1m), updated assessment of the expected implementation work supporting the Autonomic Logistics Information System – a global system for all maintenance and spares for Joint Strike Fighter (-£2m).
Historic	-5	Budgetary Factors	An increase due to Joint Safe Escape – the ability to deploy weapons safely (+£1m) which was not previously explicitly forecast, refinement of Risk mitigation funding for future years (-£4m), Reduction of Safety Case – a requirement to ensure the aircraft is fit to fly (-£2m) due to the cost to the UK being reduced by the contribution of partner nations.

Historic	-1	Budgetary Factors	MPR08: In year out turn against forecast – including minor changes for 2007/08 (-£14m). UK non System Development and Demonstration National work; Changes to reflect realism: UK Precision Guided Bomb (-£7m), Carrier Variant Future integration (+£1m) and Operational Test and Evaluation (-£7m). Maturation of risk identified since Equipment Plan 07: Autonomic Logistic Information System (+£5m), Conformity European markings (+£6m), Re-assessment of risk (+£6m). Re-assessment of Main programme expenditure: Mission Support (+£2m), Reprogramming (+£10m), Bowman (+£4m). Planning Round 08 Option not included in Equipment Plan07 (-£7m).

Historic	+279	Budgetary Factors	MPR07: Re-assessment of UK National Work - attributable cost which include: UK integration costs: (-£94m), Block 3 weapons adjusted to reflect the latest costing from Prime contractor (+£7m), Safety Case now defined to prepare for contract placement in 2007/08 (+£11m) and re-assessment of risk provision (-£87m). Break out from re-assessment from risk provision above which are: UK basing integration & testing (+£5m), Identification of Operational Test & Evaluation costs (+£26m). Outturn for 2006/07 versus Forecast (-£6m). Adjustment for realism in the cost of the UK non- System Development and Demonstration work resulting from a deeper review of the estimates originally provided by the US (+£43m).Costs benefits gained from use of existing Advance Short Range Air to Air Missile stocks for Joint Combat Aircraft trials (-£6m). Fewer weapon studies undertaken in year (-£1m). Improved project support strategy (-£3m). Better understanding of the integrated nature and requirements of the aircraft systems (+£384m).
Historic	-34	Budgetary Factors	MPR06: Re-profile of UK National Work to mitigate increase in Exchange Rate. Main Drivers are Interoperability (-£1m), Capital Studies (-£1m), UK Integrated Helmet Mounted Display System (-£1m) and Carrier Vessel Future Integration (-£3m). Re-profile of later years Follow on Development (-£3m).MPR05: Reassessment of Dstl & QinetiQ tasking (-£10m). Correction of contingency estimates due to weight risks in MPR04 (-£15m).

Historic	-13	Accounting Adjustments and Re-definitions	MPR07: The Integrated Project Team conducted a review of the project work schedule which has given the team sufficient certainty to include more accurate accruals for the duration of the project (-£10m). Accounting Adjustment made in MPR06 now reflected in re-profiling of programme (-£2m). New Defence Procurement Agency requirement to include Price Forecasting Group costs within the equipment plan (+£1m). Accounting reclassification of feasibility studies (-£2m).
Historic	+5	Accounting Adjustments and Re-definitions	MPR06: Change of accounting treatment for System Development and Demonstration contributions. (+£19m) re-profile of 2005/06 accrual into later years. (-£18m) removal of 2005/06 accrual. Reconciliation of accrual (+£1m). MPR05: Re profiling of UK specific tasks (+£3m).
Historic	-71	Changed Capability Requirements	MPR06: Reviews of the external missile systems for Joint Combat Aircraft resulted in the removal of the requirement for integrating internally mounted Brimstone (-£41m), Paveway II and III (-£1m) capabilities and some internal configurations of the Advanced Short Range Air-to-Air Missile (-£49m). Further UK participation in the Joint Integrated Test Force to reflect UK acceptance into service strategy (+£20m).

Historic	-472	Changed Capability Requirements	MPR05: Provision for Alternate Helmet Mounted Display System removed (-£40m). Reassessment of 2004/05 forecast expenditure (-£12m). Review of miscellaneous requirement including Exchange of Letters Risk Provision (-£40m), design of UK Specific Support (-£3m), Environmental Protection (-£3m) and Autonomic Logistic Information System interoperability (-£6m). Block IV weapons as a result of JSF programme re-alignment (-£368m).
Historic	+55	Technical Factors	MPR07: Re-alignment of programme now included in Development - Ship-Borne Rolling and Vertical Landing (+£55m).
Historic	-29	Technical Factors	MPR05: Reduction of Risk line as a result of programme delays (-£29m).
Historic	-7	Budgetary Factors	Fewer UK studies than originally planned (MPR02 -£1m; MPR03 (-£6m)
Historic	+87	Technical Factors	MPR 04: Re-examination of risk within the overall programme. (+£87m).
Net Variation (£m)	**-308**		

B.3.1.2 Production, Sustainment & Follow on Development

Date	Variation (£m)	Category	Reason for Variation
March 2012	-1	Exchange Rate	MPR12 Exchange rate fluctuations through financial year 2011/12

March 2012	+26	Technical Factors	MPR12 The F35 programme runs concurrent development and production programmes to deliver advanced capability earlier than under legacy programmes. This variance represents the cost against the 3 UK aircraft purchased to date of design changes uncovered during production which require re-design work and implementation of modifications.
March 2012	+12	Budgetary Factors	MPR12: Estimates for over target costs on the first two UK production contracts (+£8m). Diminished Manufacturing Supplies (+£2m). Decreased contract preparation costs (-£2M). Correction of levels of shared non-recurring programme costs (+£2M). Increased costs for aircraft and engine spares (+£2M)
March 2012	-3	Changed Capability Requirements	MPR12 Due to the decision to change variant under the Strategic Defence & Security Review the requirement for Flight Test Instrumentation was removed from the third aircraft.
March 2012	-11	Technical Factors	MPR12 The delayed delivery of the first UK aircraft has delayed commencement of UK flying operations from that per the original approval and therefore reduced the cost of flying in the relevant time period.
Historic	-40	Changed Capability Requirements	No operational conversion unit is now required in the early years and as such support costs in the early years of flying aircraft have been reduced.
Historic	-28	Exchange Rate	MPR2011: Exchange Rate variation (-£28m).
Historic	-11	Budgetary Factors	Improved estimate of production expenditure (-£12m). Delays in Long Lead expenditure (+£1m).
Historic	+31	Exchange Rate	MPR2010: Exchange Rate variation (+£31m).
Historic	-3	Budgetary Factors	Correction of Composite Share Ratio (UK contribution to shared partner costs) from MPR09 (-£3m).

Historic	-30	Procurement Processes	Improved understanding of production cost data related specifically to Operational Test & Evaluation aircraft (-£30m).
Net Variation (£m)	**-58**		

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

B.4 Progress against approved Support / PFI Cost- N/A

B.5 Expenditure to date

Description	**Previous expenditure to 31 March 2011 (£m)**	**In-year expenditure (£m)**	**Total expenditure to 31 March 2012 (£m)**
Assessment Phase	144	0	144
Demonstration and Manufacture Phase	1583	259	1842
Support Phase / PFI Cost	0	0	0
Total Expenditure	**1727**	**259**	**1986**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase
Joint Combat Aircraft	-[2]	January 2001	-

C.2 Actual Boundaries for In Service Date or Initial Operating Capability[3]

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Joint Combat Aircraft	Initial Operating Capability - 6 embarked aircraft at Readiness Level 2 (2-5 days notice to move) – to align with the US acquisition framework and definitions.

C.3.2 Progress against approved Dates- N/A

C.3.3 Timescale variation - N/A

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Joint Combat Aircraft	Yet to be defined	UK MOD continue to move towards Main Gate 4 approval which will officially set the Initial Operating and Full Operating Capability dates per the approved incremental acquisition strategy.

C.5. Support / PFI Contract- N/A

[2] Rather than passing an Initial gate, Joint Combat Aircraft has used a tailored Main-Gate strategy.

[3] The In-Service Date approval will be sought as part of the incremental Production Approval strategy

D Section D: Performance

D.1. Sentinel Score

Project/ Increment Title	Current score	Last years score	Comments
Production Sustainment & Follow-on Development	72% Amber	81% Green	Missed milestones and under staffed team have caused the majority of the decrease in Sentinel scores. Missed milestones arose due to variant uncertainty delaying progress i.e. establishing a Carrier Variant training agreement with the US Navy.
Sustainment Development & Demonstration	89% Green	-	Previous score not available. First score against SDD made in July 2011. This score will form the basis of future MPR submissions though.

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	Initial 10 Force Elements @ Readiness	Yes	
2. Training	Sufficient trained and available personnel	Yes (with risks)	
3. Logistics	Successful integration of Joint Strike Fighter support solution into UK and Joint Supply Chain	Yes (with risks)	
4. Infrastructure	Completion of Main Operating Base	Yes (with risks)	
5. Personnel	Sufficient suitable personnel available for training and support	Yes	
6. Doctrine	Doctrine in place	Yes	
7. Organisation	Suitable command structures in place to support US based Initial Operational Test and Evaluation and Operational Conversion Unit, as well as UK Main Operating Base, Queen Elizabeth Class Carriers and Forward Operating Base operations.	Yes	
8. Information	Integration of Joint Combat Aircraft into UK Ground Information Infrastructure.	Yes (with risks)	
Current forecast (with risks)		8 (4)	0
Last year's forecast (with risks)		8 (4)	0

D.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Training	Changed Capability Requirements	Lack of knowledge of 5th Generation Tactics, Training and Procedures, Low Observable aircraft employment and integration with 4th Generation aircraft and other defence assets may limit initial capability. 5th Generation is a new capability for the UK with little/no current suitably qualified peronnel. The ability to assessing and maintain the Low Observable characterisics of the aircraft is essential to optimise capability. Lead time to generate suitably qualified personnel is estimated to be in the order of five years.
Historic	Logistics	Budgetary Factors	Insufficient Maritime Intra-Theatre Lift to support Joint Combat Aircraft aboard Queen Elizabeth Class Carriers. The potential to cancel the fitment of Cats and Traps would negate potential of a COD delivery capability in the future. Ongoing issue
Historic	Information	Technical Factors	UK Ground Information Infrastructure may be unable to support the requirements of Joint Combat Aircraft Information Systems
Historic	Training	Changed Capability Requirements	Reliance on US Navy training system for initial throughput and training of early instructor pilots and squadron pilots. The UK would be equally reliant on the US Marine Corps for Training should the decision be taken to revert to the STOVL variant.
Historic	Infrastructure	Changed Capability Requirements	Delays to formal announcement of Joint Combat Aircraft Main Operating Base places time pressure on infrastructure provision. The lack of a formal announcement of Joint Combat Aircraft Main Operating Base means that the programme to deliver JCA basing is now behind schedule.

D.3. Performance against Key Performance Measures

D.3.1 Joint Combat Aircraft

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Equipment / Training	Survivability	Yes (with risks)	
2	Equipment / Information	Interoperability	Yes (with risks)	
3	Equipment / Doctrine	Combat Radius	Yes	
4	Equipment	CV Recovery	Yes (with risks)	
5	Equipment	Mission Reliability	Yes	
6	Logistics	Logistic Footprint	Yes	
7	Doctrine	Sortie Generation	Yes	
Current forecast (with risks)			7 (3)	0
Last year's forecast (with risks)			7 (0)	0

D.3.1.2 Key Performance Measures Variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	2	Technical Factors	The programme manager assessed that the UK's aspirations for interoperability using the Carrier Variant of the Joint Strike Fighter were more complex than initially thought. This could lead to cost growth on the programme.
March 2012	1	Changed Capability Requirements	The carrier landing speed of the Carrier Variant remains at the limit of the Joint Strike Fighter US Key Performance Parameter of 145kts and is a watch item.
March 2012	4	Changed Capability Requirements	Concerns over ability for the UK to generate sufficient suitably qualified and equiped personnel in 5th Generation capability
Historic	3	Changed Capability Requirements	Previous report of "at risk" referred to concerns on the performance of the Short Take Off and Vertical Landing variant. Following the Strategic Defence and Security Review announcement to change procurement strategy and using US indices this is now assessed as "Forecast to be met".

Historic	4	Changed Capability Requirements	Previous Key Performance Measure (KPM) referred to Short Take Off and Vertical Landing Mission performance and was reported in MPR10 as "at risk". Following the SDSR announcement to change the procurement strategy to procure the Carrier Variant this KPM has been removed and replaced the US Programme KPM for Carrier Variant recovery measuring the landing speed onto the carrier.
Historic	3	Changed Capability Requirements	Previous report of "at risk" referred to concerns on the performance of the STOVL variant. Following the Strategic Defence and Securtiy Review announcement to change procurement strategy and using US indices this is now assessed as "met forecast".
Historic	3	Technical Factors	Based on modelling and simulation results, the range capability for Joint Strike Fighter Short Take Off and Vertical Landing is approaching the specified target set for UK requirements based on UK Operating scenarios. However, this potential shortfall is based primarily on modelling with very limited experience in actual flight test. Further flight testing is planned to gain an accurate assessment of this potential problem and mitigation actions will be developed accordingly.
Historic	6	Technical Factors	This KUR represents a measure of the amount of support equipment required to allow Joint Combat Aircraft to be deployed on operations. As the Joint Strike Fighter system design has matured, the amount and design of equipment required for deployment in support of Joint Combat Aircraft has reduced to below the contractually specified requirement.

Historic	4	Technical Factors	The Short Take Off element of KUR 04 (based on Invincible Class Carriers not Future Aircraft Carrier) will be changed in the ongoing KUR review, although current projections indicate robust Short Take Off performance from Future Aircraft Carrier. Weight challenges and propulsion system integration issues place the Vertical Landing Bring Back element of KUR 04 at increased risk; the Integrated Project Team has commenced programme action to amend the System Development and Demonstration contract to satisfy a requirement to undertake Ship-borne Rolling Vertical Landing.
Historic	6	Technical Factors	Subject to intensive programme action by Prime Contractor. Funded design options that significantly reduce risk have been identified and further changes will be considered in due course.
March 2011	4	Changed Capability Requirements	Previous Key Performance Measure referred to Short Take Off and Vertical Landing Mission performance and was reported in MPR10 as "at risk". Following the Strategic Defence and Security Review announcement to change the procurement strategy to procure the Carrier Variant this Key Performance Measure has been removed and replaced the US Programme Key Performance Measure for Carrier Variant recovery measuring the landing speed onto the carrier.
Historic	3	Technical Factors	Based on modelling and simulation results, the range capability for Joint Strike Fighter Short Take Off and Vertical Landing is approaching the specified target set for UK requirements based on UK Operating scenarios. However, this potential shortfall is based primarily on modelling with very limited experience in actual flight test. Further flight testing is planned to gain an accurate assessment of this potential problem and mitigation actions will be developed accordingly.

Historic	6	Technical Factors	This KUR represents a measure of the amount of support equipment required to allow Joint Combat Aircraft to be deployed on operations. As the Joint Strike Fighter system design has matured, the amount and design of equipment required for deployment in support of Joint Combat Aircraft has reduced to below the contractually specified requirement.
Historic	4	Technical Factors	The Short Take Off element of KUR 04 (based on Invincible Class Carriers not Future Aircraft Carrier) will be changed in the ongoing KUR review, although current projections indicate robust Short Take Off performance from Future Aircraft Carrier. Weight challenges and propulsion system integration issues place the Vertical Landing Bring Back element of KUR 04 at increased risk; the Integrated Project Team has commenced programme action to amend the System Development and Demonstration contract to satisfy a requirement to undertake Ship-borne Rolling Vertical Landing.
Historic	6	Technical Factors	Subject to intensive programme action by Prime Contractor. Funded design options that significantly reduce risk have been identified and further changes will be considered in due course.

D.3.1.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
March 2012	2	At Risk	Reduced interoperability may limit opportunities for allied aircraft to operate from the decks of Queen Elizabeth Class Aircraft Carriers.
March 2012	1	At Risk	Action taken by Community of Interest 1 community and Air Command to engage with US Air Force to understand support requirements to maintain Low Observable characteristics will address this KPM. US National Disclosure Policy and UK access to required data remain issues to overcome.

March 2012	4	At Risk	Joint Strike Fighter programme development action will address this Key Performance Measure
Historic	3	To be Met	As a result of the decision of purchase the Carrier Variant this measure is now regarded as to be met.
Historic	4	To be Met	As a result of the decision of purchase the Carrier Variant this measure is now regarded as to be met.
Historic	6	To be Met	As a result of the 2010 Strategic Defence and Security Review decision to purchase the Carrier Variant, this measure is now assessed as 'To be met'
Historic	3	At Risk	Inability to strike some targets at the extreme range capability of aircraft and weapon system.
Historic	4	At Risk	Severely limits the operational effectiveness of the platform and result in high waste of weapons

Project Title		
Lynx Wildcat		
Team Responsible		
Lynx Project Team		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Commodore Wayne Keble (Air and Littoral Manoeuvre Capability)	01 February 2011	01 March 2013
Project/Increment Name	**Current Status of Projects /**	
Lynx Wildcat	Post-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

The Lynx Wildcat capability was developed to meet the requirements for a dedicated small helicopter for use in both the Land (Battlefield Reconnaissance Helicopter Requirement) and Maritime (Surface Combatant Maritime Rotorcraft Requirement) environments to replace the current Lynx fleet which is reaching its life end. Lynx Wildcat is a single-source, combined helicopter procurement programme with Westlands Helicopters Ltd which follows More Effective Contracting principles. Project approval is for 80 aircraft, with funding for 62 held by the Integrated Project Team. The current requirement is for 30 Battlefield Reconnaissance Helicopters, 8 Battlefield Reconnaissance Helicopters (Light Assault Helicopter Role) and 28 Surface Combatant Maritime Rotorcraft.

A.2 The Assessment Phase

Initial Gate approval was given in December 2001 for the Battlefield Light Utility Helicopter and in September 2002 for the Surface Combatant Maritime Rotorcraft. Following review under the Future Rotorcraft Programme the Battlefield Light Utility Helicopter requirement matured into the Battlefield Reconnaissance Helicopter requirement.

Battlefield Light Utility Helicopter:
The Assessment Phase benchmarked Westland Helicopter Ltd's Lynx Wildcat proposal against alternative off-the-shelf solutions from other potential suppliers and required the company to demonstrate the necessary level of performance to successfully deliver the Demonstration and Manufacture phase.

Surface Combatant Maritime Rotorcraft:
A single tender contract was placed with Westland Helicopter Ltd to develop and de-risk their Lynx Wildcat proposal to meet the Surface Combatant Maritime Rotorcraft requirement in conjunction with the approved Battlefield Light Utility Helicopter programme.

Procurement Strategy:
Two procurement strategies were considered. The first was to run a competition and second, to pursue the Westland Helicopter Lynx Wildcat proposal on a single tender basis - with an option to switch from single tender to competition should the Assessment Phase indicate that the Lynx Wildcat solution was unlikely to be cost effective. The second strategy was the selected one.

The result of the Assessment Phase considered the Lynx Wildcat to be the most likely of the options to deliver the required capability by the In-service Date. This gave the benefit of maintaining industrial capability in the UK. Hence a single tender approach was judged most likely to offer both the best technical solution and best value for money overall.

The Assessment Phase successfully de-risked a number of key requirements, including secure communications, mission systems and engine certification. Furthermore, Westland Helicopter Ltd's Super Lynx 300 export programme demonstrated their capability to insert new T-800 engines, glass cockpit and avionics into the Lynx aircraft.

A.3 Project History since Main Gate

Within the Department the aircraft are to be known as Wildcat Mk1 (Army Helicopter) and Wildcat Mk1 (Helicopter Maritime Attack).

The Demonstration & Manufacture contract was let in June 2006 to deliver 70 aircraft: 40 Battlefield Reconnaissance Helicopters for the Army and 30 Surface Combatant Maritime Rotorcraft for the Navy with costed options for five more platforms of each type. Preliminary, Interim, Air Vehicle and Air Vehicle & Mission System Critical Design Reviews were successfully achieved in January 2007, October 2007, April 2008 and August 2009 respectively. The first airframe was delivered to the Westland build line in November 2008 and a successful 'First Flight' was achieved in November 2009 in accordance with the schedule contracted in June 2006. All three trials aircraft are now flying within the Flight Test programme and Production aircraft build commenced in July 2010. Delivery of first production aircraft to the Army commences in April 2012. The Equipment Examination (2008) concluded that reductions could be realised in procurement costs if the quantities were reduced to 34 Reconnaissance Helicopters and 28 Surface Combatant Maritime Rotorcraft, with the impact on delivered capability minimised through introducing design changes to achieve greater versatility between the two aircraft variants. The protracted period of uncertainty surrounding the project ended in December 2008 with the Ministerial announcement confirming that the project would proceed to full scale production. A Planning Round 2010 Option was run to address the legislative and safety requirement to fit all combat aircraft including helicopters with fuel system survivability measures.

Through-life training & support solutions have been developed as part of the project. An Information Note was approved in July 2007 to submit the Support Solution Review Note in September 2009. Approval was also given for the Training Service Initial Gate Business Case in August 2007 based on the 4-stage PFI Treasury Approval process. While investigating alternative ways to deliver the Lynx Wildcat capability during the Equipment Examination, the opportunity to deliver reduced through life costs was identified. A Review note was submitted to the Investment Approvals Board in December 2008 and approved in January 2009, detailing a new strategy to explore a single source, integrated Support Solution and Training Delivery Service through the aircraft manufacturer, AgustaWestland, and reflected a revised recommendation submission date to the Investment Approvals Board in late 2010. The contract for the provision of Training Capital Equipment, required to support aircrew, groundcrew and maintainer training was let in February 2011 and the Wildcat Integrated Training and Support contract was let in January 2012.

Planning Round 2011 Option resulted in a change of aircraft mix to a total fleet of 66 Wildcat Aircraft comprising 30 Battlefield Reconnaissance Helicopters, 8 Battlefield Reconnaissance Helicopters (Light Assault Helicopter Role) and 28 Surface Combatant Maritime Rotorcraft. A further Planning Round 2011 Option was run to revise the profile of the resources available for the Wildcat project between financial year 2014/2015 and financial year 2015/2016.

A.4 In-year Progress

Production aircraft build continues to schedule with six Army Helicopter having achieved flight milestones with a further four Army Helicopter and two Helicopter Maritime Attack aircraft in production. The build standard for the first batch of production aircraft to be delivered to the Army has been confirmed and the Interim Certificate of Design was issued in March 2012.

Significant unanticipated activity has been undertaken to satisfy the emerging Regulatory Instructions issued by the recently formed Military Aviation Authority (MAA). Following the issue of the Aircraft Release Recommendations by the Independent Technical Evaluator (Aircraft Test and Evaluation Centre (ATEC)) the Aircraft Release to Service Recommendations will be endorsed by Director Helicopters and forwarded to the MAA and the Army Release to Service Authority for approval in April 2012 to enable flight by Service personnel.

A Planning Round 2012 Option is being run to address the incorporation of an Aircraft Collision Avoidance System to all combat helicopters including Wildcat. This is to be managed as a separate project.

The Light Assault Helicopter Requirement is subject to ongoing work to inform the approval decision. If the Department concludes during the planning process in 2012/13 that the LAH capability is not part of the Core Programme then aircraft numbers and costs will be amended to reflect the existing requirement and this will be shown in MPR13.

Under the contract amendment to the Future Lynx Demonstration & Manufacture contract, the Training Capital Equipment is being delivered by AgustaWestland through two sub-contractors: the Aircrew Training Equipment under subcontract to Indra (Madrid) is progressing to schedule, but a delay has recently been announced to the Maintenance Training Equipment subcontract with Pennant. The training building infrastructure is running to schedule.

Following approval in December 2011, AgustaWestland were awarded the Wildcat Integrated Support and Training (WIST) contract on 26 January 2012 for Pricing Period 1 (to 31 March 2017) within the framework of a through-life, single source contracting arrangement with integral five yearly re-pricing and exit strategies. The contract provides the full range of Technical and Materiel Support Services, a Support Management Organisation and a Training Service. Following the establishment phase, it will 'go live' to support the first aircraft delivery from April 2012.

Approval was also granted to contract the Logistic Enablers which includes the Initial Provisioning of spares and constitution of Deployable Spares Packs as well as funding for support activities outside of Wildcat Integrated Support and Training, such as obsolescence resolution and out of scope spares, required over the period.

The Support and Training Key Performance Indicators will be reported on in MPR 13.

A.5 Capability Risks

These projects provide ongoing light helicopter capability in the land, maritime & littoral environments, beyond the Out of Service Dates of the current Lynx Helicopter fleet and introduce an enhanced maritime & littoral attack capability. The reduction in aircraft quantities arising from the Equipment Examination is predicated upon a more versatile design solution allowing both aircraft variants to be utilised across a wider range of roles and environments, but with some minor trade-off against the achieved performance. This will place a greater necessity on the need to manage the two variants within a common in-service framework with commonality within the Defence Lines of Development.

The April 2011 reduction of Battlefield Reconnaissance Helicopters from 34 to 30 will reduce the capacity in which to meet the requirement for aviation Reconnaissance, Surveillance, Target Acquisition and Intelligence gathering in Land/Littoral Manoeuvre operations but remains sufficient to meet the defence requirement.

The main investment decision point for Future Anti-Surface Guided Weapon (Heavy), which is to be installed on the Surface Combatant Maritime Rotorcraft, was delayed in year. This was due to the need to secure approval from France. Discussions are still on-going, but are dependent on the outcome of the French Government's spending review that is currently being undertaken. There will now be at least a 19 month gap between the existing capability leaving service and the new missile being available. The Department may extend the life of the existing missile to mitigate the gap.

A.6 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
Future Air to Surface Guided Weapons (Heavy)	The approval decision for the procurement of Future Air to Surface Guided Weapons (Heavy) is expected to receive IAC approval in April 2012 with an ISD of January 2018	Pre-Main Gate
Future Air to Surface Guided Weapons (Light)	The approval decision for the procurement of Future Air to Surface Guided Weapons (Light) has not yet been made and hence its ISD is not yet established	Pre-Main Gate
Tactical Data Link	The approval decision for the procurement of Tactical Data Link variant to be fitted to Wildcat has not yet been made and hence its In-Service Date is not yet established.	Pre-Main Gate

A.7 Procurement Strategy

Project / Increment Title	Contractor	Contract Scope	Contract Type	Procurement Route
Lynx Wildcat	Westland Helicopters Ltd, Yeovil	Demonstration to Manufacture	Target Cost Incentive fee with a maximum price	Non-Competitive - UK

A.8 Support Strategy

Description
The Wildcat Support and Training solution considered an Industry-led combined training and support service to be delivered under integrated operational support arrangements. The Industry proposal was compared to a Value for Money Benchmark to determine value for money and is consistent with the Director Helicopters Common Support Framework for Integrated Operational Support. On completion of analysis, a recommendation was made to the Investment Approvals Board via a Review Note which received Approval in December 2011 and AgustaWestland were awarded the Wildcat Integrated Support and Training contract on 26th January 2012. See section A.4.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
Lynx Wildcat	Westland Helicopters Ltd, Yeovil	In-Service Training and Support	Firm Price	Non-Competitive - UK

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Lynx Wildcat	59	57	-2	4%	3%
Total (£m)	**59**	**57**	**-2**	**4%**	**3%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Lynx Wildcat	1669	1803	1867

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Lynx Wildcat	1803	1663	-140	+19
Total (£m)	**1803**	**1663**	**-140**	**+19**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.1.1 Lynx Wildcat

Date	Variation (£m)	Category	Reason for Variation
April 2011	+19	Accounting Adjustments and Re-definitions	Increase in the rate of VAT from 17.5% to 20%
March 2012	+4	Budgetary Factors	Financial Year 2011/2012 In-Year overspend to enable consistent financial treatment of System Requirement Document Milestones.
March 2012	-4	Budgetary Factors	Financial Year 2012/2013 aproved underspend as a result of overspend in Financial year 2011/2012.
Historic	+12	Budgetary Factors	Approved Overspend for Financial Year 2011/2012 to reflect delayed spend in respect of Training Capital Equipment Building
Historic	-12	Budgetary Factors	Financial Year 2010/2011 In-year saving to reflect the delay to contract let for the construction of Training Capital Equipment Building
Historic	-26	Budgetary Factors	Planning Round 11 Transfer to balance approved overspend in Financial Year 2010/2011
Historic	+26	Budgetary Factors	Approved Overspend for Financial Year 2010/2011 to reflect corrected Training Capital Accruals position

Historic	-10	Budgetary Factors	Planning Round Transfer to amend Option E11AL041S
Historic	+10	Budgetary Factors	Planning Round 11 Option E11AL041S - Revised Resource profile
Historic	-33	Budgetary Factors	Planning Round 11 Option (E11AL003S) to reduce Lynx Wildcat aircraft from 70 to 66
Historic	+70	Changed Capability Requirements	Rotary Wing Strategy Funding to increase the number of aircraft to be procured from 62 to 70
Historic	+2	Accounting Adjustments and Re-definitions	Change in rate of VAT from 17.5% to 20% - impact on Financial Year 2010/2011 outturn
Historic	-2	Budgetary Factors	Removal of Cost of Capital due to Clear Line of Sight policy implemented by HM Treasury.
Historic	+8	Changed Capability Requirements	Planning Round 2010 Option – Rotary Wing – Fuel System Survivability Measures.
Historic	-2	Accounting Adjustments and Re-definitions	The level of risk which has materialised has not been as great as anticipated within the Main Gate Business Case.
Historic	-8	Budgetary Factors	Lynx Wildcat programme cost reduction related to funding re-profiling within Helicopter Cluster.
Historic	-194	Budgetary Factors	Planning Round 2009 Option – Lynx Wildcat descope and reduce numbers from 80 to 62.
Net Variation (£m)	**-140**		

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

Increment Title	Category	Explanation
Lynx Wildcat	Budgetary Factors	The April 2011 reduction of Battlefield Reconnaissance Helicopters from 34 to 30 will reduce the capacity in which to meet the requirement for aviation Reconnaissance, Surveillance, Target Acquisition and Intelligence gathering in Land/Littoral Manoeuvre operations but remains sufficient to meet the defence requirement.
Lynx Wildcat	Budgetary Factors	The reduction in aircraft quantities arising from the 2008 Equipment Examination is predicated upon a more versatile design solution allowing both aircraft variants to be utilised across the range of Battlefield Reconnaissance Helicopter and Surface Combatant Maritime Rotorcraft roles and environments, but with some minor trade-off against the achieved performance. This will place a greater necessity on the need to manage the two variants within a common in-service framework with commonality within the Defence Lines of Development.

B.4 Progress against approved Support / PFI Cost

Project/Increment Title	Approved Cost (£m)	Forecast cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Wildcat Integrated Support and Training	314	303	-11	-11
Total (£m)	**314**	**303**	**-11**	**-11**

B.4.1 Cost variation against approved Support / PFI Cost

B.4.1.1 Lynx Wildcat

Date	Variation (£m)	Category	Reason for Variation
March 2012	-10	Budgetary Factors	Refinement of Initial Provisioning requirements.
December 2011	-1	Budgetary Factors	Additional risk to be managed through the annual financial management processes, created as a result of changes to cluster manpower structures creating further uncertainty.
Net Variation (£m)	**-11**		

B.4.2 Operational Impact on Support / PFI Cost

Increment Title	Category	Explanation
Lynx Wildcat		

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	57	0	57
Demonstration and Manufacture Phase	736	228	964
Support Phase / PFI Cost	0	13	13
Total Expenditure	**793**	**241**	**1034**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase
Lynx Wildcat - Battlefield Reconnaissance Helicopter	December 2001	June 2006	54
Lynx Wildcat - Surface Combatant Maritime Rotorcraft	September 2002	June 2006	45

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Approved	Budgeted For	Latest Approved
Lynx Wildcat - Battlefield Reconnaissance Helicopter	May 2013	January 2014	August 2014
Lynx Wildcat - Surface Combatant Maritime Rotorcraft	May 2014	January 2015	August 2015

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Lynx Wildcat - Battlefield Reconnaissance Helicopter	In-Service Date is defined as 4 force elements at readiness to deploy on a small scale focussed intervention operation.
Lynx Wildcat - Surface Combatant Maritime Rotorcraft	In-Service Date is defined as one deployable aircraft with logistic support, trained aircrew and ground crew in place.

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Lynx Wildcat - Battlefield Reconnaissance Helicopter	January 2014	August 2014	+7	+7
Lynx Wildcat - Surface Combatant Maritime Rotorcraft	January 2015	January 2015	0	0

C.3.3 Timescale variation

C.3.3.1 Lynx Wildcat - Battlefield Reconnaissance Helicopter

Date	Variation (+/- months)	Category	Reason for Variation
March 2012	+7	Technical Factors	The Battlefield Reconnaissance Helicopter 50% confidence date has been moved from Jan 2014 to August 2014. This revised figure has resulted from a recent risk review of the key enablers which are on the critical path for the In-Service Date. The 50% confidence delivery forecasts for the Training Capital Equipment (TCE) (aircrew and maintainer) have been revised in light of emerging technical and programme risks, recent changes to delivery dates published by the prime and sub-contractors and continued manpower resource pressure within the Project Team. For the Battlefield Reconnaissance Helicopter Fielding Plan and In-Service Date these equipments are on critical path hence the In-Service Date has moved commensurately. The revised Training Capital Equipment delivery dates are as follows: Full Mission Simulator - December 2013, Cockpit Procedures Trainer - February 2014, Aircraft Systems Trainer - November 2013 and Weapons & Avionics - February 2014.
Historic	+3	Procurement Processes	Since Main Gate, Project advised that the new Treasury 4 Gate Approval process for candidate PFI projects needed to be adopted. This process had the potential to add one year to the procurement timescale for the Synthetic Training Service. Sufficiently trained aircrew are required before In-Service Date can be declared and it was considered prudent to declare an In-Service Date slip of 3 months while mitigation work matured.
Historic	-3	Procurement Processes	Flight Simulation and Synthetic Trainers Integrated Project Team Lynx Wildcat Training Services Initial Gate Business Case was approved by the Investment Approvals Board in August 2007. The required mitigation activity has been completed and has brought the Training Service In-Service Date in line with the In-Service Date and the three months recovered.
Net Variation (+/- months)	**+7**		

C.3.3.2 Surface Combatant Maritime Rotorcraft

Date	Variation (+/- months)	Category	Reason for Variation
Historic	+3	Procurement Processes	Since Main Gate, Project advised that the new Treasury 4 Gate Approval process for candidate PFI projects needed to be adopted. This process had the potential to add one year to the procurement timescale for the Synthetic Training Service. Sufficiently trained aircrew are required before In-Service Date can be declared and it was considered prudent to declare an In-Service Date slip of 3 months while mitigation work matured.
Historic	-3	Procurement Processes	Flight Simulation and Synthetic Trainers Integrated Project Team Future Lynx Training Services Initial Gate Business Case was approved by the Investment Approvals Board in August 2007. The required mitigation activity has been completed and has brought the Training Service In-Service Date in line with the In-Service Date and the three months recovered.
Net Variation (+/- months)	**0**		

C.3.4 Other costs / savings resulting from timescale variation

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

Project/Increment Title	Operational Impact
Lynx Wildcat	An action has been placed at the Wildcat Project Board to establish the Operational Impact of this Training Capital Equipment timescale variation, together with a pan Defence Lines of Development assessment of progress and risks to report to the Project Board in September 2012.

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Lynx Wildcat - Battlefield Reconnaissance Helicopter	Sufficient aircraft and trained crews to generate the required number of sustainable Force Elements at Readiness; the Battlefield Reconnaissance Helicopter is compliant with the endorsed threshold User Requirement Document and the legacy Lynx Marks 7 and 9 are no longer required to contribute any element of support to the delivery of Land or Littoral Manoeuvre Capability.	The In-Year timescale variation of the In Service Date is not anticipated to affect the achievement of Full Operating Capability, but is still being assessed and will be dependent on the conclusions of the In Service Date/Initial Operating Capability impact assessment reported at C.3.5.
Lynx Wildcat - Surface Combatant Maritime Rotorcraft	Sufficient, sustainable trained crews and aircraft to generate the required number of Force Elements at Readiness; the Surface Combatant Maritime Rotorcraft is compliant with the endorsed threshold User Requirement Document and the legacy platform is no longer required to contribute any element of Maritime Capability.	Progress continues towards Full Operating Capability

C.5. Support / PFI Contract

C.5.1 Scope of Support / PFI Contract

Project/Increment Title	Scope
Wildcat Integrated Support and Training	The Logistic Support Date (LSD) is the date, 3 months in advance of the delivery of the first aircraft, by which all of the support enablers required to support the aircraft are either in place or confirmed will be in place for the first aircraft delivery. Many individual elements of LSD were contracted under the D&M contract. However, the key LSD deliverable is the platform Support solution, for Wildcat this is the Wildcat Integrated Support and Training (WIST) contract. From contract award 26 January 2012 to first aircraft delivery on 16 April 2012, WIST is in its establishment phase, such that it will be Operational from the date of the first aircraft delivery to the MOD 'Go live' date.

C.5.2 Progress against approved Support / PFI Contract Go-Live Date

Project/Increment Title	Approved Date	Actual Date	Variation (+/- months)	In-year Variation (+/- months)
Wildcat Integrated Support and Training	April 2012	April 2012	0	0

C.5.2.1 Go-Live Date Variation

C.5.3 Progress against approved Support / PFI Contract End Date

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-year Variation (+/- months)
Wildcat Integrated Support and Training	March 2017	March 2017	0	0

C.5.3.1 End of Contract Date Variation

C.5.4 Other costs / savings resulting from Support Cost variation

C.5.5 Operational Impact of Support / PFI Support Contract variation

D Section D: Performance

D.1. Sentinel Score

Current score	Last years score	Comments
62% AMBER	78% GREEN	Slippage in Wildcat Army Helicopter Release to Service 1 (Training) from 29 February 2012 to 23 April 2012. Declared slippage of Army Helicopter In Service Date 50% date from January 2014 to August 2014.

D.2 Performance against Defence Lines of Development

D.2.1 Battlefield Reconnaissance Helicopters

D.2.1.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	The provision of the Wildcat helicopter platform, including systems and weapons, expendable and non-expendable, needed to outfit/equip respective Army and Royal Navy services to the required Performance specification.	Yes (with risks)	
2. Training	The Wildcat Training Solution will deliver appropriately qualified personnel, to allow Front Line Commands to generate the Force Elements at Readiness required for contingent tasks in accordance with their respective Army and Royal Navy	Yes (with risks)	
3. Logistics	The Logistics DLoD covers the provision of the logistic support solution required to sustain the Wildcat Mk 1 fleet capability until the Out of Service Date, to levels specified in the Joint Business Agreement with both Joint Helicopter Command and Navy Command.	Yes (with risks)	
4. Infrastructure	The Infrastructure DLoD embraces the investment required in the UK MoD estate to deliver the infrastructure necessary to support Wildcat capability, associated equipments and personnel. An Embarked Infrastructure sub-DLoD to cover embarked Wildcat operations is also considered.	Yes (with risks)	
5. Personnel	The timely provision of sufficient, capable, trained, equipped and motivated personnel to deliver Defence outputs, both now and in the future for Wildcat operations.	Yes (with risks)	
6. Doctrine	The Concepts and Doctrine DLoD for both Army and Royal Navy variants of the Wildcat Mk1 aircraft to Full Operational Capability is bounded by: the need to provide a timely, coherent and dynamic Concept of Use (CONUSE) for each variant; and devise and deliver relevant and updated tactical doctrine, including Tactics, Techniques and Procedures, for Wildcat training and, ultimately, operational flying.	Yes	

7.	Organisation	Establish an operational and non-operational organisational relationships of people for the Wildcat force. It typically includes military force structures, MoD civilian organisational structures and Defence contractors providing support.	Yes	
8.	Information	The Information DLOD is concerned with the contribution that data, information and knowledge make to Wildcat operational capability.	Yes	
Current forecast (with risks)			8 (5)	0
Last year's forecast (with risks)			8 (4)	0

D.2.1.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Equipment	Budgetary Factors	See detail in Battlefield Helicopter Reconnaissance KUR table D.3.1.2 comments. This refers to the de-scope of Bowman data communications.
Historic	Personnel	Budgetary Factors	Post the Strategic Defence and Security Review, funding and manning constraints place risk on the ability of the Front Line Commands to support Wildcat, particularly for the Battlefield Reconnaissance Helicopter.
Historic	Training	Procurement Processes	Training proposal lacks pricing information & uncertainty from contractor as to when this will be available. Risk in meeting approvals timescales due to Election/summer recess. **MPR2011:** Training Capital Equipment contract placed 4 February 2011. Affordability challenges with Training Delivery proposal caused delay to contract award. A phased approach to introduction of Training is being followed.
Historic	Logistics	Procurement Processes	Support proposal lacks pricing information & uncertainty from contractor as to when this will be available. Risk in meeting approvals timescales due to Election/summer recess. **MPR2011:** Industry support solution proposal received early 2011. Affordability discussions ongoing. Logistic Support Date will be achieved through a phased introduction of Support.
Historic	Infrastructure	Budgetary Factors	Wildcat Infrastructure team now formed and managing implementation. Funding issues remain. Approvals timelines co-incident with Election and may lead to planning blight.
Historic	Personnel	Changed Capability Requirements	Force Structure guidance now provided and levels of manning identified.

Historic	Infrastructure	Budgetary Factors	Full infrastructure requirement not yet clear: Awaiting Detailed proposal for training and logistics (support solution). Awaiting clarity on funding availability. **MPR2011:** Funding profile issues remain, complicated by uncertainty while awaiting outcome of Strategic Defence and Security Review, Planning Round 11 and Rotary Wing Strategy implementation.
Historic	Personnel	Changed Capability Requirements	Manning process agreed. Awaiting personnel Requirement from Organisation and Training Line of Development.

D.2.2 Surface Combatant Maritime Rotorcraft

D.2.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	The provision of the Wildcat helicopter platform, including systems and weapons, expendable and non-expendable, needed to outfit/equip respective Army and Royal Navy services to the required Performance specification.	Yes(with Risks)	
2. Training	The Wildcat Training Solution will deliver appropriately qualified personnel, to allow Front Line Commands to generate the Force Elements at Readiness required for contingent tasks in accordance with their respective Army and Royal Navy Plans.	Yes	
3. Logistics	The Logistics DLoD covers the provision of the logistic support solution required to sustain the Wildcat Mk 1 fleet capability until the Out of Service Date, to levels specified in the Joint Business Agreement with both Joint Helicopter Command and Navy C	Yes	
4. Infrastructure	The Infrastructure DLoD embraces the investment required in the UK MoD estate to deliver the infrastructure necessary to support Wildcat capability, associated equipments and personnel. An Embarked Infrastructure sub-DLoD to cover embarked Wildcat operati	Yes	
5. Personnel	The timely provision of sufficient, capable, trained, equipped and motivated personnel to deliver Defence outputs, both now and in the future for Wildcat operations.	Yes(with Risks)	
6. Doctrine	The Concepts and Doctrine DLoD for both Army and Royal Navy variants of the Wildcat Mk1 aircraft to Full Operational Capability is bounded by: the need to provide a timely, coherent and dynamic Concept of Use (CONUSE) for each variant; and devise and deli	Yes	

7. Organisation	Establish an operational and non-operational organisational relationships of people for the Wildcat force. It typically includes military force structures, MoD civilian organisational structures and Defence contractors providing support.	Yes	
8. Information	The Information DLOD is concerned with the contribution that data, information and knowledge make to Wildcat operational capability.	Yes	
Current forecast (with risks)		8 (2)	0
Last year's forecast (with risks)		8 (4)	0

D.2.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Training	Technical Factors	No longer at risk. Surface Combatant Maritime Rotorcraft training not required until January 2014; Synthetic Training Equipment delay has no impact on this delivery.
March 2012	Equipment	Budgetary Factors	See detail in Battlefield Helicopter Reconnaissance KUR table D.3.1.2 comments. This refers to the de-scope of Bowman data communications.
March 2012	Personnel	Budgetary Factors	manning requirement at Main Operating Base and within Defence Equipment & Support places the ability of Front Line Commands to supply personnel at risk.
March 2012	Infrastructure	Budgetary Factors	No longer at risk - Surface Combatant Maritime Rotorcraft infrastructure option downselected.
March 2012	Logistics	Procurement Processes	No longer at risk. Support contract signed January 2012. Surface Combatant Maritime Rotorcraft Logs enablers not required until October 2012 and will allready be in place to support Battlefield Reconnaissance Helicopter first delivery in May 2012.
Historic	Personnel	Budgetary Factors	Post the Strategic Defence and Security Review, funding and manning constraints place risk on the ability of the Front Line Commands to support Wildcat, particularly for the Battlefield Reconnaissance Helicopter.
Historic	Training	Procurement Processes	Training proposal lacks pricing information & uncertainty from contractor as to when this will be available. Risk in meeting approvals timescales due to Election/summer recess. **MPR2011:** Training Capital Equipment contract placed 4 February 2011. Affordability challenges with Training Delivery proposal caused delay to contract award. A phased approach to introduction of Training is being followed.

Historic	Logistics	Procurement Processes	Support proposal lacks pricing information & uncertainty from contractor as to when this will be available. Risk in meeting approvals timescales due to Election/summer recess. **MPR2011:** Industry support solution proposal received early 2011. Affordability discussions are ongoing. Logistic support date will be achieved through a phased introduction of support.
Historic	Infrastructure	Budgetary Factors	Wildcat Infrastructure team now formed and managing implementation. Funding issues remain. Approvals timelines co-incident with Election and may lead to planning blight.
Historic	Personnel	Changed Capability Requirements	Force Structure guidance now provided and levels of manning identified.
Historic	Infrastructure	Budgetary Factors	Full infrastructure requirement not yet clear: Awaiting Detailed proposal for training and logistics (support solution). Awaiting clarity on funding availability. **MPR2011:** Funding profile issues remain, complicated by uncertainty while awaiting outcome of Strategic Defence and Security Review, Planning Round 11 and Rotary Wing Strategy implementation.
Historic	Personnel	Changed Capability Requirements	Manning process agreed. Awaiting personnel Requirement from Organisation and Training Line of Development.

D.3. Performance against Key Performance Measures

D.3.1 Lynx Wildcat - Battlefield Reconnaissance Helicoper

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
01		The user requires a manned rotorcraft capable of independent and co-operative, intelligent action, which provides commanders with a sustainable, timely, responsive and accurate, enduring Intelligence, Surveillance, Target Acquisition and Reconnaissance capability at long range across the full spectrum of conflict.	Yes	
02		The user requires the capability to acquire, designate targets and direct the full spectrum of joint fires via network enabled communications.	Yes (with risks)	
03		The user shall be provided with a capability that is available for the required sustained level of operational effect.	Yes	
04		The user shall be able to deliver operational capability with a high likelihood of survival.	Yes	
05		The user shall be provided with a capability that can interoperate with relevant military and civil authorities.	Yes	
06		The user shall have a capability that can operate within defined natural and man-made environmental conditions.	Yes	

07		The user shall be provided with a capability that can operate from both land and sea bases to target areas on land or sea.	Yes	
08		The user shall be provided with a capability that can be deployed worldwide.	Yes (with risks)	
Current forecast (with risks)			8 (2)	0
Last year's forecast (with risks)			8 (2)	0

D.3.1.2 Key Performance Measures Variation

Date	Key Performance Measure	Category	Reason for Variation
Historic	02	Change in Associated Project	One of the elements (Targeting) of this Key Performance Measure is considered to be at risk as the release of Bowman software (Bowman Combat and Infrastructure Platform 6.0.) that would have enabled integration of Bowman data onto Wildcat is not funded. Alternatives have been identified and are being scoped. This functionality is not required until Full Operating Capabilty
Historic	08	Budgetary Factors	One of the five elements of this Key Performance Measure (self-deploy) was traded-out by the 2008 Equipment Examination.

D.3.1.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
Historic	02	To be met (with risks)	The ability to achieve some missions is degraded without Bowman data, but alternative solutions will minimise this impact.
Historic	08	To be met (with risks)	There is a minimal operational impact from this Key Performance Measure trade, in that only a small number of the mission scenarios are affected. Should funding be identified at a later date, this capability could be re-introduced to the design solution.

D.3.2 Lynx Wildcat - Surface Combatant Maritime Rotorcraft

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
01		The user requires a manned rotorcraft capable of independent and co-operative, intelligent action, which provides commanders with a sustainable, timely, responsive and accurate, enduring Intelligence, Surveillance, Target Acquisition and Reconnaissance.	Yes (with risks)	
02		The user requires the capability to acquire, designate targets and direct the full spectrum of joint fires via network enabled communications.	Yes	
03		The user shall be able to autonomously and co-operatively attack using appropriate rapid and flexible fires with the joint battlespace.	Yes (with risks)	
04		The user requires a vertical lift capability to deploy and support joint forces, as operationally effective units, from land or sea	Yes	
05		The user shall be provided with a capability that is available for the required sustained level of operational effect.	Yes	
06		The user shall be able to deliver operational capability with a high likelihood of survival.	Yes	

07		The user shall be provided with a capability that can interoperate with relevant military and civilian authorities.	Yes (with risks)	
08		The user shall have a capability that can operate within defined natural and man-made environmental conditions.	Yes	
09		The user shall be provided with a capability that can operate from both land and sea bases to target areas on land or sea.	Yes	
10		The user shall be provided with a capability that can be deployed worldwide.	Yes (with risks)	
Current forecast (with risks)			10 (4)	0
Last year's forecast (with risks)			10 (4)	0

D.3.1.2 Key Performance Measures Variation

Date	Key Performance Measure	Category	Reason for Variation
Historic	03	Change in Associated Project	One of the elements of this Key Performance Measure is considered to be at risk, due to rescheduling of Team Complex Weapons approval milestones & a delay in achieving Future Air-to-Surface Guided Weapons (Heavy) co-operative funding from France resulting in the aircraft & weapons programmes potentially being misaligned. Work is currently underway to examine the extent of the issue & establish mitigation.
Historic	07	Change in Associated Project	One of the elements (transfer of secure data line-of-sight information to a third party) of this Key Performance Measure is considered to be at risk due to lack of Tactical Data Link funding. The Option to fund the Link22 for Wildcat was not taken forward in Planning Round 2011.
Historic	01	Budgetary Factors	The 2008 Equipment Examination put `at risk` the surveillance/reach element of this Key Performance Measure.

Historic	10	Budgetary Factors	One of the five elements of this Key Performance Measure (self-deploy) has been traded-out by the Equipment Examination.
Historic	01	Technical Factors	One of the ten elements of this Key Performance Measure is considered to be at risk. The contracted position, with respect to the installed radar detection performance, does not meet the Key Performance Measure. Work is ongoing between the Integrated Project Team and Agusta Westland to evaluate the extent of the shortfall.

D.3.1.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
Historic	03	At Risk	Failure to provide a Future Air-to-Surface Guided Weapons capability synchronous with Initial Operating Capability will mean significant elements of Attack capability will not be available in several mission scenarios. These core attack missions are dependent upon the ability to deliver a proportional & autonomous attack capability for which Future Air-to-Surface Guided Weapons (Light) & (Heavy) variants are fundamental.
Historic	07	At Risk	Failure to provide a Tactical Data Link capability at Initial Operating Capability, and thus a significant reduction in the ability to exchange secure data with third parties, will place elements of Targeting & Interoperability Key Performance Measures at risk.
Historic	01	At Risk	There is a minimal operational impact from this Key Performance Measure trade, in that only a small number of the mission scenarios are affected. Should funding be identified at a later date, this capability could be re-introduced to the design solution.
Historic	10	At Risk	There is a minimal operational impact from this Key Performance Measure trade, in that only a small number of the mission scenarios are affected. Should funding be identified at a later date, this capability could be re-introduced to the design solution.
Historic	01	At Risk	There is a minimal operational impact from this variation, in that only a small number of the mission scenarios are affected. The shortfall is balanced by Improvements in other aspects of performance.

D.4 Support Contract

Project Title		
Merlin Capability Sustainment Programme		
Team Responsible		
Merlin Project Team		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Commodore Richard Stokes (Deterrent and Under Water Capabilit	19 June 2012	
Project/Increment Name	**Current Status of Projects /**	
Merlin Capability Sustainment Programme	Post-Main Investment Decision	
Transition Phase for Future Rotorcraft Capability	Post-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

The Merlin Capability Sustainment Programme will update 30 Merlin MK1 aircraft to overcome existing and forecast obsolescence within the Weapon System Avionics to ensure sustainment of the required capability until the planned Out of Service date (2029). The converted aircraft will be known as the Merlin Mk2.

A.2 The Assessment Phase

Following approval of the Merlin Capability Sustainment Programme Initial Gate Business Case, the Assessment Phase contract was placed in June 2003. The main Assessment Phase activities comprised:

Analysis of the User Requirements and development of a consolidated set of system requirements in the form of a Systems Requirement Document.

Production of System and Sub-Systems design requirements, and seeking initial costed proposals from potential suppliers.

Conducting trade-off studies to identify the best value solution where options exist.

Developing a coherent plan for Merlin Capability Sustainment Programme, aligned to other existing and planned Merlin programmes.

Undertaking Integrated Test, Evaluation and Acceptance planning.

Identification of the risks to the Merlin Capability Sustainment Programme, and the identification and implementation of mitigation action to reduce the impact to an acceptable level.

Produce documentation and costed proposals for the Demonstration and Manufacture Phase.

Undertaking initial Integrated Logistic Support activities to define a solution compliant with the evolving Support Solution Envelope.

Future Rotorcraft Capability Review

During the Assessment Phase, MOD embarked on a review of all future rotorcraft requirements under the title of the Future Rotorcraft Capability review. The Demonstration and Manufacture Proposal that had been provided by Industry and the associated business case were produced before the impact of the Future Rotorcraft Capability review was known. The Merlin Capability Sustainment Programme was reviewed as part of the wider Future Rotorcraft Capability programme. The future Rotorcraft Capability programme determined that the balance of financial investment over the first four years of the Equipment Programme between Merlin Capability Sustainment Programme and Lynx Wildcat should be on a 50/50, 30/70, 30/70, 30/70 basis respectively.

To allow Industry to continue critical path activity and to support the reprogramming activities resulting from Future Rotorcraft Capability, the Future Rotorcraft Capability programme provided Transition Phase funding (six months) to the Merlin Integrated Project Team for an extension of the Assessment Phase contract.

A further transition phase (six months) was required to again sustain programme momentum, align it with wider Future Rotorcraft Capability requirements and maintain programme viability during the approvals process.

A.3 Project History since Main Gate

Merlin Capability Sustainment Programme obtained Initial Gate approval on 23 May 2003. Following the Assessment Phase and re-planning following the Future Rotorcraft Capability activity, formal Ministerial and HMT approval was given 20th December 2005 and the contract was awarded to Lockheed Martin UK on the 21st December 2005.

In June 2007, additional Factory Training courses were added to the contract in order to provide training for the Royal Navy training team. This would allow the trainers and delivered training course to be validated prior to converting existing Mk1 aircrew to operate the Mk2.

In November 2007, a decision was taken not to proceed with the implementation of Helicopter Electro-mechanical Actuation Technology (HEAT) in the Mk2 aircraft; this had been a contract option from the outset. It was determined that the technology was too immature to pursue without impacting the overall Merlin Capability Sustainment Programme.

In January 2008 the System Preliminary Design Review was held. This provided the first in depth review of the emerging design solution that would meet the User's requirements.

Following the Helicopter Electro-mechanical Actuation Technology decision, the solution for the air engineering training solution could be finalised. This was an upgrade to the existing Mk1 mechanical training devices and was contracted for in October 2008. In June 2009, additional Maintainer Factory Training was contracted for to ensure coherence with the aircraft delivery programme and ensure sustainable in service support at the front line. In order to minimise the impact of the transition from Mk1 to Mk2 on the front line, it was agreed to retain a Mk1 training device in the Mk1 configuration until the Mk1 out of service date. This was agreed commercially in November 2009.

The Critical Design Review was held in September 2008, this froze the design baseline for the production programme. This established the baseline for the training system and the subsequent Training System Preliminary Design Review was held in February 2009, with the subsequent Critical Design Review taking place in October 2009.

The first Production Readiness Review (PRR) for the four trials aircraft was held in April 2009. The second Production Readiness Review for the initial production aircraft was held in August 2010.

The first Mk2 aircraft (ZH826) flew on schedule in September 2010 at the Merlin System Configuration 1.0 – Avionics only.

Following a review with industry the Training System Programme was reassessed and re-planned to provide more stability and confidence that the programme needs were met. This split out the Ready For Training date into two distinct factors. It also provided the Project Team with a mechanism to ensure aircraft and training system fidelity was coherent through out the programme. This was contracted in August 2010.

As planning for the introduction to service of the Merlin Mk2 became more mature, it became clear that minor changes to the production programme were necessary to ensure minimum impact to the front line capability. It also benefited Industry by smoothing their resource profile. This change was implemented in August 2010.

In November 2010, ZH826 flew at the next system configuration, which had the mission systems enabled and switched on.

In December 2010, agreement was reached with Lockheed Martin on the disposition and solution to a number of Acoustic sub-system issues that were related to the core Military Off The Shelf (MOTS) product. The changes required will be implemented in time for the initial deliveries to the Royal Navy.

A.4 In-year Progress

The key milestone for 2011/12 was the clearance of the Merlin System Configuration (MSC) software standard at Issue 3.0 which supported the 'Ready for trials' milestone. This enabled formal flight trials to commence and occurred on schedule in July 2011. The programme uses a 'fly-fix-fly' philosophy that has delivered further increments of maturing software builds (3.0.1, 3.0.2, 3.1, 3.1.1 and 3.2). All activity fully supported through a thorough safety and airworthiness process. Factory training was delivered for the Combined Test Team to facilitate the trials programme. Formal acceptance of the contracted System Requirements Document commenced - primarily related to legacy Mk1 read across. The engineering training devices have commenced production following a successful Technical Design Review that froze the design baseline. The third and final Production Readiness Review was held on schedule (28 July 11) and signalled the readiness for full rate production which commenced in January 2012.

In November 2011, an issue with data on expiry dates of aircraft components within the Merlin forward fleet led to a temporary cessation of flying for the entire Merlin non-operational fleet. This included all Mk2 trials aircraft. This prevented Merlin Capability Sustainment Programme development flying (2-3 months) at a critical stage in the programme and effectively missed one 'fly-fix-fly' cycle. In addition, programme pressures including new certification regulation with the establishment of the Military Aviation Authority has increased the overall schedule risk and is reflected in the 50% confidence date moving to June 2014 (+ 4 months).

A.5 Capability Risks

The Merlin Mk1 is responsible for delivering protection to the Royal Navy's fleet from sub-surface threats. It also provides a significant contribution to their overall situational awareness both above and below the water. The programme is designated to sustain the capability out to the current Out of Service Date. Without this programme the ability to detect sub-surface threats would be reduced; or if the obsolescence issues were addressed through an alternative strategy (piecemeal approach) lead to a large increase in Through-Life Costs.

A.6 Associated Projects

A.7 Procurement Strategy

Project / Increment Title	Contractor	Contract Scope	Contract Type	Procurement Route
Merlin Capability Sustainment Programme	Lockheed Martin Aero Systems Integration Corporation (Significant (60% by value) sub-contract with AgustaWestland Yeovil)	Demonstration to Manufacture	Firm Price until 2010, then fixed price subject to Variation of Price	Non-Competitive prime but ~60% at sub-contract level (across both Prime and AgustaWestland contracts)

A.8 Support Strategy

Description
The support strategy of the Merlin MK2 will be the same employed for the current Merlin Mk1 & Mk3, the Integrated Merlin Operation Support contract. This is a whole life aircraft availability contract that is priced by flying hours within a defined band with incentives to generate fit-for-purpose aircraft to the Front Line. There are five key elements of the support service: Service Management Aircraft Provision Materiel Support Technical Support Training It is a 25 year contract (started in 2006) and priced in five year tranches. The five years to March 2011 had an approval of *** . The second five year pricing period starting April 2011 has an approval of £634M (including Non Cash RDEL). The contract supports the current fleet of 38 Merlin Mk1 (reducing to 30 Mk2 by the end of this pricing period), 22 Merlin Mk3 and 6 Merlin Mk3a. It also supports the Merlin Mk1 Training System. Combined Merlin MK1/2 fleet represents 56% of IMOS PP2 funded flying hours. Combined Merlin MK3/3a fleet represents 44% of IMOS PP2 funded flying hours. The Merlin Capability Sustainment Programme will deliver the necessary changes to ensure that the support contract can continue to support Merlin Mk2. This includes new Initial Provisioning Spares, new Aircraft Specialist Support Equipment and associated updates to technical publications. At Main Gate for Merlin Capability Sustainment Programme it was identified that during the transition from Mk1 to MK2 there would be a potential £45M cost for provision of spares. This was afforded through savings arising during the transition due to reductions in Mk1 activity and procured through the support solution. However, savings were subsequently taken and the affordability of the spares procurement was in doubt; £12M remained in the budget for aircraft and training systems spares. In parallel savings were identified in the Merlin Capability Sustainment Programme of £29M (due to the termination of the Helicopter Electro-mechanical Actuation Technology element of the programme and reallocation of funding for Aircraft Specialist Support Equipment). This allowed the required spares provision of a total of £41M, some £4M below the original estimate. Additionally following a risk review and based on lessons learnt from other programmes, it was determined that procurement of the spares through the Merlin Capability Sustainment Programme was lower risk since it ensured that the spares and aircraft build standards were aligned.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
Integrated Merlin Operational Support	AgustaWestland (Yeovil) primed, with a Lockheed Martin sub contract	Support	Firm Price	Single Source

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Merlin Capability Sustainment Programme	19	17	-2	3%	2%
Transition Phase for Future Rotorcraft Capability	10	10	0	1%	1%
Total (£m)	**29**	**27**	**-2**	**4%**	**3%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Merlin Capability Sustainment Programme	798	805	812

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Merlin Capability Sustainment Programme	805	791	-14	+23
Total (£m)	**805**	**791**	**-14**	**+23**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.1.1 Merlin Capability Sustainment Programme

Date	Variation (£m)	Category	Reason for Variation
March 2012	+23	Inflation	Increase in cost for inflation above 2% costed in Main Gate Business Case approval.
Historic	-29	Procurement Processes	Saving made through the reallocation of funds previously attributed to Helicopter Electro-mechanical Actuation Technology (-£27m) and Aircraft Specialist Support Equipment (-£2m) now used to fund the Initial Procurement Spares

Historic	-4	Technical Factors	Reduction in outturn costs arising from reduced impact of inflation as a result of earlier than planned completion of work.
Historic	-1	Technical Factors	Reduction in outturn costs arising from reduced impact of inflation as a result of earlier than planned completion of work.
Historic	-3	Technical Factors	Reduction in outturn costs arising from reduced impact of inflation as a result of earlier than planned completion of work.
Net Variation (£m)	**-14**		

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

B.4 Progress against approved Support / PFI Cost

Project/Increment Title	Approved Cost (£m)	Forecast cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Integrated Merlin Operational Support	629	624	-5	-5
Total (£m)	**629**	**624**	**-5**	**-5**

B.4.1 Cost variation against approved Support / PFI Cost

B.4.1.1 Integrated Merlin Operational Support

Date	Variation (£m)	Category	Reason for Variation
March 2012	+2	Exchange Rate	Increase in costs due to change in Euro rate.
March 2012	-9	Exchange Rate	Reduction in cost following reconcilliation of Integrated Merlin Operational Support Pricing Period 2 flying hours at Euro rate of 1.2079.
March 2012	+1	Technical Factors	IMOS cumulative flying hours volume drops outside of contract discount range.
March 2012	+1	Technical Factors	Additional year 5 activity levels in Integrated Merlin Operational Support Pricing Period 2
Net Variation (£m)	**-5**		

B.4.2 Operational Impact on Support / PFI Cost

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	27	0	27
Demonstration and Manufacture Phase	414	114	528
Support Phase / PFI Cost	0	109	109
Total Expenditure	**441**	**223**	**664**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase
Merlin Capability Sustainment Programme	May 2003	March 2006	34

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Approved	Budgeted For	Latest Approved
Merlin Capability Sustainment Programme	August 2013	February 2014	September 2014

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Merlin Capability Sustainment Programme	The Operational Capability of the delivered aircraft shall be such that Commander-in-Chief Fleet (advised by Combined Test Team) are able to declare that Merlin Capability Sustainment Programme is ready for operational deployment in the specified roles. A cumulative total of at least six Merlin Capability Sustainment Programme aircraft delivered to Royal Naval Air Station Culdrose. Logistic support available to enable the operation and maintenance of all the delivered aircraft. Sufficient trained personnel to achieve required capability.

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Merlin Capability Sustainment Programme	February 2014	June 2014	4	4

C.3.3 Timescale variation

C.3.3.1 Merlin Capability Sustainment Programme

Date	Variation (+/- months)	Category	Reason for Variation
March 2012	+4	Change in Associated Project	Merlin Mk1 Urgent Technical Instruction (UTI) caused temporary cessation of flying. Variation reflects increase risk due to 2-3 month loss of Mk2 trials flying. Planned, and contracted In Service Date (ISD), remains at Sep 13.
Net Variation (+/- months)	**+4**		

C.3.4 Other costs / savings resulting from timescale variation

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

Project/Increment Title	Operational Impact
Merlin Capability Sustainment Programme	Not Applicable

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Merlin Capability Sustainment Programme	Delivery of 30th aircraft	On track

C.5. Support / PFI Contract

C.5.1 Scope of Support / PFI Contract

C.5.2 Progress against approved Support / PFI Contract Go-Live Date

Project/Increment Title	Approved Date	Actual Date	Variation (+/- months)	In-year Variation (+/- months)
Integrated Merlin Operational Support	April 2011	April 2011	0	0

C.5.2.1 Go-Live Date Variation

Integrated Merlin Operational Support

C.5.3 Progress against approved Support / PFI Contract End Date

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-year Variation (+/- months)
Integrated Merlin Operational Support	March 2016	March 2016	0	

C.5.3.1 End of Contract Date Variation

C.5.4 Other costs / savings resulting from Support Cost variation

D Section D: Performance

D.1. Sentinel Score

Current score	Last years score	Comments
95% GREEN	95% GREEN	No Change

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	Delivery of required equipment (aircraft and ground equipment)	Yes	
2. Training	Delivery of trained people, including training systems	Yes	
3. Logistics	Delivery of necessary support products to enable Logistics Support Date to be met	Yes	
4. Infrastructure	Delivery of necessary changes to extant infrastructure to support the required capability	Yes	
5. Personnel	Delivery of sufficient people (aircrew and maintainers) to support capability	Yes	
6. Doctrine	Update Mk1 Concepts & Doctrine to reflect capability delivered through Mk2	Yes	
7. Organisation	Review/update organisation to reflect changes caused by introduction of Mk2	Yes	
8. Information	Manage information and interface to data providers/users, including interface to Defence Information Infrastructure.	Yes	
Current forecast (with risks)		8 (0)	0
Last year's forecast (with risks)		8 (0)	0

D.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
Historic	Training & Personnel	Budgetary Factors	A number of mitigation measures have been implemented that have reduced the risk. This includes a phased closure approach and additional factory training to ensure sufficient trained people are available to support the required force elements at readiness.
Historic	Training & Personnel	Budgetary Factors	Affordability decision taken prior to contract award meant that the ability to train Mk1 personnel concurrently with conversion of the training facilities to the Mk2 standard was not possible. This gives rise to the risk that trained personnel will not be available to sustain Mk1 capability to its out of service and develop those required for Mk2. A number of mitigation activities are underway to minimise the impact of this risk.

D.3. Performance against Key Performance Measures

D.3.1 Merlin Capability Sustainment Programme

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
01	Equipment and Personnel	Attack. The user shall be able to neutralise confirmed Anti-submarine Warfare Threats.	Yes	
02	Equipment and Training	Deployable Search and Rescue (Maritime Only). The user shall be able to conduct naval Search and Rescue.	Yes	
03	Equipment and Logistics	Environment. The user shall be able to operate in environments world-wide.	Yes	

04	Equipment and Personnel	Find. The user shall be able to acquire situational awareness of the Under Water Battle Space and Above Water Battle Space.	Yes	
05	Equipment and Information	Interoperability. The user shall be able to exchange tactical information between authorities and units.	Yes	
06	Equipment and Personnel	Lift. The user shall be able to move personnel and material over land and sea.	Yes	
07	Training and Logistics	Logistical. The user shall be able to easily logistically support the Merlin Capability Sustainment Programme.	Yes	
08	Equipment and Personnel	Operational Availability. The user shall be able to have Available Force Elements at a time and place as required to complete the mission.	Yes	
09	Equipment and Infrastructure	Operational Locations. The solution shall be able to operate to and from host platforms when required.	Yes	
10	Equipment and Training	Survivability. The user shall have force elements capable of surviving in hostile and warfighting environments.	Yes	
Current forecast (with risks)			10 (0)	0
Last year's forecast (with risks)			10 (0)	0

D.3.1.2 Key Performance Measures Variation

D.3.1.3 Operational Impact of variation

D.4 Support Contract

D.4.1 Integrated Merlin Operational Support

D.4.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
01	Logistics	Operational Serviceability	Yes	
02	Logistics	Forward Fleet Aircraft Health	Yes	
03	Logistics	Merlin Training System	Yes	
04	Logistics	Support to other platforms	Yes	
Current forecast (with risks)			4 (0)	0
Last year's forecast (with risks)			-	-

D.4.1.2 Key Performance Measures variation

D.4.1.3 Operational Impact of variation

Project Title		
Queen Elizabeth Class Aircraft Carriers		
Team Responsible		
Capital Ships		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Commodore Simon Kings (Above Water)	14th February 2011	
Project/Increment Name	**Current Status of Projects /**	
Queen Elizabeth Class Aircraft Carriers Conversion	Post-Main Investment Decision Pre-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

The requirement for the Queen Elizabeth Class was endorsed in the 1998 Strategic Defence Review which identified a continuing need for rapidly deployable forces with the reach and self-sufficiency to act independently of host-nation support. The Strategic Defence Review concluded that the ability to deploy offensive air power would be central to future force projection operations, with carriers able to operate the largest possible range of aircraft in the widest possible range of roles. This analysis was further endorsed by the New Chapter work of 2002 and the Defence White Paper in December 2003. The current Invincible Class of carriers was designed for Cold War Anti-Submarine Warfare operations. With helicopters and a limited air defence capability provided by a relatively small number of embarked Sea Harriers, it was judged that this capability would no longer meet future United Kingdom requirements. It was therefore decided to replace the Invincible Class with two larger and more capable aircraft carriers. The class's offensive air power will be provided primarily by the Joint Combat Aircraft. The Joint Force Air Group is an air group comprising of a mix of aircraft, tailored to the mission need; it will typically consist of both fixed and rotary-winged aircraft including joint air assets e.g. Joint Combat Aircraft.

The Strategic Defence & Security Review confirmed the requirement for a Carrier Strike capability as part of MOD's Future Force 2020. In order to deliver overall savings to Defence, it concluded that the Carrier Strike component would be based around the Carrier Variant of the Joint Strike Fighter which would fly from an operational Queen Elizabeth Class carrier converted to a Carrier Variant configuration (fitted with catapults and arrestor gear). The Strategic Defence & Security Review confirmed that both carriers should be built, with one to be operational and the second kept in extended readiness or sold. The future of the non-converted carrier is likely to be a matter for the Strategic Defence & Security Review 2015.

A.2 The Assessment Phase

The Class received Initial Gate approval in December 1998 and Invitations to Tender were issued in January 1999. Following tender evaluation, competitive firm price contracts for the Assessment Phase, each potentially worth some £30m, were awarded to BAE Systems and Thales UK in November 1999. Initially, the Assessment Phase was broken down into two stages. The first involved the examination of several carrier designs, and helped inform the decision in January 2001 to select the United States Joint Strike Fighter as the option with best potential to meet the Joint Combat Aircraft requirement. Stage 1 completed in June 2001, following which proposals from the contractors for Stage 2 were considered, together with an assessment of their views on the level of work needed to adequately de-risk the programme. After careful consideration, the conclusion was reached that the original two-stage approach no longer offered value for money and the Assessment Phase strategy was changed.

The competitive second stage was revised and shortened (completing in November 2002) and enabled the competing contractors to concentrate on refining their designs and taking key trade-off decisions. An innovative Continuous Assessment process was used throughout to evaluate the contractors' performance which led to the conclusion that an alliance approach involving BAE Systems, Thales UK and the Department represented the best approach to Future Aircraft Carrier. The innovative Alliance procurement strategy enabled the full exploitation of the resources and strengths of the alliance participants with the shared objective of improving on agreed performance targets and was announced in January 2003. A third stage of assessment was therefore taken forward on this basis to further increase the maturity of the design and determine the alliancing strategy for Future Aircraft Carrier. Stage 3 completed in March 2004.

In July 2004, the Assessment Phase was extended into Stage 4 to further mature the design and carry out risk reduction work, to ensure that the best technical & procurement solution was achieved. Alliancing
principles were agreed with BAE Systems and Thales UK and further developed with the selection in February 2005 of Kellogg, Brown & Root UK Ltd as an additional participant in the Alliance. The timescale for completing the design and risk reduction work was further extended in August 2005 (into Stage 5) although this did not result in any additional cost to the programme. The Assessment Phase completed at the end of January 2006 and was finalised in November 2010, on receipt of Final Cost Certificates, at a revised total cost of £288m.

A.3 Project History since Main Gate

Following direction from the Investment Approvals Board, the project has adopted an incremental approach to Main Gate approval with the Demonstration and Manufacturing Phases being divided into two sequential Main Gate approval points. The first phase (Demonstration), which included expanding the alliance to include Babcock Engineering Services and VT Shipbuilding, was approved by the Investment Approvals Board and Treasury in December 2005. The total cost of the Demonstration Phase (excluding Indirect Resource Departmental Expenditure Limit, but including non recoverable VAT) was approved at £297m (not to exceed).

The Demonstration Phase activity completed in mid 2008 with total expenditure to 31st March 2011 of £266m. The second and final Main Gate approval, to proceed with the Manufacturing Phase of the project was announced by Secretary of State on 25th July 2007 at a not to exceed cost of £3900m including the capitalised Assessment Phase costs and Demonstration Phase costs.

In March 2006, the UK agreed a Memorandum of Understanding that provides for the supply to France of a common baseline design data pack to enable French industry to bid for the design, manufacture and support of one Future Aircraft Carrier (France). France has paid an initial entry fee and contributed to the costs of the UK Demonstration Phase.

At the time of the Main Gate in 2007, the build strategy called for one of the Lower Blocks to be constructed at the BAE Systems Submarines yard in Barrow-In-Furness. BAE Systems needed to build a new facility - the Central Assembly Shop - in order to accommodate the construction of the block. It was envisaged at the time that the facility would also be beneficial to the future submarine programme. MOD authorised BAE Systems to begin site work in June 2007. In July 2008 the Alliance Management Board agreed to the reallocation of Lower Block 3 to the A&P Tyne yard on a 'best for project' basis and in December 2008 the Aircraft Carrier Alliance formally instructed BAE Systems to terminate the contract and fully justify any incurred costs. It was hoped that the work carried out in Barrow would be of use to the future submarine programme, however this did not come to fruition which led to a write-off of £8m in Financial Year 2009-10.

Following Main Gate approval the project moved into the Engineering Transition Phase, an extension of the Demonstration Phase to encompass the period prior to contract signature. On 3rd July 2008 a contract was signed with BVT Surface Fleet for the manufacture of the two carriers together with signature of an Alliance Agreement with all members of the alliance.
On 11 December 2008, Ministers announced the outcome of MOD's Equipment Examination including the intention to re-profile the Queen Elizabeth Class project to meet near term priorities and improve the scope of alignment with the Joint Combat Aircraft programme. The re-profiling measure removed £450M from years the next four years and delayed In-Service Dates of the two carriers by 1 and 2 years respectively. The cost estimates of the impact of the Examination on the project were approved by the MOD in February 2010.

During 2010 Diesel Generators were installed in Lower Block 02 (Portsmouth) and in March 2011 in Lower Block 04 (Govan) on HMS Queen Elizabeth. In early 2011, the Goliath Crane, which will be used to assemble the carriers, arrived at Rosyth.

The Investment Approvals Board approved the Queen Elizabeth Class Final Target Cost for the pre-Strategic Defence & Security Review programme on 31 January 2011 to £5242m, which has provided a stable cost and schedule baseline for the programme going forward. Long-lead equipments for HMS Prince of Wales have been ordered over the last four years, with many of the major components already in-build or delivered (e.g. Diesel Generators).

The first cut of steel took place in July 2009 at the Govan shipyard in Glasgow, and manufacture is underway in six UK shipyards: Babcock Rosyth and Appledore, BAE System Surface Ships, Govan, Portsmouth, Cammell Laird Birkenhead and A&P Tyne.

In 2009 a number of significant milestones were achieved: completion of No.1 dock at Rosyth; delivery of an upper deck section from Appledore to Rosyth; delivery of the Highly Mechanised Weapon Handling System and the delivery of Emergency Diesel Generators.

At the close of the Financial Year in March 2010 the bow of the Queen Elizabeth departed from Appledore for Rosyth.

The Aircraft Carrier Alliance acknowledged that there was a requirement to reduce costs at the time of contract award on the basis that concerted management action in the early years of the project would allow this to reduce. In the event, the disruption caused by initial recosting activity and then the Equipment Examination prevented successful delivery of the originally planned cost reduction - as this would not be achieved, MoD considered it prudent to formally recognise this in its revised estimate.

During 2010 Diesel Generators were installed in Lower Block 02 (Portsmouth) and in March 2011 in Lower Block 04 (Govan) on HMS Queen Elizabeth. In early 2011, the Goliath Crane, which will be used to assemble the carriers, arrived at Rosyth.

The Investment Approvals Board approved the Queen Elizabeth Class Final Target Cost for the pre-Strategic Defence & Security Review programme on 31 January 2011 to £5242m, which has provided a stable cost and schedule baseline for the programme going forward. Long-lead equipments for HMS Prince of Wales have been ordered over the last four years, with many of the major components already in-build or delivered (e.g. Diesel Generators).

A.4 In-year Progress

In October 2010 the Government announced the conclusions of the Strategic Defence and Security Review. As part of this announcement, only one QE Class carrier would be operated, while the other would enter Extended Readiness. Furthermore, the operational carrier would be fitted with catapults and arrestor gear to allow it to operate the more capable Carrier Variant Joint Strike Fighter aircraft. In order to facilitate this change, the Capital Ships project is undertaking an 18 month conversion development phase to develop an optimum conversion solution. This work is expected to conclude in late 2012, with decisions taken in early 2013. However, a formal announcement is expected to be made in mid May 2012 on the close out of the Department's Planning Round 2012. As a result of this decision there will be a requirement to fully review the overall programme to develop revised cost and time estimates.

The Goliath Crane was delivered to Rosyth in March 2011. It was assembled and tested over the next two months and was commissioned (ready for use) in June 2011 with steelwork beginning on HMS PRINCE OF WALES's Lower Block 03 at Govan, with a formal steel cut ceremony held on 26 May 2011.

Lower Block 03 for HMS Queen Elizabeth Class arrived at Rosyth No.1 Dock in early September from Govan, with work to join Centre Block 03 (Tyne) to Lower Block 03 later in the month marking the start of the assembly phase on the project. Over the next few months, Sponsons 03-06 were attached, with the final Sponson (05) join completing in February 2012.

Work has continued across all six shipyards involved in the project, with Lower Blocks 02 (Portsmouth) and 04 (Govan) expected to be delivered to Rosyth in the coming months.

After the end of our reporting year, in May 2012, the Secretary of State announced the Department's decision to cancel Conversion, and to revert to the pre Strategic Defence and Security Review position of operating the Queen Elizabeth Class as a Short Take-Off and Vertical Landing platform. The decision to revert will result in a write off of costs accrued up to 10 May 2012. As of the end of April 2012, up to £44m had been committed and the Department will be liable for associated rundown costs. The full impact of reverting to Short Take Off and Vertical Landing is currently being considered and will form part of the final write-off business case.

The schedule and cost impact of this decision will need to be assessed and will be part of the project's reapproval submission toward the end of 2012.

A.5 Capability Risks

The Class is, together with Joint Combat Aircraft, Maritime Airborne Surveillance & Control and Military Afloat Reach Sustainability Ships, an essential element of the Carrier Enabled Power Projection programme: the ability to project air power from the sea and capable of projecting the full level of medium scale offensive air effort and precision strike from the sea. Medium scale is defined as a deployment of brigade size or equivalent for warfighting or other operations. An example would be our contribution to the NATO-led Intervention Force in Bosnia.

Joint Combat Aircraft Maritime capability depends on the Queen Elizabeth Class to achieve Carrier Strike.

The Strategic Defence and Security Review stated that "The current, limited carrier-strike capability will be retired" because" short-range Harriers ... would provide only a very limited coercive capability. We judge it unlikely that this would be sufficiently useful in the latter half of the decade to be a cost-effective use of defence resources". This will create a capability gap until a Queen Elizabeth Class aircraft carrier has completed integration with the first operational squadron of Joint Combat Aircraft.

The Strategic Defence & Security Review 2010 accepted a capability gap in the operation of fixed wing aircraft from 2011 to 2020. This has resulted in a risk to the re-generation of this element of Carrier Enabled Power Projection, which is being addressed by work across multiple Defence Lines of Development, including the analysis of the experience gained from the US and French Navies.

The reduced availability of the Queen Elizabeth Class platform as a result of the Strategic Defence & Security Review decision to operate a single carrier may (depending on future decisions) reduce the availability of this element of Carrier Enabled Power Projection, although this could be offset by conversion of the second hull or close cooperation with the French Navy.

A.6 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
Queen Elizabeth Class Infrastructure Project	2016	Pre-Main Gate
Defence Information	2014	Post Main Gate
Medium Range Radar	2012	Post Main Gate
Queen Elizabeth Class In Service Support Solution	2016	Pre-Main Gate

A.7 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Procurement Route**			**Approval Status**
Conversion	Single Source			Pre-Main Gate
Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Queen Elizabeth Class Aircraft Carriers	BAE Systems Insyte / Thales / Kellogg Brown & Root / VT Shipbuilding / Babcock Support Services / BAE System Marine	Demonstration to Manufacture	Target Cost Incentive Fee (subsequently, from July 2007 the Engineering Transition Stage as cost reimbursement)	Non-Competitive - UK
	BVT Surface Fleet/ Thales/ BAE Systems Marine/ BAE Systems Insyte/ Babcock Marine	Manufacture to In Service	Target Cost Incentive Fee	Non-Competitive - UK

A.8 Support Strategy

Description
Integrated Logistic Support deliverables are required to enable safe and effective operation and support for the Queen Elizabeth Class. These deliverables are being procured in the main through the manufacturing contract and will be delivered prior to contract acceptance of the first platform. The Carrier In-Service Support Solution project aims to provide affordable, value for money, in-service engineering and spares logistic support from contract acceptance. It is split into 4 key phases; assessment, development, mobilisation and delivery. In response to the SDSR 2010 announcement that carrier-strike would be based around a single new operational carrier with the second planned carrier being held at extended readiness, a two-stage approach to support delivery was adopted. To be fully interoperable with key allies, SDSR directed a change to the carrier design and it was acknowledged that this change would mean that the converted carrier would not be in-service until 2020. Approval to mobilise and implement support to HMS Queen Elizabeth during a 9 month de-risking period and then in extended readiness will be sought in 2014. A Main Gate submission will seek approval for the mobilisation and provision of a full support solution for the Queen Elizabeth Class in 2018.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
Support Assessment Phase	Alliance - Industrial Participants	Assessment Phase in increments	Cost reimbursment moving to Target Cost	Non-Competitive - UK

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Queen Elizabeth Class Aircraft Carriers	120	288	+168	2%	5%
Conversion	56	44	-12	1%	1%
Total (£m)	**176**	**332**	**156**	**3%**	**6%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Forecast/ Approved (£m)	Budgeted For (£m)	Highest Forecast/ Approved (£m)
Queen Elizabeth Class Aircraft	3191	3541	3791
Conversion	0	0	0

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Queen Elizabeth Class Aircraft	3541	5348	+1807	+217
Conversion	0	0	0	0
Total (£m)	**3541**	**5348**	**+1807**	**+217**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.1.1 Queen Elizabeth Class Aircraft Carriers

Date	Variation (£m)	Category	Reason for Variation
March 2012	+217	Technical Factors	Following the agreement of Final Target Cost in 2010, the Aircraft Carrier Alliance are reporting a higher Estimate At Completion cost. This difference is driven by a combination of factors, key of which are: Aircraft Carrier Alliance not able to fully deliver cost reduction opportunities agreed at Final Target Cost (a total of £312m was agreed) the current Aircraft Carrier Alliance view is that some of this will not be delivered (+£88m) (with the remainder to be determined); the latest view of overall risk exposure has increased since Final Target Cost (+£134m); and a reduction against escalation (-£5m). With commercial discussions ongoing, MOD's assessment of the position is being with-held on the basis that it may prejudice those discussions but it has been agreed that the costs of the programme for this MPR should reflect the Aircraft Carrier Alliance's Estimate At Completion.

Historic	-13	Budgetary Factors	Completion of Final Target Cost negotiations with the Aircraft Carrier Alliance.
Historic	+190	Budgetary Factors	Refinement of cost estimate connected to the Equipment Examination.
Historic	+35	Budgetary Factors	An £8M reduction on inflation following refinement of estimates against additional costs of £43M for Government Furnished Equipment.
Historic	+337	Budgetary Factors	At the time of contract award in 2008, there was a cost challenge of £337m which was expected to be fully reduced through cost reduction measures. The impact of slowing down the programme prevented these from being delivered
Historic	+117	Technical Factors	Various factors including growth of Bill of Materials and the impact of build strategy changes.
Historic	+674	Budgetary Factors	Financial Planning Round 2009 resulted in an option that constrained the Queen Elizabeth Class in the first 4 years, this will cause cost growth of £674m over the life of the project.
Historic	+250	Inflation	The Queen Elizabeth Class contracted Initial Target Cost is set at April 2006 economic conditions exposing the MOD to inflation fluctuations. The current procurement contracts were placed during a period of high inflation and, despite the current economic downturn, forecasts covering the whole of the projects life indicated it was prudent to allow for an additional £250m CDEL.
Net Variation (£m)	**+1807**		

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

Increment Title	Category	Explanation
Queen Elizabeth Class Aircraft Carriers		-

B.4 Progress against approved Support / PFI Cost

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	289	37	326
Demonstration and Manufacture Phase	1650	633	2283
Support Phase / PFI Cost	0	0	0
Total Expenditure	**1939**	**670**	**2609**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase
Queen Elizabeth Class Aircraft Carriers	December 1998	December 2005	84
Conversion	April 2011	February 2013	22

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Forecast/ Approved	Budgeted For	Latest Forecast/ Approved
Queen Elizabeth Class Aircraft Carriers	April 2015	July 2015	October 2015
Conversion	-	-	-

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Queen Elizabeth Class Aircraft Carriers	**In Service Date:** Queen Elizabeth Class In-Service Date will be declared by the customer when the ship is ready to proceed to a full test of the operational capability of the vessel at sea. **Initial Operating Capability:** Initial Operating Capability is expected to be declared once the vessel has successfully completed Tier 1 Operational Sea Training and the Operational Readiness Inspection. Operational Sea Training consists of two phases: Tier 1 - Basic sea safety and survival at the platform level. Training as an individual and collectively to be safe to operate the platform in any condition. Tier 2 - More comprehensive training as a unit to include the basic warfighting capabilities and more complex emergencies.
Conversion	-

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Queen Elizabeth Class Aircraft Carriers	July 2015	July 2017	+24	+9

C.3.3 Timescale variation

C.3.3.1 Queen Elizabeth Class Aircraft Carriers

Date	Variation (+/- months)	Category	Reason for Variation
November 2011	+9	Technical Factors	The Project Team, in conjunction with the Aircraft Carrier Alliance, now has an improved understanding of the build schedule with the latest Time Risk Analysis identifying a 50% estimate for Contract Acceptance Date of January 2017. This points to a potential for a 9 month slip which the Project Team considers prudent to report.
Historic	+5	Budgetary Factors	The Aircraft Carrier Alliance continues to work to Build Strategy 5, which was first announced in March 2009 following the Equipment Examination. As part of the Final Target Cost analysis, the Aircraft Carrier Alliance have revisited their Monte-Carlo analysis not only in terms of cost but also schedule. Risk and uncertainty assumptions around integration, commissioning and trials have been updated and fully aligned to those used for costing of Final Target Cost. Analysis that both the Project Team and Cost Assurance & Analysis Services support suggests that Contract Acceptance Dates for the two Queen Elizabeth Class vessels should now be June 2016 for Queen Elizabeth and September 2018 for Prince of Wales. Allowing for transition from Contract Acceptance Date to In Service Date gives a revised In Service Dates as October 2016 and December 2018.
Historic	+12	Budgetary Factors	Ministerial announcement that Queen Elizabeth and Prince Of Wales In Service Dates will be delayed as a result of the Financial Planning Round 2009 option
Historic	-2	Budgetary Factors	Industry and Capital Ship current estimates are that the current schedule contains sufficient flexibility to allow for mitigating actions to be taken.
Net Variation (+/- months)	**+24**		

C.3.3.2 Conversion

C.3.4 Other costs / savings resulting from timescale variation

Project/Increment Title	Date	£m (+ Cost / - Saving)	Category	Reason for expenditure or saving
Marine Equipment Systems	Historic	+6	Budgetary Factors	Ministerial announcement that Queen Elizabeth Class In Service Dates will be delayed as a result of the Financial Planning Round 2009 option
Communication Situation Awareness	Historic	+3	Budgetary Factors	
Naval Electronic Warfare	Historic	+2	Budgetary Factors	
T45 Overhead	Historic	+63	Budgetary Factors	
CVS Run-on Costs	Historic	+49	Budgetary Factors	
Total		**+123**		

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

Project/Increment Title	Operational Impact
Queen Elizabeth Class Aircraft Carriers	The Equipment Examination introduced a slip in the In Service Date which would have required the extension in the service of HMS Illustrious in order to maintain carrier-strike capability, the Strategic Defence and Security Review stated that "The current, limited carrier-strike capability will be retired" because "short-range Harriers... would provide only a very limited coercive capability. We judge it unlikely that this would be sufficiently useful in that latter half of the decade to be a cost effective use of defence resources". This will create a capability gap until a Queen Elizabeth Class aircraft carrier has completed integration with the first operational squadron of Joint Combat Aircraft.
Conversion	-

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Queen Elizabeth Class Aircraft Carriers	The Full Operational Capability will be largely determined by the combination of Joint Force Air Group elements and the Queen Elizabeth Class Incremental Acquisition Plan. Full Operating Capability will therefore be defined once the Joint Combat Aircraft and Maritime Airborne Surveillance & Control delivery programmes and the Initial Approved Plan are agreed. Full Operating Capability will allow Queen Elizabeth Class to have an embarked Joint Force Air Group and a level of capability equivalent to that declared at Main Gate.	-
Conversion	-	-

C.5. Support / PFI Contract

D Section D: Performance

D.1. Sentinel Score

Current score	Last years score	Comments
54 Red	80 Green	The current Aircraft Carrier Alliance Estimate At Completion indicates a 50% figure of circa £5500m. Therefore the project view is that the cost forecast is now above the 50% approved cost. Formal re-approval of the project cost will be sought in due course once the way forward for Carrier Strike is agreed as part of Planning Round 12 close-out. Corporate Management Information System has been updated to reflect this revised forecast.

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	Delivery of 2 Queen Elizabeth Class Carriers to the required Performance Specification.	Yes (with risks)	
2. Training	Provision of individual and collective training both ashore and afloat for Queen Elizabeth Class Carriers that delivers the appropriate level of Operational Capability to meet the Readiness Profiles in the Naval Data Book.	Yes (with risks)	
3. Logistics	Provision of Support Solution that enables the operational movement and maintenance of Queen Elizabeth Class Carriers.	Yes	
4. Infrastructure	Provision of support infrastructure and facilities in the MOD estate to support Queen Elizabeth Class Carriers and their associated equipments and personnel.	Yes (with risks)	
5. Personnel	Provision of sufficient, correctly trained and suitably equipped personnel available to participate in commissioning, trials and handover of the ship, then subsequent operation of the ships in service.	Yes (with risks)	
6. Doctrine	Provision of framework of practices and procedures to derive the greatest benefit from using the Queen Elizabeth Class Carriers in a range of operations and scenarios.	Yes	
7. Organisation	Establish a robust and deliverable command structure for Queen Elizabeth Class Carriers with correctly qualified personnel in place in time to support the programme	Yes	

8. Information	Coherent development of data, information and knowledge requirements for Queen Elizabeth Class Carriers and all processes designed to gather, handle data and exploit information and knowledge.	Yes	
Current forecast (with risks)		8 (4)	0
Last year's forecast (with risks)		8 (4)	0

D.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Equipment	Technical Factors	The Strategic Defence & Security Review confirmed that both carriers should be built, with the current intention to convert one hull to operate the Carrier Variant of the Joint Strike Fighter. There are risks associated to the uncertainty around the final Queen Elizabeth Class solution which could result in cost and schedule impact beyond those reported in this year's MPR. The position will become clearer post formal announcement expect in mid May 2012.
March 2012	Infrastructure	Technical Factors	The current Monte Carlo'd simulated estimate for completion of the infrastructure upgrade to Portsmouth identifies a risk that base port for Queen Elizabeth could not be ready in time for first entry Portsmouth. The Investment Appraisal Committee has directed the Defence Infrastructure Organisation to carry out a series of de-risking tasks to address this risk.
Historic	Equipment	Changed Capability Requirements	The Strategic Defence & Security Review confirmed that both carriers should be built, with the current intention to convert one hull to operate the Carrier Variant of the Joint Strike Fighter. The risks connected to the development and integration of Electro Magnetic Launch Systems and Advanced Arrestor Gear technology.
Historic	Training	Changed Capability Requirements	The risks associated with having sufficient trained, suitably qualified and experience personnel to operate the Electro Magnetic Launch Systems.
Historic	Personnel	Changed Capability Requirements	The risks associated with ensuring suitably qualified and experienced aviation personnel to operate the converted Queen Elizabeth Aircraft Carrier.

Historic	Infrastructure	Technical Factors	Early cost estimates exceed provision, necessitating further investigation of the options to ensure an affordable position
Historic	Information	Technical Factors	The risks associated with the integration of Joint Combat Aircraft and the Queen Elizabeth Class has been addressed by the Equipment Defence Lines Of Development Steering and Integration Group. Analysis of the interface issues between aircraft and the ship has been conducted and significant progress has been made in addressing the issues idenitified. As a result, the integration risk is now assessed as low.
Historic	Information	Technical Factors	Information Defence Lines of Development remains at risk due to uncertainty over the resolution of Joint Combat Aircraft integration into UK Global Information Infrastructure.

D.3. Performance against Key Performance Measures

D.3.1 Queen Elizabeth Class Aircraft Carriers

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
KUR 1	All	Interoperability – Queen Elizabeth class shall be able to operate with joint/combined forces to deliver a medium scale offensive air effort for power projection, focused intervention and peace enforcement operations	Yes	
KUR 2	All	Integration – Queen Elizabeth class shall be able to integrate with all elements of joint/combined forces necessary to conduct Strike operations and support ‘agile mission groups’	Yes	

KUR 3	All	Availability – Queen Elizabeth class shall provide one platform at High Readiness for its principal role of Carrier Strike at medium scale and at Very High readiness for CS small scale focused intervention, at all		Yes
KUR 4	All	Deployability – Queen Elizabeth class shall be able to deploy for the operations in the core regions as defined in Defence Strategic Guidance 05	Yes	
KUR 5	All	Sustainability – Queen Elizabeth class shall be able to conduct deployments away from port facilities for operations lasting 9 months continuously and support air operations for up to 70 days	Yes	
KUR 6	All	Aircraft Ops – Queen Elizabeth class shall be able to deploy the full medium scale offensive air effort	Yes	
KUR 7	All	Survivability – Queen Elizabeth class shall achieve a high probability of protection, survival and recoverability against both natural incidents and those threats identified in the Defence Intelligence Scale Threat Statement (Oct 04)	Yes	

KUR 8	All	Flexibility – The Queen Elizabeth class shall be able to operate and support the full range of defined aircraft and be adaptable such that it could operate air vehicles which require assisted launch/recovery	Yes	
KUR9	All	Versatility – Queen Elizabeth class shall be able to deploy agile Mission groups	Yes	
Current forecast (with risks)			8 (0)	1
Last year's forecast (with risks)			# (#)	#

D.3.1.2 Key Performance Measures Variation

Date	Key Performance Measure	Category	Reason for Variation
Historic	KUR 3	Changed Capability Requirements	The Strategic Defence & Security Review confirmed that both carriers should be built, with one to be operational and the second in extended readiness or sold. With this change of readiness requirement announced and the current intention to convert one hull to operate the Carrier Variant of the Joint Strike Fighter KUR3 will not be met.

D.3.1.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
Historic	KUR 3	At Risk	The reduced availability of the Queen Elizabeth Class platform as a result of the Strategic Defence & Security Review decision to operate a single carrier may (depending on future decisions) reduce the availability of this element of Carrier Enabled Power Projection , although this could be offset by conversion of the second hull or close cooperation with the French Navy.

D.3.2.2 Key Performance Measures variation
D.4 Support Contract

Project Title		
Specialist Vehicles		
Team Responsible		
Medium Armoured Track Team		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Brigadier John Patterson	15th August 2011	
Project/Increment Name	**Current Status of Projects /**	
Recce Block 1 Demonstration	Post-Main Investment Decision	
Recce Block 2 Demonstration	Pre-Main Investment Decision	
Recce Block 1 & 2 Manufacture	Pre-Main Investment Decision	
Recce Block 3 Demonstration and Manufacture	Pre-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

Specialist Vehicles will provide the next manned ground reconnaissance capability. The Scout platform and supporting variants will offer improved fightability, survivability, lethality, and have a greater find capability than the increasingly obsolescent legacy Combat Vehicle Reconnaissance (Tracked) fleet. Specialist Vehicles will provide a mobile, protected ground platform for reconnaissance to fill a capability gap and will contribute to a combined arms capability of modern, medium-weight, strategically deployable, tracked vehicles. The current planning assumption is to deliver a Reconnaissance fleet of up to *** vehicles incrementally.

A.2 The Assessment Phase

GENERAL: Future Rapid Effects System Specialist Vehicles entered its assessment phase (Assessment Phase 2) in June 2008. The approval covered the anticipated Specialist Vehicles fleet scope, with high priority afforded to Scout (Recce Block 1), given the pressing need to replace Combat Vehicle Reconnaissance (Tracked). Specialist Vehicles was assumed to consist of three Recce Blocks plus Medium Armour and Manoeuvre Support components, all mounted on a common base platform. In broad terms the Assessment Phase Studies confirmed that the Common Base Platform concept was viable for all platforms and also set the time, cost performance and risk envelope for Recce Block 1. In accordance with the endorsed acquisition strategy, the Common Base Platform design will be used for Recce Block 2 and 3 with the addition of role specific sub-systems for each variant. Assessment studies will be used to determine the scope of each sub-system fit for each specific role.

TRADE-OFFS: Assessment Studies were used to derive the preferred Programme Option and its associated characteristics of performance (requirements), cost, time and risk, ahead of launching a competition to select the Prime contractor. These studies included an analysis of potential solutions ranging from off-the-shelf platforms, modified off-the-shelf, and new design, as well as studies on critical sub-system choices e.g. primary sighting system. Industry was engaged throughout to ensure data used reflected market reality, whilst still keeping competitve choices open. The Military Customer and User were engaged throughout the process.

ACQUISITION STRATEGY: Assessment Phase 2 also determined the most approporiate Acquisition Strategy for the Specialist Vehicles. The product of this strand was subject to a separate Investment Approvals Board Approval. This Approval endorsed the use of open international competition to select a 'prime contractor' to conduct the demonstration phase for Recce Block 1, and subject to further approval included progression to manufacture and initial in-service support, together with a Common Base Platform for all Specialist Vehicles. Major enabling sub-systems e.g Guided Weapons (missiles) for later Recce Blocks were not included in the scope of Recce Block 1 and Common Base Platform in order to leave competitive choice for later Recce Blocks e.g. missile coherence with Team Complex Weapons.

MAIN WEAPON SELECTION - SCOUT: Approval for the selection of the 40mm Case Telescope Weapon System was given in 2008 to enable commonality with the Warrior Capability Sustainment Programme, thus taking the benefit of common ammunition and training. Qualification for the 40mm Case Telescoped Weapon System is led by the Warrior Capability Sustainment Programme team.

The Recce Block 1 element of Assessment Phase 2 was conducted in four Stages, with the key findings from each stage captured in a stage report. The final stage - the formal competition and Investment Approvals Board approval for Demonstration was conducted under an aggressive timeline with transition through Main Gate 1 achieved seven months ahead of forecast. In 2010, the project was subject to re-approval by the new coalition government which delayed contract award by three months, due to the pre-election period.

Assessment Phase 2 included risk reduction studies and demonstrators on the Specialist Vehicles platforms and on high performance thermal imaging sighting systems which were subsequently down-selected as part of the main competition.

The Recce Block 1 element of the Assessment Phase 2 concluded with a major international competition, which selected General Dynamics UK Ltd as the Prime Contractor.

Further Assessment Phase work is planned for later Recce Blocks.

The Future Rapid Effect System Specialist Vehicles Assessment Phase 2, discussed above, (approved in 2008) largely, but not exclusively, focussed on Recce Block 1 and the Common Base Platform for all the roles. It was planned that the Assessment Phase would be subject to further approval once more work had been conducted on the complete Specialist Vehicles requirement set, particularly the later, more complex variants.

A.3 Project History since Main Gate

MAIN GATE 1 - DEMONSTRATION RECCE BLOCK 1 ONLY: The outcome of the Specialist Vehicles Assessment Phase for Recce Block 1 and Common Base Platform was presented as evidence for the Specialist Vehicles Main Gate 1 approval for entry into Demonstration. As part of this Main Gate 1 approval, the Office of Government Commerce conducted a Gateway Review in September 2009, followed by a full Major Projects Review Group examination in December 2009, which confirmed that Specialist Vehicles was in a position to proceed to its planned Demonstration phase with General Dynamics UK Ltd as the Prime contractor. Approval was re-endorsed by the new Coalition Government in June 2010. The contract with General Dynamics UK Ltd commits to the Demonstration Phase for Recce Block 1 only, whilst taking contractual option (prices - to be exercised later) for manufacture for Recce Block 1 and Common Base Platform options for later Blocks and initial in-service support. This contract includes seven Anchor Milestones.

Planning Round 11 and Strategic Defence and Security Review Savings Options have removed the Medium Armour element and reset the total vehicle fleet numbers up to ***, with the delivery profile recast to aspire to the emerging Army restructuring under Strategic Defence and Security Review (Five Multi Role Brigades). Final size and shape of the Specialist Vehicles fleet will not be set until Main Gate 2, in ***, when the first major production investment decision will be taken. The Recce Block 1 Planned Assumption for Service Entry was also deferred by nine months from *** to *** due to a Strategic Defence and Security Review savings option.

FURTHER APPROVALS - Manufacture and Demonstration of other Recce Blocks: It should be noted that Specialist Vehicles does not have a single Main Gate Approval. The size of the programme, together with previous lessons learned in other programmes, determined that a two stage Main Gate approach should be used; Main Gate 1 for entry into Demonstration for Recce Block 1 and Common Base Platform only, with a second Main Gate (2) for entry into production, the latter being the major investment decision. Further approvals (in effect sub-Main Gates) will approve Demonstration and Manufacture of later vehicle blocks (e.g. Recce Block 2) covering later variants. Main Gate 1 did not set Initial Operating Capability, Full Operating Capability or total fleet requirements, but merely noted the planning assumptions associated with these for service entry at the time of demonstration launch for Recce Block 1. There was also recognition that the then forthcoming Strategic Defence and Security Review would change total fleet requirements and assumptions and these should not therefore be set at Main Gate 1.

A.4 In-year Progress

Recce Block 1 and Common Base Platform Demonstration:
Building on the initial progress started in 2011, the programme has successfully completed its stage payment milestones for:

1. Integrated Baseline Review and System Design Review of the Turret
2. System Design Review
3. Preliminary Design Review of the Platform
4. Entry review into the Preliminary Design Review Anchor Milestone.

An Information Note was submitted in June 2011 to the Internal Approvals Committee noting the enduring need for the Specialist Vehicles project after the Strategic Defence and Security Review, with change to the Defence Planning Assumptions and Planning Round 11. It also noted the assumption that General Dynamics UK Ltd would be the Prime Contractor for Recce Block 2 subject to demonstrating value for money and Internal Approvals Committee approval through a Review Note planned for later in 2012 following the announcement of Planning Round 12. A number of Programme Options have been scoped out during the year to inform this planning round, and as of 31 March 2012 no formal decision has been taken on which Programme Option would be run in Planning Round 2012.

In February 2012, an opportunity arose to conduct extra cannon integration tests & mine blast characterisation by 31 May 2012 at no cost or compromise to MoD. These trials provide additional design maturity understanding on exit from Preliminary Design Review, as useful risk reduction for Critical Design Review later in the project. Exit from the Preliminary Design Review is dependent on presentation and acceptance of maturity evidence and continuing risk reduction plans going forward.

A.5 Capability Risks

Specialist Vehicles will replace Combat Vehicle Reconnaissance (Tracked) which is increasingly becoming tactically un-deployable. Combat Vehicle Reconnaissance (Tracked) has already been extended beyond it's out of service date through a series of modifications and Urgent Operational Requirements. Combat Vehicle Reconnaissance (Tracked) is restricted by its very small design meaning that it has reached its operational capacity. Combat Vehicle Reconnaissance (Tracked) must be replaced (by Specialist Vehicles) to avoid a long term capability gap opening up in essential manned ground reconnaissance.

A.6 Associated Projects

A.7 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only		
Project / Increment Title	**Procurement Route**	**Approval Status**
Recce Block 2 Demonstration	Acquisition Programme with full and open competition	Pre-Main Gate
Recce Block 1 Manufacture	Acquisition Programme with full and open competition	Pre-Main Gate
Recce Block 2 Manufacture	Acquisition Programme with full and open competition	Pre-Main Gate
Recce Block 3 Demonstration and Manufacture	Acquisition Programme with full and open competition	Pre-Main Gate

Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Recce Block 1 Demonstration	General Dynamics UK Ltd	Demonstration to Manufacture	The contract is a mixture of Firm, Maximum (to be converted to Firm) and Fixed Prices. The Firm Prices apply until 31 March 2015 and thereafter Fixed Prices will apply, with the exception of the Demonstration Phase activity which is Firm Price regardless.	Competitive - International

A.8 Support Strategy

Description
Not yet committed. Contract Options are included for the first two years in service support with the Recce Block 1 and Common Base Platform Demonstration Phase contract. It is intended that an incentivised support contract is negotiated before Main Gate 2 and endorsed at Main Gate 2. This will largely be underpinned by vehicle performance in demonstration.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
First Two Years Support	General Dynamics UK	Support	Fixed Price	Competitive - International

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Specialist Vehicles	109	129	+20	8%	9%
Total (£m)	**109**	**129**	**+20**	**8%**	**9%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Recce Block 1 Demonstration	1377	1394	1433
Recce Block 2 Demonstration	-	-	-
Recce Block 1 & 2 Manufacture	-	-	-
Recce Block 3 Demonstration and Manufacture	-	-	-

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Recce Block 1 Demonstration	1394	1394	0	0
Recce Block 2 Demonstration	-	-	-	-
Recce Block 1 & 2 Manufacture	-	-	-	-
Recce Block 3 Demonstration and Manufacture	-	-	-	-
Total (£m)	**1394**	**1394**	**0**	**0**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

B.4 Progress against approved Support / PFI Cost- N/A

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	69	3	72
Demonstration and Manufacture Phase	118	170	288
Support Phase / PFI Cost	0	0	0
Total Expenditure	**187**	**173**	**360**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Forecast/ Actual Date of Main Investment Decision Approval	Length of Assessment Phase
Specialist Vehicles	June 2008	Continuous Assessment Phase	-
Recce Block 1 Demonstration	June 2008	March 2010	21
Recce Block 2 Demonstration	June 2008	***	***
Recce Block 1 Manufacture	June 2008	***	***
Recce Block 2 Manufacture	June 2008	***	***
Recce Block 3 Demonstration and Manufacture	June 2008	***	***

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Approved	Budgeted For	Latest Approved
Recce Block 1 Demonstration	-	-	-
Recce Block 2 Demonstration	-	-	-
Recce Block 1 & 2 Manufacture	-	-	-
Recce Block 3 Demonstration and Manufacture	-	-	-

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Recce Block 1 Demonstration	-
Recce Block 2 Demonstration	-
Recce Block 1 & 2 Manufacture	-
Recce Block 3 Demonstration and Manufacture	-

C.3.2 Progress against approved Dates- N/A

C.3.3 Timescale variation - N/A

C.3.4 Other costs / savings resulting from timescale variation- N/A

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation- N/A

C.4. Full Operating Capability- N/A

C.5. Support / PFI Contract- N/A

D Section D: Performance

D.1. Sentinel Score

Current score	Last years score	Comments
85 Green	89 Green	

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	System verification (Contract Acceptance against SRD)	Yes	
2. Training	Personnel trained for trials	Yes	
3. Logistics	In Service Support solution verified (contract acceptance in accordance with ITEAP)	Yes	
4. Infrastructure	Infrastructure solution demonstrated in accordance with ITEAP.	Yes	
5. Personnel	Personnel solution demonstrated in accordance with the ITEAP.	Yes	
6. Doctrine	Draft Concept of Use (CONUSE) developed by Concepts & Doctrine (C&D) from Equipment's Initial Baseline Solution (Initial B/L Sol) and C&D's Concept of Employment (CONEMP), covering all funded platform variants, with gaps between funded CONUSE and CONEMP fed back to Capability's Capability Gap (CG).	Yes	
7. Organisation	Organisation solution demonstrated in accordance with the ITEAP.	Yes	
8. Information	Information solution, including hardware, software and data messages required to satisfy the information exchange requirements, has been successfully verified against the systme requirements and design spceification through analysis and developmental testing in synthetic and real- world development environments in accordance with the Integrated Test, Evaluation & Acceptance Plan (ITEAP)	Yes	
Current forecast (with risks)		8 (0)	0
Last year's forecast (with risks)		8 (0)	0

D.2.2 Defence Line of Development variation

D.3. Performance against Key Performance Measures

D.3.1 Specialist Vehicles

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
KUR 1 Situational Awareness	Equipment	The user shall be able to gather and use information about the operational environment.	Yes	
KUR 2 Interoperability	Equipment	The user shall be able to operate national, and with multinational, C4I Battlespace Systems	Yes	
KUR 3 Deployability	Equipment	The user shall be able to deploy rapidly worldwide by land, sea and air.	Yes	
KUR 4 Operational Mobility	Equipment	The User shall be able to self deploy a total of 530 km (300 km by road, 200 km on tracks and 30 km cross country) on a single load of fuel with the appropriate number of personnel and equipment according to role, ready to complete a Battlefield Mission after re-fuelling.	Yes	
KUR 5 Tactical Mobility	Equipment	The User shall be able to achieve levels of terrain accessibility and agility appropriate to role.	Yes	

KUR 6 Lethality	Equipment	The User shall be able to achieve the defined levels of lethality appropriate to role.	Yes	
KUR 7 Survivability	Equipment	The User shall be provided with the defined levels of survivability appropriate to role.	Yes	
KUR 8 Sustainability	Equipment	The User shall be able to sustain Future Rapid Effects System operational effectiveness for national and coalition operations.	Yes	
KUR 9 Availability	Equipment	The User shall be able to deliver high levels of operational availability, for durations of 14 day high intensity warfighting operation, with minimum maintenance.	Yes	
KUR 10 Environment	Equipment	The User shall be able to store, transport and operate the capability world-wide in all relevant operational environments and terrains.	Yes	
KUR 11 Growth Potential	Equipment	The User shall be able to develop the capability of Future Rapid Effects System through life, through the ready integration of emerging technologies.	Yes	
Current forecast (with risks)			11 (0)	0
Last year's forecast (with risks)			11 (0)	0

D.3.1.2 Key Performance Measures Variation

D.3.1.3 Operational Impact of variation

Project Title		
Type 45		
Team Responsible		
Destroyers		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Simon Kings(Above Water Capability)	14th February 2011	
Project/Increment Name	**Current Status of Projects /**	
Type 45 Destroyer	Post-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

The Type 45 is a new class of six Anti-Air Warfare Destroyers, to replace the capability provided by the Royal Navy's existing Type 42s. The warship is being procured nationally. The Type 45 will carry the Principal Anti-Air Missile System (including the Aster missile, now known as Sea Viper) which is capable of protecting the vessels and ships in their company against aircraft and missiles, satisfying the Fleet's need for area air defence capability into the 2030s. The Principal Anti-Air Missile System is being procured collaboratively with France and Italy. The Destroyers Team is responsible for providing the Principal Anti-Air Missile System to the warship Prime Contractor.

A.2 The Assessment Phase

The Type 45 Destroyer programme builds on the Assessment work carried out in Phase 1 of the collaborative Horizon project, the warship element of the Common New Generation Frigate programme. Following the decision of the three Horizon partners (France, Italy and the United Kingdom) to proceed with the Principal Anti-Air Missile System, but to pursue national warship programmes, BAE Systems was appointed Prime Contractor for the Type 45 in November 1999. The contract for the Principal Anti-Air Missile System Full Scale Engineering Development and Initial Production was placed in August 1999. Main Gate approval for the warship was achieved in July 2000 and a contract for Demonstration and First of Class Manufacture was placed in December 2000. The Type 45 Destroyer programme builds on the Assessment work carried out in Phase 1 of the collaborative Horizon project, the warship element of the Common New Generation Frigate programme. Following the decision of the three Horizon partners (France, Italy and the United Kingdom) to proceed with the Principal Anti-Air Missile System, but to pursue national warship programmes, BAE Systems was appointed Prime Contractor for the Type 45 in November 1999. The contract for the Principal Anti-Air Missile System Full Scale Engineering Development and Initial Production was placed in August 1999. Main Gate approval for the warship was achieved in July 2000 and a contract for Demonstration and First of Class Manufacture was placed in December 2000.

A.3 Project History since Main Gate

BAE Systems Electronics was appointed Prime Contractor for the Type 45 in November 1999 and a contract for Demonstration and First of Class Manufacture for the first three ships was placed in December 2000. A contract for a further three Type 45 hulls was placed with the Prime Contractor in February 2002. The ships are being built under sub-contract by BAE Systems Maritime – Naval Ships. The Demonstration & Manufacture contract was amended to reflect the Investment Approvals Board Six-Ship Approval gained in August 2007. This change introduced a staged acceptance process for each ship, commencing with Acceptance off Contract, thereby giving control of the vessel to the MOD to undertake a further period of trials and acceptance activity leading to the declaration of In-Service Date. It was announced in June 2008 that as part of the Department's 2008 Planning Round the decision was taken not to take up the option to proceed with Type 45 Ships 7 and 8.

During the Department's 2010 Planning Round a decision was taken to amend the production programme of Aster Missiles. This decision deferred production of some missiles, reducing costs in early years, but adding £46M to the overall cost of the Principal Anti-Air Missile System programme. However, the effect of other Planning Round 10 decisions and the benefits accrued through the good progress of the Ship programme, meant that the result was no overall cost growth of the T45 programme.

The first ship, HMS Daring was accepted into service with the Royal Navy on 31 July 2010, with the second ship, HMS Dauntless, being similarly accepted on 16 November 2010. During 2010, good progress continued to be achieved across the build programme with the third ship, HMS Diamond being accepted off contract on 22 September 2010 and the fourth ship, HMS Dragon completing her first contractor sea trials in December 2010. The final Type 45, HMS Duncan, was launched in October 2010. The Principal Anti-Air Missile System development test firing programme was successfully completed in June 2010 with a Salvo firing from the Longbow barge at a French test range in the Mediterranean. The High Seas Firing programme from Type 45 platforms commenced with a successful firing from HMS Dauntless in September 2010 at the UK Hebrides test range.

The contract for up to seven years of Support for Type 45, awarded to BAE Systems Surface Ships Ltd in September 2009, has delivered the required availability to enable those ships declared in-service to achieve their programmed activities.

During the Department's 2011 Planning Round savings measures were implemented as a result of the combination of forecast Terms Of Business Agreement savings, risk retirement following successful completion of the Sea Viper development firing programme and early ISD of the first two ships and early acceptance off-contract of the third ship against their 50% confidence dates. As a result of these savings, which amounted to some £34m, the decision was taken to reverse a Cost Capability Trade made in 2006 that proposed to reduce the spend on Aster missiles by some £30m. The overall effect of these decisions and the change in Departmental policy with respect to Cost of Capital was a forecast decrease of £30m in the overall cost of the programme.

A.4 In-year Progress

Throughout the course of the last 12 months, up to end March 2012, the Type 45 programme continued to deliver against its target plans across the class of six ships. The most notable achievements were a successful High Seas Firing of the Sea Viper missile system from HMS Daring in April 2011 (the first from that ship), the declaration of In Service Date of the third Type 45 HMS Diamond in July 2011 and the Acceptance Off Contract of the fourth Type 45 HMS Dragon in August 2011. In addition, sea trials of those ships yet to reach In Service Date have also been successful with the fifth Type 45 Defender undertaking both of her contractor led trials and HMS Dragon completing sufficient of her MOD led trials to successfully demonstrate the level of military utility to enable the Transfer Of Asset to the front line user, Navy Command, in February 2012.

The successful delivery of the above programme milestones has allowed the MOD to retire risk funding and for both Industry and MOD to re-cost remaining activities with greater certainty in the final outturn of the programme. These are the significant contributors to the in year programme cost reduction of £108m.

A.5 Capability Risks

In order for a force of ships to operate safely at sea and project power onto the land, it has to reduce its susceptibility to attack from the air. The current generation of anti-air warfare capability (Type 42 Destroyer) has already been extended beyond its design life and is now rapidly approaching its out of service date. The Type 45 Destroyer will ensure that UK maritime forces retain a sufficiently robust capability to counter the growing threat from the air for the next 25 years. Without the Type 45, the UK would be severely limited in its ability to operate maritime forces in all but the most benign environments. There would also be a significant shortfall in the number of ships available to deploy world-wide in support of wider British interests, fulfilling roles from defence diplomacy to disaster relief to crisis intervention.

A.6 Associated Projects

A.7 Procurement Strategy

Project / Increment Title	Contractor	Contract Scope	Contract Type	Procurement Route
Type 45 Destroyer	BAE Systems Surface Ships Ltd (BAE Systems Electronics Ltd Farnborough)	Full development and production	Target Cost Incentive Fee Shareline	Single Source
Principal Anti-Air Missile System	EURO PAAMS	Full scale engineering development and initial production including missiles for initial use	Fixed Price	Collaborative with France and Italy
Principal Anti-Air Missile System	EURO PAAMS	Follow-on ships production	Fixed price for five follow-on equipments	Collaborative with France and Italy
Principal Anti-Air Missile System	EUROSAM & UKAMS[1]	Production of missiles	Fixed Price	Collaborative with France and Italy through Organisation Conjointe de Cooperation en matiere d' Armement

A.8 Support Strategy

Description
There are three broad layers to Type 45 Destroyer support: a. Interim Support (Support to Stage 2 Trials) covers the period from the First of Class (HMS Daring) Acceptance off Contract to In-Service Date. The change to ship acceptance approved as part of wider programme re-approval in August 2007 advances the date that the First of Class is accepted off contract, consequently requiring interim support arrangements to be put in place until In-Service Date. Funding for Interim Support was approved under the Six Ship Approval and costs are reported against the Demonstration & Manufacture phase costs for Type 45, hence this element is not reported further within the Support section. The Interim support contract completed at In-Service Date for HMS Daring. For the other five Type 45s support to Stage 2 Trials will be provided under the Full Support contract, although, as above, funding was approved under the Six Ship Approval and costs are reported against the Demonstration & Manufacture phase costs for Type 45. b. Type 45 Initial Spares (Industrial Investment and Long Lead spares). Purchase of long-lead spares and industrial mobilisation activities for which contracts needed to be placed ahead of the Type 45 Full Support Solution (see c. below) in order to be available for In-Service Date. The Approval did not set any Time limits for contract end dates, therefore only progress against Cost boundaries is reported within the Support section. c. Full Support. Phase 1 of the long term support strategy is the delivery of a Class wide Type 45 Support Solution through a single source incentivised contract with BAE Systems Surface Fleet Ltd as the support integrator for Type 45. Support will then migrate into the Surface Ship Support Programme (SSSP). The Full Support contract for the warship (the Phase 1 work described above) was placed in September 2009. It includes the activities to establish the support solution infrastructure and team and then to provide up to seven years In-Service support. Support to the Principal Anti-Air Missile System (PAAMS) is provided by a separate single source incentivised contract with MBDA (UK), which was placed on 26th April 2011.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
Type 45 Initial Spares	BAE Systems Surface Ships Ltd	lead time spares and Industrial Mobilsation	Mix of fixed and firm price	Single Source
Type 45 Full Support	BAE Systems Surface Ships Ltd	of Support for Type 45 Platform Equipments and	Target Cost Incentive Fee	Single Source

[1] UKAMS is a wholly owned company of MBDA.

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Type 45 Destroyer	213	232	+19	4%	4%
Total (£m)	**213**	**232**	+19	**4%**	**4%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Type 45 Destroyer	-	4757	5209

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Type 45 Destroyer	4757	5556	+799	-108
Total (£m)	**4757**	**5556**	**+799**	**-108**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.1.1 Type 45 Destroyer

Date	Variation (£m)	Category	Reason for Variation
March 2012	-30	Budgetary Factors	BAE Systems Terms Of Business Agreement savings released from the six ship contract (-£30M) due to greater certainty in the cost to complete the contract.
March 2012	-37	Technical Factors	Risk Retirement (-£37m). This comprises release of risk during the Planning Round 12 review process (-£5M), release of risk funding associated with HMS Dragon (-£26M) and successful mitigation of risk outside of the Six Ship Approval boundary (-£6M).

March 2012	-29	Technical Factors	Revised programme cost to completion (-£5M) driven by; reduced costs for Batch 2 Stage 2 Trials (-£7M); and a revised estimate to completion of the Interim support costs (-£17M)
March 2012	-12	Budgetary Factors	Reversal of previous Sea-Viper planning round decsions (-£15M) and in-year Sea-Viper programme adjustments (+£3M)
Historic	-21	Budgetary Factors	Planning Round decisions and adjustments in 2011. Risk reduction and re-profiling (-£11M), BAE Systems Terms of Business Agreement savings released through the six ship contract (-£10M)
Historic	-21	Technical Factors	In Year underspend as a result of risk retirement (-£24m) from programme successes e.g. In Service date and Aster missiles firings. In Year overspend on Sea Viper (+£3m).
Historic	-18	Accounting Adjustments and Re-definitions	Removal of IRDEL (Foreign Exchange) in accordance with a change of Departmental policy
Historic	+30	Capability Trading	Decision to reverse Capability Trade with respect to funding of Aster missile production programme.
Historic	-277	Accounting Adjustments and Re-definitions	Removal of Cost of Capital due to Clear Line of Sight policy implemented by HM Treasury.
Historic	-17	Procurement Processes	Benefit of on time contractual delivery of Ships 1 & 2
Historic	-3	Procurement Processes	In-year underspend (-£9M), resulting in slippage of work (+£6M).
Historic	+2	Budgetary Factors	Planning Round decisions and adjustments in 2009 (+£2M)
Historic	-40	Budgetary Factors	Planning Round decisions and adjustments in 2010 (-£40M).
Historic	+20	Exchange Rate	Principal Anti-Air Missile System FOREX increase, In-year (+£14M) and in Planning Round 2010 (+£7M), but reduced FOREX related iRDEL (-£1M)

Historic	+46	Budgetary Factors	Principal Anti-Air Missile System Programme re-alignment of Aster Missile production schedule in Planning Round 2010
Historic	-26	Technical Factors	Benefits of earlier delivery of Platforms through reduced trials support costs (-£30M) offset by an increase in programme costs identified through the annual financial planning process (+£4M).
Historic	+44	Exchange Rate	Increase in the Principal Anti-Air Missile System in-year costs due to Exchange Rate (+£23M) and an increase in the Principal Anti-Air Missile System Planning Round 2009 costs for Exchange Rate (+£21M).
Historic	+2	Inflation	Additional Type 45 Ship costs due to higher than anticipated escalation of contractual Variation On Price indices (+£2M).
Historic	-113	Accounting Adjustments and Re-definitions	As a direct result of a move of ship build from Barrow to Clyde, in line with Maritime Industrial Strategy principles, there has been an increase in overheads for the 'Six Ship Proposal' price that is not directly attributable to this project (-£78m). Transfer to Maritime Training Systems Integrated Project Team (-£35m).

Historic	-114	Budgetary Factors	Equipment Programme 2007 savings measure to reduce the quantity of the Principal Anti-Air Missile System missiles (-£30m).A combination of Equipment Plan Options plus internal adjustments. The Options were: re-profiling of the contract for demonstration and manufacture (approved six-ship programme); re-profiling of the (planned) twelve ship programme; reducing the scope of the Principal Anti-Air Missile System missile buy and costs of shipbuilders' premium (+£91m). Increases to the Principal Anti-Air Missile System contract and additional funding and increases in delay and dislocation money (+£177m). Incremental Acquisition Programme re-profiling and Incremental Acquisition Programme upgrade deleted (-£238m). Equipment Plan Options re-profiling costs for ships five and six and deferring ships seven and eight (+£2m). Correction to forecast: costs wrongly attributed to ships The Principal Anti-Air Missile System increased cost of Longbow mooring (+£4m). Savings in ships capability (performance) to bring costs back to Equipment Programme 2005 baseline; Combat Systems risk provision (-£60m), Whole Life Support (support solution study) (-£21m) and Incremental Acquisition Programme (-£64m). Revised estimate of Westinghouse Rolls-Royce 21 engine concept/assessment phase (-£1m).

Historic	+1355	Contracting Process	Estimated increase in ship build cost based on an assessment of the 'Six Ship Proposal' price from the Prime Contractor (+£462m). Estimated increase in ship build cost (+£184m). Costs omitted from Equipment Programme 2005 and MPR05 relating to increase in ship build cost (+£52m). Higher than expected costs for the Principal Anti-Air Missile System Production Equipment (+£124m). Corrections to Warship costs (+£13m). Expected increase in costs of elements of batch two ships which are yet to be negotiated (+£250m). Corrections and adjustments to forecast costs (+£97m). The Principal Anti-Air Missile System missiles re-instated (+£173m).
Historic	+55	Exchange Rate	Pound to Euro rate worse than originally forecast (+£47m). The Principal Anti-Air Missile System exchange rate (impact of rate at Equipment Programme 2005) (+£8m).
Historic	+3	Technical Factors	Issues arising from migrating from Skynet 4 to Skynet 5 and to implement system growth (+£3m)
Net Variation (£m)	**+799**		

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

Project/ Increment Title	Category	Explanation
Type 45 Destroyer	Budgetary Factors	There was no operational impact on the programme as in 2007 and 2008 additional funding was acquired through the planning round.

B.4 Progress against approved Support / PFI Cost

Project/Increment Title	Approved Cost (£m)	Forecast cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Type 45 Destroyer Initial Spares	14	14	0	0
Type 45 Destroyer Full Support	804	747	-57	+5
Total (£m)	**818**	**761**	**-57**	**+5**

B.4.1 Cost variation against approved Support / PFI Cost

B.4.1.1 Type 45 Destroyer Full Support

Date	Variation (£m)	Category	Reason for Variation
March 2012	+11	Budgetary Factors	Inclusion of Type-45 specific combat systems costs managed by another project team within the scope of the In-service Approval (+£11m).
March 2012	-21	Budgetary Factors	Programme adjustments both in-year FY2011/12 reductions (-£25M) and as part of Plannning Round 12 realignment (+£4M)
March 2012	+15	Budgetary Factors	As costs have matured and additional contracts have been placed, the Sea-Viper contracts value have increased (+£15M)
Historic	-16	Budgetary Factors	A Planning Round 2011 option re-profiled the Type 45 build and support programme to take account of the adjustments in the programme and the latest pricing information.
Historic	-11	Procurement Processes	The impact of agreeing and placing remaining support contracts for Sea Viper at an overall lower cost than originally estimated.
Historic	-31	Procurement Processes	Variation caused by better estimations made after awarding and embedding of support contract that have come in below approval figures used to estimate in the prior year
Historic	-4	Procurement Processes	The impact of agreeing and placing support contracts at a lower cost than originally estimated.
Net Variation (£m)	**-57**		

B.4.2 Operational Impact on Support / PFI Cost

Project / Increment Title	Category	Explanation
Type 45 Destroyer Full Support		No operational impact is expected as the reduced spares holdings will still allow the Ships to meet their required operational availability.

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	232	0	232
Demonstration and Manufacture Phase	5000	218	5218
Support Phase / PFI Cost	139	93	232
Total Expenditure	**5371**	**311**	**5682**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase (months)
Type 45 Destroyer	July 1991	July 2000	108[2]

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Approved	Budgeted For	Latest Approved
Type 45 Destroyer	-	May 2007	November 2007

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Type 45 Destroyer	The date to which the First of Class will meet the Customer's minimum operational requirement.

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Type 45 Destroyer	May 2007	July 2010	+38	0

C.3.3 Timescale variation

C.3.3.1 Type 45 Destroyer

Date	Variation (+/- months)	Category	Reason for Variation
Historic	-4	Technical Factors	Retirement of programme risk (e.g. 2 successful Principal Anti-Air Missile System missile firings, Daring Accepted off Contract) now reflected in latest Timescale Risk Analysis which indicated In-Service Date achievable 4 months earlier than previously anticipated.
Historic	+24	Procurement Processes	Longer than expected design phase plus an acknowledgement that a number of other factors which had impacted earlier in the programme had injected unrecoverable delay. These factors were principally related to delays in agreeing the original industrial strategy; problems associated with managing parallel and dependant development programmes and a better understanding of the programme to deliver In-Service Date. (MPR02 +6 months; MPR04 +18 months).

Historic	+18	Technical Factors	Latest Timescale Risk Analysis founded on data from Six Ship Proposal from BAE Systems (+11 months). Refinement of timescale risk analysis shows that there are a number of opportunities in the programme which support a most likely date of December 2009. Principal among these is the opportunity for parallel working that is not yet fully exploited within industry's plan and the potential to use the second ship to demonstrate elements of First of Class capability (-1 month). Impact of slippage to SAMPSON programme and measures taken to mitigate the full impact of that delay (+3 months). Assessment based on full timescale risk analysis (conducted jointly with BAE Systems) which gave a most likely date of March 2010, based on baseline programme. Agreement reached with company and Customer 1, however, on how Stage 2 trials programme can be de-scoped thereby giving a Most Likely date of October 2009 (+ 2 months). Latest assessment based on timescale risk analysis of most up to date programme reflecting de-scoping of trials programme (+3 months).
Net Variation (+/- months)	**+38**		

C.3.4 Other costs / savings resulting from timescale variation

Project/Increment Title	Date	£m (+ Cost / - Saving)	Category	Reason for expenditure or saving
Type 45 Destroyer	Historic	-4	Technical Factors	Improved estimate as a result of recent studies.
Type 45 Destroyer	Historic	+2	Technical Factors	Additional maintenance periods required to run-on Type 42 Destroyer for 11 months[3].
Type 45 Destroyer	Historic	+1	Technical Factors	Additional maintenance periods required to run-on Type 42 Destroyer for 7 months.

Type 45 Destroyer	Historic	+196	Technical Factors	Additional Type 42 run-on costs due to Type 45 slippage.
Total		**+195**		

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

Project/Increment Title	Operational Impact
Type 45 Destroyer	Delay in In-Service Date extended the period before a capability to defeat multiple attacks by sea-skimming missiles was available, as well as the capability for Royal Navy escorts to provide tactical control of combat aircraft.

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Type 45 Destroyer	Full Operating Capability will occur when all systems are at Full System Acceptance, the Principal Anti-Air Missile System Full Capability has been delivered and all environmental trials are complete. For Ship 1 Full Operating Capability will occur after In-Service Date.	

C.5. Support / PFI Contract

C.5.1 Scope of Support / PFI Contract

Project/Increment Title	Scope
Type 45 Destroyer Initial Spares	Contract for purchase of Long Lead time spares and Industrial Mobilisation activities
Type 45 Destroyer Full Support	Up to seven years' of Support for Type 45 Platform Equipments and some complex equipments

C.5.2 Progress against approved Support / PFI Contract Go-Live Date

Project/Increment Title	Approved Date	Actual Date	Variation (+/- months)	In-year Variation (+/- months)
Type 45 Destroyer Initial Spares	June 2008	June 2008	0	0
Type 45 Destroyer Full Support	April 2009	September 2009	+5	0

C.5.2.1 Go-Live Date Variation

Type 45 Destroyer

Date	Variation (+/- months)	Category	Reason for Variation
Historic	+5	Procurement Processes	5 month delay in placing Full Support Contract caused by extended contract negotiations and legal review of proposed Contract
Net Variation (+/- months)	**+5**		

C.5.3 Progress against approved Support / PFI Contract End Date

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-year Variation (+/- months)
Type 45 Destroyer Initial Spares	-	-	-	
Type 45 Destroyer Full Support	November 2017	-		

C.5.3.1 End of Contract Date Variation

C.5.4 Other costs / savings resulting from Support Cost variation

C.5.5 Operational Impact of Support / PFI Support Contract variation

Project/Increment Title	Operational Impact
Type 45 Destroyer	The delay in placing the support contract resulted in reducing the contract mobilisation period. There was no operational impact to HMS Daring as the ship did not enter service until July 2010.

[2] This aligns with the derived date for Initial Gate above. Type 45 is a legacy project building on the Assessment work carried out in phase 1 of the collaborative Horizon Project.

[3] Relates to slippage to In-Service Date of Type 45 first of class only, to align with the definition of In-Service Date at Section C.3.2

D Section D: Performance

D.1. Sentinel Score

Current score	Last years score	Comments
88% GREEN	82% GREEN	

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	Type 45 Platform including the Principal Anti-Air Missile System	Yes (with risks)	
2. Training	Provision of First of Class and Steady State Training for: Weapons Engineer; Marine Engineer; Warfare and the Principal Anti-Air Missile System. Also provision of Collective Training	Yes (with risks)	
3. Logistics	Investment Approval Board Submission; Unit Maintenance Management System; Tech. Docs.; Initial Provision Lists and First Outfit; Tooling; Support Data Pack; Support Solution Envelope; Principal Anti-Air Missile System & Long Range Radar; Information Management System	Yes (with risks)	
4. Infrastructure	Appropriate facilities for Type 45 to be available at the following: Her Majesty's Naval Base Portsmouth; Her Majesty's Naval Base Devonport; Her Majesty's Naval Base Clyde; Defence Storage and Distribution Agency Gosport	Yes (with risks)	
5. Personnel	Provision of Manpower (the crew) for all 6 ships	Yes	
6. Doctrine	Enable Type 45 to undertake assigned operations.; Enable Type 45 Air Defence activity; Tactical advice for use of the Principal Anti-Air Missile System Command and control, Aster missile system and Combat Management System; Capability upgrades are enabled through platform life	Yes	
7. Organisation	Maintenance of Type 45 In-Service Date and Type 42 paying off plan.	Yes	
8. Information	Included within the Equipment Defence Lines of Development for Type 45	Yes	
Current forecast (with risks)		8 (4)	0
Last year's forecast (with risks)		8 (4)	0

D.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
Historic	Equipment	Technical Factors	At In Service Date it was accepted that some technical issues remained within the Ship's Power and Propulsion System and Communications Systems.

Historic	Equipment	Technical Factors	At In Service Date the previous issues with respect to Aster missile reliability had been successfully addressed through a salvo firing in June 2010.
Historic	Equipment	Technical Factors	The key remaining risk is against Aster missile reliability. Investigation continues through the tri-national Principal Anti-Air Missile System programme, mitigation includes further test firings and a UK salvo firing in June 2010.
Historic	Training	Technical Factors	The key remaining risk is the delivery of steady state training for Marine Engineering, Sea Viper and Warfare Maritime Composite Training System. Steady state training should be available during 2011, but this is currently being mitigated through interim training measures.
Historic	Logistics	Technical Factors	The key remaining risk is that the Sea Viper In-Service Support Contract will not be in place for HMS Daring In-Service Date. This affects the availability of HMS Daring's Sea Viper system, which is being mitigated by interim contractual arrangements. A further consequence of the Aster missile reliability issue is the availability of the Aster missile stockpile. This risk is to be tolerated until a revised delivery profile is received from the Sea Viper programme, at which time further mitigation may be possible.
Historic	Infrastructure	Technical Factors	The key remaining risk is the ability to maintain the Aster missile stockpile. This requires provision of a dedicated UK Missile Maintenance Installation which is due to be installed within Defence Storage and Distribution Agency Gosport and available in 2014. This risk, which is based on missile shelf life, is to be tolerated with careful stockpile management as reworked missiles are delivered.
Historic	Equipment	Technical Factors	The key remaining risk is the testing and integration of the Principal Anti-Air Missile system. This will be mitigated through further test firings and Naval Weapons Sea Trials during 2009.
Historic	Training	Technical Factors	The key remaining risk is the timely delivery of Marine Engineering shored-based training for Dauntless. This is being mitigated through the delivery of customised courses making use of training material already produced for Daring's crew, augmented by the increased use of onboard training.

Historic	Infrastructure	Technical Factors	The key remaining risk is the timely provision of an Aster capable missile loading facility in Portsmouth. The late provision of this facility would be mitigated by the use of alternative missile loading facilities at either Marchwood Military Port near Southampton or Glen Mallen near Glasgow.

D.3. Performance against Key Performance Measures

D.3.1 Type 45 Destroyer

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Equipment	Principal Anti-Air Missile System. The Type 45 shall be able to protect with a Probability of Escaping Hit of {w}, all units operating within a radius of {x}, against up to {y} supersonic sea skimming missiles arriving randomly within {z} seconds.	Yes (with risks)	
2	Equipment	Force Anti-Air Warfare Situational Awareness. The Type 45 shall be able to assess the Air Warfare Tactical Situation of 1000 air real world objects against a total arrival and/or departure rate of 500 air real world objects per hour.	Yes	
3	Equipment	Aircraft Control. The Type 45 shall be able to provide close tactical control to at least 4 fixed wing aircraft, or 4 groups of aircraft in single speaking units, assigned to the force.	Yes	
4	Equipment	Aircraft Operation. The Type 45 shall be able to operate both one organic Merlin (Anti-Submarine Warfare and Utility variants) and one organic Lynx Mk8 helicopter, although not simultaneously.	Yes	
5	Equipment	Embarked Military Force. The Type 45 shall be able to operate an Embarked Military Force of at least 30 deployable troops.	Yes	

6	Equipment	Naval Diplomacy. The Type 45 shall be able to coerce potential adversaries into compliance with the wishes of Her Majesty's Government or the wider international community through the presence of a Medium Calibre Gun System of at least 114mm.	Yes	
7	Equipment	Range. The Type 45 shall be able to transit at least 3000 nautical miles to its assigned mission, operate for 3 days and return to point of origin, unsupported throughout, within 20 days.	Yes	
8	Equipment	Growth Potential. The Type 45 capability shall be able to be upgraded to incorporate new capabilities or to enhance extant capabilities through displacement Margins of at least 11.5%.	Yes	
9	Equipment	Availability. The Type 45 shall have a 70% availability to contribute to Maritime Operations over a period of at least 25 years, of which at least 35% shall be spent at sea.	Yes	
Current forecast (with risks)			9 (1)	0
Last year's forecast (with risks)			9 (4)	0

D.3.1.2 Key Performance Measures Variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	2	Technical Factors	This Key Performance Measure was met in Dec 11 with the roll-out of Combat Management System 2.4.3.1 and recorded in the Portfolio of Evidence for HMS DRAGON's In-Service Date.

March 2012	3	Technical Factors	This Key Performance Measure was met in Jun 11 with the roll-out of the SATURN communications system and recorded in the Portfolio of Evidence for HMS DIAMOND's In-Service Date.
March 2012	4	Technical Factors	This Key Performance Measure was met with resolution of the Electromagnetic Compatibility issue for Lynx and recorded in the Portfolio of Evidence for HMS DRAGON's In-Service Date.
Historic	1	Technical Factors	The intent of this Key Performance Measure was met, but further work is required before operational deployment.
Historic	2	Technical Factors	The intent of this Key Performance Measure was met, but at In-Service Date it was accepted that issues with the communications systems affected Situational Awareness. The agreed mitigations included software updates, improved training and the development of Standard Operating Procedures.
Historic	3	Technical Factors	The intent of this Key Performance Measure was met, but at In-Service Date it was accepted that issues with the communications systems affected Aircraft Control. The agreed mitigation was a major software update in August 2010.
Historic	4	Technical Factors	The intent of this Key Performance Measure was met, but at In-Service Date it was accepted that Aircraft Operations would be affected by adverse Electromagnetic Compatibility issues between ship's systems and helicopters. The agreed mitigation was through the implementation of Standard Operating Procedures.
Historic	1	Technical Factors	The intent of this Key Performance Measure was met, but at In Service Date the previous issues with respect to Aster missile reliability were addressed through a successful salvo firing in June 2010.
Historic	1	Technical Factors	Most recent Principal Anti-Air Missile System test firings did not meet all of their planned objectives. The key remaining risk is therefore against Aster missile reliability. Investigation continues through the tri-national Principal Anti-Air Missile System programme.

Historic	2	Technical Factors	When MPR07 was compiled the extant version of Combat Management System software had insufficient capability to fully satisfy Key User Requirements 2 and 3. The decision was made during MPR08 reporting period to upgrade the Combat Management System software, which increased functionality and fully satisfied Key User Requirements 2 and 3.
Historic	2	Budgetary Factors	Revised programme to achieve earliest possible In-Service Date leads to a lower level of Combat Management System functionality at In-Service Date.
Historic	3	Technical Factors	When MPR07 was compiled the extant version of Combat Management System software had insufficient capability to fully satisfy Key User Requirements 2 and 3. The decision was made during MPR08 reporting period to upgrade the Combat Management System software, which increased functionality and fully satisfied Key User Requirements 2 and 3.
Historic	3	Budgetary Factors	Revised programme to achieve earliest possible In-Service Date leads to a lower level of Combat Management System functionality at In-Service Date.
Historic	4	Technical Factors	Integrated Project Team & Director of Equipment Capability agreed to conduct "First of Class Flying Trials" with a Merlin. This will remove the expectation that at In-Service Date only Lynx capability will have been demonstrated. Ability to operate Lynx but not Merlin will be demonstrated by Full Operating Capability In-Service Date. Merlin will be demonstrated beyond In-Service Date

D.3.1.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
March 2012	1	To be Met (with risks)	No operational impact. Mitigations are in place to ensure that HMS Daring is able to meet her operational commitments as programmed by Navy Command and promulgated through the Long Term Operating Schedule.
Historic	1, 2, 3 and 4	To be Met (with risks)	No operational impact. Mitigations are in place to ensure that HMS Daring is able to meet her operational commitments as programmed by Navy Command and promulgated through the Long Term Operating Schedule.

D.4 Support Contract

D.4.1 Type 45 Destroyer

D.4.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Logistics	Attributable Ship Availability Factor. An overall assessment of the ability of the class of ships to undertake their planned operational tasks.	Yes	
2	Logistics	Ship Material State. An assessment, conducted prior to operational training, of the actual condition of the equipment on each ship.	Yes	
3	Logistics	Safety Performance. A measure of the number of safety items whose mitigation plans or completion dates are overdue.	Yes (with risks)	
4	Logistics	Maintenance Clearance Rate. A measure of the number of outstanding Maintenance Items at the end of formal maintenance opportunities.	Yes	
5	Logistics	Support Service Responsiveness. A measure of the number of requests for support that are overdue for closure beyond their agreed target date.	Yes	

6	Logistics	Sustainability / Continuous Improvement. A measure of the work undertaken to improve the support service through a Continuous Improvement programme aimed at reducing support costs and/or increasing Ship availability.	Yes	
Current forecast (with risks)			6 (1)	0
Last year's forecast (with risks)			6 (1)	0

D.4.1.2 Key Performance Measures variation

Date	Key Performance Measure	Category	Reason for Variation
March 2012	3	Technical Factors	A technical IT problem meant that 8 formal safety reports from HMS Dragon became overdue for their categorisation reviews.
March 2012	2	Technical Factors	HMS Diamond Material And Safety Check 27 Feb 2012 assessed as Satisfactory for both Marine Engineering & Weapons Engineering.
Historic	2	Technical Factors	HMS Dauntless Material Assessment & Safety Check in February 2011 showed that whilst Weapons Engineering aspects were satisfactory Marine Engineering aspects were deemed to be Below Standard.

D.4.1.3 Operational Impact of variation

Date	Key Performance Measure	Forecast	Operational impact of variation
March 2012	3	At Risk	No operational impact as KPM is forecast to be met in April 2012 and tighter process controls have already been implemented to prevent a reoccurence of the March 2012 failure.
March 2012	2	To be Met	No operational impact as KPM now forecast to be met.
Historic	2	To be Met (with risks)	No operational impact. Recovery action is part of a wider power and propulsion package of work and the Below Standard assessment is not considered to be symptomatic of an underpinning long term failure. The recovery action will resolve all issues prior to HMS Dauntless' first deployment.

Project Title		
Typhoon		
Team Responsible		
Typhoon Project Team		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Air Commodore Mark Hopkins (Air Capability)	25th April 2012	
Project/Increment Name	**Current Status of Projects /**	
Typhoon	Post-Main Investment Decision	
Typhoon Future Capability Programme	Post-Main Investment Decision	
Active Electronic Scanned Array	Pre-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

Typhoon
Typhoon, formerly known as Eurofighter, is an agile multi-role combat aircraft. Originally designed primarily, but not exclusively, for air superiority, the aircraft is also capable of delivering a precision ground attack capability. Typhoon has the flexibility to respond to the uncertain demands of the current and evolving strategic environment.

The aircraft is being developed, produced and supported in a collaborative project with Germany, Italy and Spain. The project is managed on behalf of the four partner nations by the NATO Eurofighter and Tornado Management Agency. To date, contracts have been placed for the RAF to receive 160 aircraft in three tranches. Typhoon support is being delivered through the letting of long-term contracts against five areas of support.

Typhoon Future Capability Programme
The Typhoon Future Capability Programme will provide enhancements to the Typhoon aircraft, both in the air-to-air and air-to-surface roles, to sustain the RAF's Typhoon fleet's multi-role capabilities.

The first phase of the Future Capability Programme, under a contract signed in March 2007, will integrate Paveway IV and the Litening III Laser Designator Pod onto Tranche 2 aircraft from 2012 onwards as well as interoperability upgrades without which those aircraft will be neither compliant with new civil airspace regulations nor interoperable with key coalition allies. It will also provide the Human Machine Interface for Multi-Role operations, allowing Typhoon to fulfil air-to-air and air-to-surface operations with the current, planned and projected weapons.

The Department will continue to develop the Typhoon capability incrementally in line with the Strategic Defence and Security Review 2010.

A.2 The Assessment Phase

Typhoon has been in service with the RAF since 2003 and commenced operational duties for the first time in June 2007 when it assumed Quick Reaction Alert responsibility for defence of UK airspace. Deployable Air Defence operational status was achieved on 1 January 2008, which enables Typhoon to deploy worldwide on air-to-air missions. Typhoon was declared to NATO in the deployable Air Defence – Advanced role on 1 April 2008. Typhoon assumed Quick Reaction Alert responsibility for defence of South Atlantic Islands airspace in September 2009, taking over from Tornado F3.

The existing advanced air-to-air missile capability on Tranche 1 aircraft has been complemented by the integration of an initial precision air-to-surface capability, which was declared combat ready by the RAF in July 2008. This air-to-surface capability enabled declaration of multi-role status and is in advance of more comprehensive air-to-surface capability through the Typhoon Future Capability Programme for Tranche 2 aircraft.

Deliveries of Tranche 2 aircraft commenced in October 2008. The original Typhoon fleet numbers required (232 aircraft) were established in the 1990s. Current fleet planning and assumptions to meet defence requirements have determined the aircraft numbers and capabilities required now (160 aircraft). The contract for the third Tranche, signed in July 2009, represents the best solution for the UK in balancing current military requirement and international obligations against affordability. The UK has retained the option to order further aircraft. Deliveries of Tranche 3 aircraft are scheduled to start in 2013.

The Typhoon Availability Service contract with BAE Systems, signed in March 2009 formally commenced in September 2009. The Engine Availability Service contract with Rolls-Royce was signed in December 2009. These contracts are part of the strategy to transform support arrangements through partnering with UK industry.

A.3 Project History Since Main Gate

Typhoon
Pre-Development, which commenced with the approval of the feasibility study in 1984, comprised a number of activities. Following early concept studies, and various efforts at establishing a collaborative programme, there were two key Typhoon demonstration activities completed by the UK before development: the Experimental Aircraft Programme, an airframe programme primarily aimed at proving the feasibility of the Typhoon unstable flight control concepts, and the XG40 engine demonstrator programme at Rolls Royce. The results of these demonstrators and their associated studies, together with the results of similar work within the other Nations were harmonised in a Definition, Refinement and Risk Reduction phase that ran from the end of 1985 when four Nations signed the initial Memorandum of Understanding, until 1988 when the development contract was signed.

Typhoon Future Capability Programme - Phase 1
The approval process for Typhoon Tranche 2 noted the intention to develop the capability of the aircraft through life and envisaged an incremental route to the acquisition of future capability enhancements. The Assessment Phase found technology and integration were not a major challenge and that risks mostly pertained to the commercial and industrial aspects of the programme. These have been addressed and the MOD approvals process for the project was accelerated to combine Initial Gate, including the cost already incurred during the Assessment Phase, and Main Gate in order to maximise efficiency across the four Partner Nations.

A.4 In-year Progress

The outcome of the review into basing was announced by the Secretary of State for Defence in July 2011 which will result in the closure of Leuchars as an Air Force base and move the Typhoon Squadron to RAF Lossiemouth, redeploying aircraft from 2013 onwards.

A proposal was made in May 2010 by the Eurofighter GmbH consortium to slow down rate of production of Typhoon Tranche 3A aircraft for all four partner nations. The Typhoon partner nations agreed to this proposal in July 2011. The agreement on production slowdown aims to protect the industrial capacity of the Eurofighter partner companies to service export orders for Typhoon while meeting the requirements of the partner nations. In March 2011, Typhoon aircraft were deployed overseas for the first time on contingent operations in support of the coalition plan to enforce United Nations Resolution 1973 (Libya).

Following Typhoon's first overseas contingent operational deployment in March 2011 on Operation ELLAMY, it was used initially in an air defence role and then as a ground attack aircraft against targets varying from tactical to strategic. The aircraft consistently demonstrated exceptional levels of reliability, performance, accuracy and overall cost-effectiveness over and above the MOD's very high expectations. Typhoon aircraft deployed on Operation ELLAMY returned to the UK in September 2011.

In June 2011 the ministers of the four core partner nations signed an agreement which signalled their intent to develop an operational requirement for an Electronically Scanned radar for the Eurofighter programme which would aim to introduce a harmonized new radar onto the aircraft, also enhancing the exportability of the aircraft to new overseas customers.

A.5 Capability Risks

Typhoon is intended to be a cornerstone of UK air defence and the aircraft will be pivotal to the delivery of Standing Home Commitments. Having replaced Jaguar in the ground attack role and with future reductions in other aircraft types occurring, loss of Typhoon would reduce the UK's ground-attack and air superiority capabilities.

A.6 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status

A.7 Procurement Strategy

Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Typhoon	Eurofighter GmbH Airframe consortium comprising: Alenia, BAE Systems, Cassidian (formerly EADS(CASA) and EADS(Deutschland))	Development	Fixed Price for Airframe and equipments and Target Cost Incentive Arrangement for Aircraft Equipment Integration. Following a breach of the Limit of Contractor Liability provisions the price elements for Airframe and equipments have been converted to a Limit of Liability cost reimbursement without profit.	Non-competitive but with international sub-contract competitive elements, the value of which amounts to some 30% of the overall value of the Prime Contract.
Typhoon	Eurojet Turbo GmbH Engine consortium comprising: Avio (formerly FIAT Avio), ITP, MTU, Rolls Royce	Development	Firm Price (Avio, ITP, MTU) Fixed Price (Rolls Royce) for propulsion systems	Non-competitive but with international sub-contract competitive elements, the value of which amounts to some 10% of overall value of the Prime Contract.

Typhoon	Eurofighter GmbH Airframe consortium (see details under development above).	Production Investment/Production	Overall Maximum prices for Production Investment and Production of Airframes for all 232 UK aircraft. (Fixed Price for production of 1st and 2nd tranche Airframe). Fixed prices for all Production, Investment and Production of Aircraft Equipment.	Non-competitive but with International sub-contract competitive elements, the value of which amounts to some 10% of the overall value of the Prime Contract.
Typhoon	Eurojet Turbo GmbH Engine consortium (see details under development above).	Production Investment/Production	Overall Maximum prices for Production Investment and Production of Engines for all 232 UK aircraft. Firm Price (Avio, ITP, MTU) Fixed Price (Rolls Royce) for Tranche 1, Tranche 2 and Tranche 3 Engine Production Investment and Production.	Non-competitive but with International sub-contract competitive elements, the value of which amounts to some 10% of the overall value of the Prime Contract.
Typhoon Future Capability Programme	Eurofighter GmbH Airframe consortium comprising: Alenia, BAE Systems, Cassidian (formerly EADS(CASA) and EADS(Deutschland))	Design, development, demonstration, qualification and production clearance of the first batch of enhancements.	Overall Max Price to be converted to UK Firm Price	Collaborative. Non-competitive but with international competitive sub-contract elements.

A.8 Support Strategy

Description
Typhoon's partnered support strategy was originally approved in 2000. Its principles were reinforced by the results of a 2004 Support Review. The partnered support strategy - referred to as Typhoon Future Support - will be delivered through the letting of long-term contracts against five areas of support: for the Typhoon Availability Service on BAE Systems; for the propulsion availability service on Rolls Royce; for Avionics (Spares Provisioning and Component Repair) via the NATO Eurofighter and Tornado Management Agency; and for international Technical Support Services, also via the NATO Eurofighter and Tornado Management Agency. Valuable experience has already been gained through the letting of incremental contracts to transform Typhoon support, the first of which was the initial phase of the engine availability contract with Rolls Royce in 2005. Work is now well underway to implement changes to the contractual framework for support by replacing eleven legacy contracts with four new more efficient contracts as a part of a wider Transformation programme jointly introduced by Partner Nations and Eurofighter Gmbh.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
Typhoon Availability Service	BAE Systems	Support	Target Cost plus Incentive Fee	Non-competitive
Engine Availability Service	Rolls Royce	Support	Target Cost plus Incentive Fee	Non-competitive
Spares Provisioning	Eurofighter GmbH and Eurojet GmbH	Support	Fixed Price	International Non-competitive based on commitments under Memoranda of Understanding, with international workshare of sub-contracting also determined by those Memoranda
Component Repair	Eurofighter GmbH and Eurojet GmbH	Support	Fixed Price	International Non-competitive based on commitments under Memoranda of Understanding, with international workshare of sub-contracting also determined by those Memoranda
Technical Support Services	Eurofighter GmbH and Eurojet GmbH	Support	Fixed Price	International Non-competitive based on commitments under Memoranda of Understanding, with international workshare of sub-contracting also determined by those Memoranda

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Typhoon	87	78	-9	0.5%	0.4%
Typhoon Future Capability Programme	39	39	0	9%	9%
Active Electronic Scanned Array	6	6	0	-	-
Total (£m)	**132**	**123**	**-9**	**1%**	**1%**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Typhoon	-	15173	15348
Typhoon Future Capability Programme	355	402	420
Active Electronic Scanned Array	-	***	-

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Typhoon	15173	17671	+2498	-69
Typhoon Future Capability Programme	402	441	+39	+22
Total (£m)	**15575**	**18112**	**+2537**	**-47**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.1.1 Typhoon

Date	Variation (£m)	Category	Reason for Variation
March 2012	-4	Budgetary Factors	Reduction in In Year costs of Tranche 3 Production
March 2012	+31	Budgetary Factors	Increased profile as a result of Tranche 3 Production Stretch Planning Round 12 Option taken.

April 2011	-96	Technical Factors	Reduction in Tranche 3 profile from Planning Round 11 to Planning Round 12 due to reassessment of project costs and risks and reduction in software costs.
Historic	-9	Accounting Adjustments and Re-definitions	Removal of Indirect RDEL (Foreign Exchange) in accordance with a change in Departmental policy.
Historic	+86	Exchange Rate	Changes to Planning Round 2011 assumptions for exchange rates.
Historic	-55	Technical Factors	Reassessment of Development costs (-£29m) and Production costs (-£14m). Reduction in Development costs as a result of In Year savings (-£12m).
Historic	+87	Accounting Adjustments and Re-definitions	Removal of Cost of Capital due to Clear Line of Sight policy implemented by HM Treasury (+87m).
Historic	+71	Exchange Rate	Changes to planning round assumptions for foreign exchange rates
Historic	-74	Technical Factors	Reassessment of Development cost (-£70m). Reassessment of Production cost (-4m)
Historic	+2531	Technical Factors	Inclusion of Tranche 3 Aircraft contract (+£2531m)
Historic	+58	Exchange Rate	Changes to planning round assumptions for exchange rates and weakening of the Pound against the Euro and US Dollar during 2008/09
Historic	-47	Technical Factors	Reassessment of Development cost (-£83m). Reassessment of Production cost (+£36m).
Historic	-38	Budgetary Factors	Saving measures taken in Planning Round 2009 (-£38m)
Historic	-128	Budgetary Factors	Reduced provision for modifications (-£123m). Reduced quantity of Role Equipment (-£5m).

Historic	+118	Technical Factors	Development revised cost (+£55m) as a result of revised assessment of change proposals and risk. Tranche 1 production revised cost (+£50m) as a result of refined assessment of retrofit programme and interoperability modifications. Tranche 2 production revised cost (-£5m) as a result of revised assessment of change proposals. Revised assessment of UK contribution to Eurofighter, EuroJet and NATO Eurofighter and Tornado Management Agency admin costs (+£18m)
Historic	+53	Inflation	More accurate calculation of inflation based on advice from NATO Eurofighter and Tornado Management Agency (+£53m)
Historic	-18	Exchange Rate	Revised Euro Rate advised for Planning Round 2008 (-£18m).
Historic	-36	Technical Factors	Re-assessment of Tranche 2 estimated cost (-£418m),Revised assessment of Tranche 2 aircraft production contract (+£385m), Revised assessment for cost of Tranche 2 engine production contract (-£45m), Revised provision for future changes to production standards(-£35m), Revised estimate for retrofitting early Tranche 1 aircraft to final production standard (+£37m), Revised estimate for the precision air to ground capability (+£42m),Reduction in value of Role equipment required for multi role Squadrons (-£17m), Revised assessment of cost of NATO Eurofighter and Tornado Management Agency and industry management fees (+£25m), Reduction in forecast for cost of release to service support (-£10m).
Historic	-482	Procurement Processes	Transfer to Future Capability Programme.

Historic	+65	Technical Factors	Correction of omission of transferred cost in MPR05 calculation.
Historic	+19	Procurement Processes	Industry restructuring.
Historic	-1355	Changed Capability Requirements	Removal of provision for new weapons and Tranche 1 to Tranche 2 retrofit to create separate Typhoon Future Capability project ; subject to approval by Investment Approvals Board (-£377m). Separation of Tranche 3 (-£978m).
Historic	+945	Technical Factors	Higher than expected Development costs, notably for equipments (+£316m). Obsolescence costs resulting from rapid changes in computer hardware technology (+£33m). Increases in the estimated cost of enhancing the weapons system operational capabilities (+£140m). Further price variation due to slippage in the programme (+£136m). Reassessment of the cost of developing aircraft Enhanced Operational Capability and the production of Tranches 2 & 3 aircraft (most notably the reduced scope for savings due to learning curve efficiency gains) (+£320m).
Historic	+290	Changed Capability Requirements	Provision for integration of new weapons and sensors not contained within original approval (includes Conventionally Armed Stand-Off Missile, Advanced Anti-Armour Weapon, Low-Level Laser Guided Bomb, thermal imaging airborne laser designator) (+£239m) & the retrofit of Tranche 1 aircraft to Tranche 2 standard (+£117m).Deletion of requirements for gun (-£32m), 1500L fuel tank (-£16m), CRV7 Rocket (-£2m) & Air Launched Anti Radiation Missile (-£21m). Conventionally Armed Stand-Off Missile integration assets (+£5m).
Historic	-8	Budgetary Factors	Transfers to other budgets (-£8m).

Historic	-12	Inflation	Changes in inflation assumptions since approval: development (+£208m) and production (-£220m).
Historic	-114	Exchange Rate	Changes in exchange rate assumptions since approval (-£114m).
Historic	-52	Procurement Processes	Reprofiling and adjustment of anticipated Tranches 2 and 3 Airframe, Equipment and Engine prices (+£103m). Introduction of benefits to be assumed from planned implementation of SMART Procurement processes (-£165m). Reassessment of the cost and timing of integrating new weapons (+£5m). Increased estimates for QinetiQ/Dstl test facilities in support of the development trials programme (+£5m).
Historic	+413	Procurement Processes	German withdrawal from certain equipments (+£106m). Reorientation Development Assurance Programme to bridge gap between Development and Production Investment (+£28m); extension of Integrated Logistic Support programme (+£45m); Eurofighter/Eurojet GmbH management costs (+£30m); contract price increases (+£87m); risk provision (+£117m).
Historic	+259	Accounting Adjustments and Re-definitions	Changes in accounting rules (inclusion of intramural costs) (+£275m); transfer costs of industrial consortia management activities from production phase to support phase (-£218m); derivation of approved cost on a resource basis (+£202m).
Net Variation (£m)	**+2498**		

B.3.1.2 Typhoon Future Capability Programme

Date	Variation (£m)	Category	Reason for Variation
March 2012	+22	Technical Factors	Higher than expected development costs due to complexity of requirement specification
Historic	-1	Accounting Adjustments and Re-definitions	Removal of Indirect RDEL (Foreign Exchange) in accordance with a change in Departmental policy.
Historic	+5	Exchange Rate	Changes to planning round assumptions for exchange rates.
Historic	-8	Technical Factors	Reduction in costs due to reassessment of risk
Historic	+8	Exchange Rate	Changes to planning round assumptions for foreign exchange rates
Historic	+7	Exchange Rate	Changes to planning round assumptions for exchange rates and weakening of the Pound against the Euro and US Dollar during 2008/09
Historic	-2	Technical Factors	Reduction in CDEL achieved at contract negotiation (-£2m).
Historic	+8	Technical Factors	In 2007/8 an attempt to re-baseline the Future Capability Programme Approval (for predominantly technical reasons) was rejected. This change was not reflected in subsequent Major Projects Report submissions and resulted in a higher Approval baseline being carried forward.
Net Variation (£m)	**+39**		

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

Project/ Increment Title	Category	Explanation
Typhoon	Technical Factors	Does not directly impact operations
Typhoon Future Capability Programme	Technical Factors	No impact on operations

B.4 Progress against approved Support / PFI Cost

Project/Increment Title	Approved Cost (£m)	Forecast cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Typhoon	13100	13100	-0	-0
Total (£m)	**13100**	**13100**	**-0**	**-0**

B.4.1 Cost variation against approved Support / PFI Cost

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	118	2	120
Demonstration and Manufacture Phase	13950	1199	15149
Support Phase / PFI Cost	3191	590	3781
Total Expenditure	**17259**	**1791**	**19050**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Forecast/ Actual Date of Main Investment Decision Approval	Length of Assessment Phase
Typhoon	(Legacy Project) pre SMART	November 1987	-
Typhoon Future Capability Programme	Combined Initial and Main Gate approval	January 2007	-
Active Electronic Scanned Array	July 2011	-	-

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Forecast/Approved	Budgeted For	Latest Forecast/Approved
Typhoon	-	December 1998	-
Typhoon Future Capability Programme	January 2012	June 2012	June 2012
Active Electronic Scanned Array	-	***	-

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Typhoon	In-Service Date - Date of Delivery of first aircraft to the RAF. Initial Operating Capability - When Squadron Pilots begin training they start to contribute to Defence capability.
Typhoon Future Capability Programme	In-Service Date - Delivery to the RAF of autonomous precision Air-to-Surface military capability in 12 Tranche 2 aircraft. Initial Operating Capability - The same as In-Service Date.

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Typhoon	December 1998	June 2003	+54	0
Typhoon Future Capability Programme	June 2012	December 2013	+18	+18

C.3.3 Timescale variation

C.3.3.1 Typhoon

Date	Variation (+/- months)	Category	Reason for Variation
Historic	+32	Technical Factors	Resulting from the application of complex technologies required to enable the equipment to meet the original Staff Requirement (+32 months).
Historic	+22	Procurement Processes - International Collaboration	Reorientation of the Development phase in response to the changed strategic environment and budgetary pressures of the four nations and delays in signature of the Memoranda of Understanding for the Production and Support phases (+22 months).
Net Variation (+/- months)	**+54**		

C.3.3.2 Typhoon Future Capability Programme

Date	Variation (+/- months)	Category	Reason for Variation
October 2011	+15	Technical Factors	Rebaseline of programme by Industry for Integrated Logistic Support and embodiment factors
March 2012	+3	Technical Factors	Re-baselining of Future Capability Programme which affects forecast of ISD.
Net Variation (+/- months)	**+18**		

C.3.4 Other costs / savings resulting from timescale variation

Project/Increment Title	Date	£m (+ Cost / - Saving)	Category	Reason for expenditure or saving
Support costs of current equipment	Historic	+1075		Cost of running on Tornado and Jaguar
Other	Historic	-861		Estimated support costs for Typhoon not incurred
Total		**+214**		

C.3.5 Operational Impact of In-Service Date/Initial Operating Capability variation

Project/Increment Title	Operational Impact
Typhoon	Key improvements in capability not realised until revised ISD are: i) Agility and all altitude performance; ii) Autonomous detection, identification and multiple engagement of air to air targets; iii) Human computer interface to reduce operator workload; iv) Multi role capability; v) Survivability through superior airframe and equipment performance; vi) Low mean time between failures. The 54 month delay has been mitigated to a small extent by compressing the entry into service period, but the net effect is a delay of four years.
Typhoon Future Capability Programme	Delays to Future Capability Programme 1 does not adversley impact on the Typhoon Force build.

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Typhoon	A declaration by Head of Capability (Theatre Airspace) that the full strength Military Capability has been achieved.	On track
Typhoon Future Capability Programme	A declaration by Head of Capability (Theatre Airspace) that Swing-role military capability has been achieved.	On track

C.5. Support / PFI Contract

C.5.1 Scope of Support / PFI Contract

Project/Increment Title	Scope
Typhoon Availability Service	Aircraft platform availability service integrating on-shore support activities with the outputs of mandated international contracts
Engine Availability Service	National engine spares inclusive availability contract with international support contracts
Spares Provisioning	International spares provisioning contract under the terms established in Memoranda of Understanding.
Component Repair	International component repair contract under the terms established in Memoranda of Understanding.
Technical Support Service	International contract for the provision of technical support services and advice under the terms established in Memoranda of Understanding.

C.5.2 Progress against approved Support / PFI Contract Go-Live Date

D Section D: Performance

D.1. Sentinel Score

Project/ Increment	Current score	Last years score	Comments
Typhoon	85 Green	-	A score was not previously reported for the main programme.
Typhoon Future Capability Programme	51 Red	80 Green	

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	Delivery of Typhoon platform, Typhoon Future Capability Programme and associated weapons.		Yes
2. Training	The timely provision of suitably qualified and experienced personnel to deliver Defence outputs, now and in the future.		Yes
3. Logistics	The provision of maintenance and support to the Typhoon fleet, including the operation of support activities such as supply chain.		Yes
4. Infrastructure	The acquisition, development, management and disposal of all fixed, permanent buildings and structures, land, utilities and facility management services in support of the Typhoon capability.	Yes (with risks)	
5. Personnel	The timely provision of sufficient, capable and motivated personnel to deliver the Typhoon capability, now and in the future.	Yes (with risks)	
6. Doctrine	Doctrine is an expression of the principles by which military forces guide the use of Typhoon.	Yes	
7. Organisation	Relates to the operational and non-operational organisational relationships of people. It typically includes military force structures, MOD civilian organisational structures and Defence contractors providing support.	Yes	

8. Information	The timely provision of sufficient, capable IT and information systems to deliver Typhoon capability. It includes the production and validation of all mission support data for Operations, Trials and Training.	Yes (with risks)	
Current forecast (with risks)		5 (3)	3
Last year's forecast (with risks)		8 (5)	0

D.2.2 Defence Line of Development variation

Date	Defence Line of Development	Category	Reason for Variation
March 2012	Equipment	Technical Factors	The approved ISD of June 2012 for Future Capability Programme 1 will not be achieved and is likely to be delayed by over 12 months. A combination of technical complexity, Partner Nation disagreement on a synthetic training solution and delays in agreement of an international support arrangement have caused the delay. The situation is summarised in an Information Note released on 2nd April 2012. The ISD for Typhoon surface-attack capability was rebaselined as part of the Strategic Defence and Security Review to 2015. Consequently, the delay to the delivery of Future Capability Programme 1 DLODs does not affect Typhoon's ability to deliver Defence Final Output.
March 2012	Logistics	Technical Factors	The delivery of the Future Capability Programme 1 Logistics DLOD is dependent on the completion of the Future Capability Programme product which is delayed by over 12 months (Information Note released on 2nd April 2012 refers). The ISD for Typhoon surface-attack capability was rebaselined as part of the Strategic Defence and Security Review to 2015. Consequently, the delay to the delivery of Future Capability Programme 1 DLODs does not affect Typhoon's ability to deliver Defence Final Output.

March 2012	Training	Technical Factors	The delivery of the Future Capability Programme 1 Training DLOD is dependent on the completion of the Future Capability Programme product which is delayed by over 12 months (Information Note released on 2nd April 2012 refers). The ISD for Typhoon surface-attack capability was rebaselined as part of the Strategic Defence and Security Review to 2015. Consequently, the delay to the delivery of Future Capability Programme 1 DLODs does not affect Typhoon's ability to deliver Defence Final Output.
Historic	Infrastructure	Technical Factors	Overall performance is good with minor issues mainly relating to the second operating base at Leuchars. Minimum infrastructure was provided because the timescale for delivery was short (approximately two years) and some mitigations are still in place. Furthermore, funding for the building for synthetic simulators has still not been approved.
Historic	Logistics	Technical Factors	National Support arrangements are working well, but there are problems with the timely supply of spares and repair of equipment under the collaborative support contracts which are contributing to the RAF failing to achieve its flying hours.
Historic	Information	Changed Capability Requirements	Generation and validation of mission data for elements of the weapon system continues to lag aircraft development. With mission data production reliant on interim industry equipment, additional future investment will be required.
Historic	Training	Budgetary Factors and Technical Factors	A Planning Round 2009 measure restricted the Annual Flying Task resource available to support flying training for Front Line pilots, capping the deliverable capability; pilots are now resourced to ensure minimum safe sustainable flying rate. Eurofighter Aircrew Synthetic Training Aids also failed to deliver software upgrades to programme timescales; synthetic multi-role training capability has been delayed as a result.

Historic	Equipment	Redefinition	The Equipment DLOD is not now considered "At Risk" as the previous assessment was based on an in-year perspective, rather than a forecast of progress towards achieving Full Operating Capability.
Historic	Logistics	Redefinition	The Logistics DLOD is not now considered "At Risk" as the previous assessment was based on an in-year perspective, rather than a forecast of progress towards achieving Full Operating Capability.
Historic	Personnel	Budgetary Factors	Generation of sufficient technical manpower to fulfil the combined requirements of the Typhoon Availability Service and those necessary to man the front line could not be met, largely due to a global shortfall of aircraft engineering technicians.
Historic	Equipment	Budgetary Factors	There are currently insufficient resources available at the right time to integrate weapons systems, such as BVRAAM, onto the Typhoon platform.
Historic	Training	Changed Capability Requirements	The requirement to provide additional training as a result of exports has adversely affected the UK's Typhoon training capacity.
Historic	Logistics	Changed Capability Requirements	The requirement to provide additional spares provisioning as a result of exports has adversely affected the UK's ability to deliver full logistics support.
Historic	Logistics	Changed Capability Requirements	The equipment required to generate, verify and validate mission dependent data for elements of the weapons system lags aircraft development by up to 2 years and is currently not fit for purpose. Therefore, mission dependent data production is reliant on interim industry equipment which does not permit validation or verification testing of this data to MOD quality assurance standards until January 2010 at the earliest. Mitigations are in place to manage this risk against Typhoon's tasks over the next 3 years, but this area will require further investment as Typhoon's tasks grow in accordance with extant Planning Assumptions.

D.3. Performance against Key Performance Measures

D.3.1 Typhoon

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Equipment	Take off Distance	Yes	
2	Equipment	Landing Distance		Yes
3	Equipment, Training, Logistics, Personnel	Attributable Failures per 1000 Flying Hours	Yes	
4	Equipment, Logistics	Life (Flying Hours)	Yes	
5	Equipment	Sustained Minimum Turn Radii at Sea Level, Max Reheat	Yes	
6	Equipment	Maximum speed at sea level	Yes	
7	Equipment	Maximum speed at 36,000 ft	Yes (with risks)	
8	Equipment	Acceleration Time at Sea level from 200 knots to Mach 0.9	Yes	
9	Equipment	Instantaneous Turn Rate Sea Level, Max Reheat	Yes	
10	Equipment	Sustained Turn Rate at Mach 0.9 at 5000ft, Max Dry	Yes	
Current forecast (with risks)			9 (1)	1
Last year's forecast (with risks)			9 (1)	1

D.3.1.2 Key Performance Measures Variation

Date	Key Performance Measure	Category	Reason for Variation
Historic	KUR 07	Technical Factors	Industry flight trials to extend the aircraft performance envelope have identified acoustic vibration within the engine intake which is causing the intake to resonate at very high speeds. This has potential long term fatigue implications. Trials are ongoing by Eurofighter GmbH as part of the main development contract.

Historic	KUR 02	Technical Factors	Refined modelling carried out to support the 1994 reorientation submission indicated that in the most adverse conditions the specified landing distance would not be achieved - this was accepted by the Equipment Approvals Committee.

D.3.1.3 Operational Impact of variation

D.3.2 Typhoon Future Capability Programme

D.3.2.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	All	To engage a defined set of targets.	Yes	
2	All	To complete Air Policing duties.	Yes	
3	All	To maintain Typhoon rates of effort.	Yes	
4	All	To satisfy Communications and Information Systems interoperability requirements.	Yes	
5	All	To complete a mission in zero visibility.	Yes	
6	All	To complete the mission from zero to bright sunlight.	Yes	
7	All	To maintain the Typhoon supportability.	Yes	
Current forecast (with risks)			7 (0)	0
Last year's forecast (with risks)			7 (0)	0

D.3.2.2 Key Performance Measures variation

D.4 Support Contract

D.4.1 Typhoon

D.4.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1	Logistics	Forward Available Fleet: Measured as a percentage of the average number of available Forward Available Fleet aircraft against the planned number of Forward Available Fleet aircraft for the accounting period.	Yes	
2	Logistics	Operational Aircraft: Measured as the number of operational aircraft within the appropriate readiness timescale	Yes	
3	Training	Pilots: Measured as the percentage of productive pilots available for tasking against the planned number of pilots for the accounting period.	Yes	
Current forecast (with risks)			3 (0)	0
Last year's forecast (with risks)			3 (0)	0

D.4.1.2 Key Performance Measures variation

Project Title		
Warrior Capability Sustainment Programme		
Team Responsible		
Warrior Project Team		
Senior Responsible Owner	**Date Appointed**	**Planned end date**
Brigadier John Patterson (Ground Manoeuvre)	15th August 2011	
Project/Increment Name	**Current Status of Projects / Increments**	
Warrior Capability Sustainment Programme	Post-Main Investment Decision	
Common Cannon	Post-Main Investment Decision	

A. Section A: The Project

A.1 The Requirement

The Warrior Armoured Fighting Vehicle was brought into service in 1988 with an Out of Service Date of 2025.

The requirement for the Warrior Capability Sustainment Programme is to sustain the capability of the Armoured Infantry within the balanced force against current and emerging threats, across the spectrum of conflict until the Warrior Out of Service Date. The Warrior Armoured Fighting Vehicle was brought into service in 1988 with an Out of Service Date of 2025.

The Warrior Capability Sustainment Programme consists of four main elements:

1. Warrior Fightability Lethality Improvement Programme
(A new turret incorporating a fully stabilised automatic 40mm cannon)
The 40 mm Cased Telescopic Cannon and Ammunition System has been mandated as the weapon system for Warrior and procured by a joint Anglo-French project. The project is currently part way through qualification of the ammunition and cannon, concurrently the weapon system is being integrated into Warrior by Lockheed Martin UK, who will qualify the new turret.

2. Enhanced Electronic Architecture
(Power generation and distribution enhancement and the introduction of a modern electronic architecture)

3. Modular Protection System
(Applique Armour fixing points, enabling a 'tailored' armour solution to counter specific threats)

4. Armoured Battlefield Support Vehicle
(A new variant, replacing obsolescent platforms, that has equal protection and mobility to the core fighting platforms). Armoured Battlefield Support Vehicle is currently in the Concept Phase and is subject to future approval.

The current affordable fleet is 565 vehicles of which 445 are currently planned to be upgraded through the Warrior Capability Sustainment Programme.

A.2 The Assessment Phase

The Assessment Phase was conducted from the approval of Initial Gate (27th July 2009) to the contract effective date of 31st October 2011. A competition was run, with two bidders (BAE Systems and Lockheed Martin) invited to compete.

After Initial Gate, the programme was given a compressed timeline of six months to gain Main Gate Approval, and a Business Case was submitted to the Investment Approval Board in February 2010. Affordability issues due to an over extended Defence Budget meant Main Gate Approval was not given, with the bidders requested to Revise and Confirm their bids against a range of options. In March 2010 the Investment Approvals Board approved an uplift of up £12.4m to fund the extended Assement Phase.

The programme team resubmitted a Main Gate Business Case to the Defence Equipment and Support Investment Board on 11th July 2011, which was approved and submitted for the Investment and Approval Committee meeting on 19th July 2011. Approval was given by Her Majesty's Treasury on 4th October 2011 and then the Investment and Approvals Committee on 10th October 2011.

The Prime Minister visited the Lockheed Martin facility in Ampthill, Bedfordshire on 25th October 2011 and made a public announcement regarding the placement of the contract with Lockheed Martin.

The Contract for the Demonstration Phase was signed on 31st October 2011.

Within the Warrior approval, the 40mm Cannon was the mandated weapon system (March 2008) which would enable commonality with the Specialist Vehicles Programme, thus benefitting from common ammunition and training. A Review Note for the 40mm Cannon went to the Investment Approvals Board in March 2010 and was approved in April 2010.

A.3 Project History Since Main Gate

26th March 2008 - 40mm Cased Telescopic Cannon and Ammunition mandated.
27th July 2009 - Warrior Capability Sustainment Programme Initial Gate Business Case Approved
25th February 2010 - Investment Approval Board Meeting for Warrior Main Gate Business Case (Not Approved due to affordability issues)
22 March 2010 - Ministerial Letter to both bidders to confirm the Revise and Confirm of bids exercise.
4th April 2010 - Review Note for Cannon to Investment Approvals Board Meeting for financial approval
25th August 2010 - Revise and Confirm bids received from bidders
4th October 2011 - Formal Approval from Her Majesty's Treasury
10th October 2011 - Formal Approval from Investment Approvals Committee
25th October 2011 - Ministerial Announcement by Prime Minister
31st October 2011 - Contract Effective Date with Lockheed Martin UK

A.4 In-year Progress

The Warrior Capability Sustainment Programme is currently in month five of a five year Demonstration phase contract, with an option to proceed to Manufacture. Since Contract Award, the Prime Contractor has mainly focused on buiding their delivery team.

The Programme Measurement Baseline (which includes the Integrated Master Schedule, the Work Breakdown Structure and the Organisational Breakdown Structure) was completed and signed off on 10th February 2012.

A System Requirements Review was conducted on 28th February 2012.

The Integrated Baseline Review will be conducted on 30th April 2012.

Joint Battlefield Training and Synthetic Environment Team have placed an Expression of Interest in a Commercial journal for the Warrior Training Solution.

A.5 Capability Risks

Warrior Capability Sustainment Programme will upgrade the current Warrior fleet, some of which have been upgraded through a series of modifications and Urgent Operational Requirements. The current fleet is now restricted in it's capability on operations due to lack of growth in its electronic architecture and inability to fire on the move and the lethality of the existing 30mm weapon.The Out of Service Date for the Warrior fleet is 2025, so Warrior must be upgraded to avoid a long-term capability gap opening up.

A.6 Associated Projects

A.7 Procurement Strategy

Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Warrior Capability Sustainment Programme	Lockheed Martin UK	Demonstration to Manufacture	Prime Contractor	Competitive - International
Common Cannon	CTA International	Design and Development	Prime Contractor	Single Source

A.8 Support Strategy

Description
Repair of equipment and supply of spares for the current Warrior fleet is provided through contracts with industry placed by Civil Servants employed by Defence Equipment and Support and Defence Support Group. A number of significant support contracts exist, with major examples being with Thales Optronics Ltd for the Battle Group Thermal Imager sights and a contract for the Diesel Engines and Transmission with Caterpillar Ltd. The support strategy for the upgraded Warrior will be similar to the current fleet. There will be an initial purchase of Capital Spares through the Manufacture contract to support the upgraded Warrior for a period of two years.

Support Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Warrior Capability Sustainment Programme	Lockheed Martin UK	Manufacture to In Service	Prime Contractor	Competitive - International

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Warrior Capability Sustainment Programme	24	29	+5	2%	2%
Common Cannon	59	48	-11	-	-
Total (£m)	**83**	**77**	**-6**	**-**	**-**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Warrior Capability Sustainment Programme	1234	1319	1424

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Warrior Capability Sustainment Programme	1319	1319	0	0
Total (£m)	**1319**	**1319**	**0**	**0**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.3.2 Operational Impact of cost variations of Demonstration and Manufacture Phase

B.4 Progress against approved Support / PFI Cost

Project/Increment Title	Approved Cost (£m)	Forecast cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Battle Group Thermal Imaging	61	67	+6	0
Diesel Engines and Transmissions	25	14	-11	-7
Total (£m)	**86**	**81**	**-5**	**-7**

B.4.1 Cost variation against approved Support / PFI Cost

B.4.1.1 Battle Group Thermal Imaging

Date	Variation (£m)	Category	Reason for Variation
Historic	+6	Changed Capability Requirements	35 Additional Warrior Battle Group Thermal Imager (BGTI) supported as per formal planning round option.
Net Variation (£m)	**+6**		

B.4.1.2 Diesel Engines and Transmissions

Date	Variation (£m)	Category	Reason for Variation
March 2012	-7	Procurement Processes	Decision to reduce existing stock
Historic	-4	Changed Capability Requirements	Reduction in Warrior Joint Business Agreement predicted kilometres.
Net Variation (£m)	**-11**		

B.4.2 Operational Impact on Support / PFI Cost

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	44	13	57
Demonstration and Manufacture Phase	0	30	30
Support Phase / PFI Cost	32	9	41
Total Expenditure	**76**	**52**	**128**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Actual Date of Main Investment Decision Approval	Length of Assessment Phase
Warrior Capability Sustainment Programme	July 2009	October 2011	27
Common Cannon	July 2009	April 2010	9

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Approved	Budgeted For	Latest Approved
Warrior Capability Sustainment Programme	March 2018	November 2018	October 2020

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Warrior Capability Sustainment Programme	An Armoured Infantry company (Infantry Section and Command variants) trained to Collective Training Level 2

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Warrior Capability Sustainment Programme	November 2018	November 2018	0	0

C.3.3 Timescale variation

C.4. Full Operating Capability

C.4.1 Definition

Project/Increment Title	Full Operating Capability	Progress to date
Warrior Capability Sustainment Programme	All Warriors upgraded.	

C.5. Support / PFI Contract

C.5.1 Scope of Support / PFI Contract

Project/Increment Title	Scope
Battle Group Thermal Imaging	Battle Group Thermal Imager is a thermal imaging sighting system incorporating a laser range-finder and tactical navigation system and is used on Warrior. The Battle Group Thermal Imager contract is with Thales Optronics Ltd, selected through competition and covers the procurement of installed systems and provision of a support service for a period of 15 years from 4 Mar 2004 until Mar 2019. Battle Group Thermal Imager is a Contractor Logistic Support project with a 1st to 4th line maintenance and repair policy and includes warehousing, supply, repair, reporting and Post Design Services activities. Spares include both repairables and consumables delivered direct from the suppliers warehouse to the user in Germany / Canada and into Purple Gate for Users in the UK / Operations. Lockheed Martin UK will upgrade the Battle Group Thermal Imager sights on Warrior as part of their Warrior Capability Sustainment Programme solution
Diesel Engines and Transmissions	CV8 Diesel main engines and X300 transmissions are repaired through a single source contract placed with the original equipment manufacturer, Caterpillar, Shrewsbury Ltd. This contract is an enabling arrangement that enables each years repair load to be varied to meet the User's planned activity demand. Engines and transmissions are repaired using Original Equipment Manufacturer parts through a menu pricing process.

C.5.2 Progress against approved Support / PFI Contract Go-Live Date

Project/Increment Title	Approved Date	Actual Date	Variation (+/- months)	In-year Variation (+/- months)
Battle Group Thermal Imaging	March 2004	March 2004	0	0
Diesel Engines and Transmissions	April 2009	April 2009	0	0

C.5.2.1 Go-Live Date Variation

C.5.3 Progress against approved Support / PFI Contract End Date

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-year Variation (+/- months)
Battle Group Thermal Imaging	March 2019	March 2019	0	0
Diesel Engines and Transmissions	March 2014	March 2014	0	0

C.5.3.1 End of Contract Date Variation

C.5.5 Operational Impact of Support / PFI Support Contract variation

D Section D: Performance

D.1. Sentinel Score

Current score	Last years score	Comments
98 Green	-	

D.2.1 Performance against Defence Lines of Development

Line of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
1. Equipment	Equipment solution validated against current capability audit outputs.	Yes	
2. Training	Training solution validated against current capability audit outputs.	Yes	
3. Logistics	Logistics solution validated against current capability audit outputs.	Yes	
4. Infrastructure	Infrastructure solution validated against current (<2 years) capability audit outputs.	Yes	
5. Personnel	Personnel solution validated against current (<2 years) capability audit outputs.	Yes	
6. Doctrine	Impact of current (<2 years) capability audit upon Doctrine & Concepts assessed.	Yes	
7. Organisation	Organisation solution validated against current (<2 years) capability audit outputs.	Yes	
8. Information	Information solution validated against current (<2 years) capability audit outputs.	Yes	
Current forecast (with risks)		8 (0)	0
Last year's forecast (with risks)		N/A	N/A

D.2.2 Defence Line of Development variation

D.3. Performance against Key Performance Measures

D.3.1 Warrior Capability Sustainment Programme

D.3.1.1 Performance against Key Performance Measures

Key Performance Measure	Related Defence Lines of Development	Description	Met / Forecast to be met (with risks)	Not met / Forecast not to be met
KUR 1	Equipment	The User shall be able to suppress an enemy section in the open, when own vehicle is moving as well as static, by day and by night.	Yes	
KUR 2	Equipment	The User shall be able to destroy (WCSP decode 63) IFVs when own vehicle is moving as well as static, by day and by night.	Yes	
KUR 3	Equipment	The User shall be able to carry personnel and equipment appropriate to the role.	Yes	
KUR 4	Equipment	The User requires that both Commander and Gunner shall be able to maintain all round local Situational Awareness (SA) in all environments, including urban, when closed down and head out, by day or night when own vehicle is moving as well as static.	Yes	
KUR 5	Equipment	The User shall be provided with appropriate levels of operational and tactical mobility commensurate to role.	Yes	

KUR 6	Equipment	The User shall be provided with the ability to quickly add and remove protection appropriate to the operational threat.	Yes	
KUR 7	Equipment	The User shall be able to store, operate and transport the capability in all relevant climates and terrains.	Yes	
KUR 8	Equipment	The User shall be provided with a capability that is available for the required sustained level for training and operations.	Yes	
KUR 9	Equipment	The User shall be provided with a capability that can interface and is interoperable with current and known future systems.	Yes	
Current forecast (with risks)			9 (0)	0
Last year's forecast (with risks)			N/A	N/A

D.3.1.2 Key Performance Measures Variation

D.3.1.3 Operational Impact of variation

D.4 Support Contract

ASSESSMENT PHASE PROJECTS

Project Title	
Cipher	
Team Responsible	
Networks	
Senior Responsible Owner	**Date Appointed**
Air Commodore C Jones (Command, Control, Communications and Computers, Intelligence, Surveillance and Reconnaissance)	27th August 2012
Project/Increment Name	**Current Status of Projects /**
Cipher	Pre-Main Investment Decision

A. Section A: The Project

A.1 The Requirement

Cipher will provide protection for all of MOD's sensitive information and communications both at home and overseas. The project encapsulates work to renew the MOD cryptographic inventory and key management systems. Cipher will replace a number of current systems, in particular the General Key Management System.

There are three business drivers for Cipher. The first is to overcome the obsolescence of existing equipment and key management systems. The second is to enable network agility and interoperability with our Allies. The final driver is to improve security and efficiency in the delivery of cryptographic services.

Cipher will be delivered in three increments. Increment 1 provides an Enduring Operational Capability, Increment 2 replaces all legacy services and Increment 3 providing the additional services required to satisfy new requirements.

The MOD uses three levels of technology maturity metrics. These are:
1. Technology Readiness Levels to describe the levels of maturity that are embodied in systems.
2. System Readiness Levels for the integrated systems.
3. Information Readiness Levels which provide a meaningful measurement of the maturity of the information design.

Cipher is a large, complex information-centric programme, involving Government Communication Headquarters (GCHQ) and therefore Information Readiness Levels have been selected to report against for this project.

A.2 Assessment Phase History

Cipher is a combination of two earlier MOD projects, the Future Crypto Programme (Delivering the hardware) and Interoperable Electronic Key Distribution (the complementary system to deliver keying material, and other supporting configuration and management data). The Initial Gate approval, issued in August 2007, for a combined assessment phase for the two programmes authorised an assessment phase funding of *** at 50% confidence with agreement that the funding could be increased to *** at 75% confidence subject to written confirmation from Head of Capability that the additional funding was available. No delivery phase timescale or funding estimate was provided in the Initial Gate submission beyond the available ten year funding profile. However, an Information Note issued in December 2008 stated 2012 as the date for the Initial Operating Capability.

Following Initial Gate approval, two consortia were down-selected and awarded "Assessment Phase" contracts in November 2008 to evaluate potential options, develop solutions, undertake demonstration programmes and deliver costed delivery phase proposals. The competition was undertaken in accordance with the Initial Gate strategy and the Procurement Strategy and both consortia agreed to at least match MOD funding for their assessment phase programmes of work.

Recognising the importance of Cipher and its potential use across Government, the Government Communication Headquarters has engaged proactively, providing guidance on standards to ensure that the resulting solutions and services can be readily adopted by Other Government Departments and Partners Across Government and be interoperable with our Allies.

In June 2010, the Defence Equipment and Support Performance Delivery Improvement Team issued a report on Cipher. Head of Capability responded by producing a Project Mandate defining the project vision, scope, outcomes, delivery timelines and Governance arrangements. An Information Note was submitted to the Investment Appraisal Board in January 2011 to notify of the changes necessary, with a review of progress being held in February 2011 at a 2-Star Foundation Milestone Review. A Review Note was submitted to the Investment Approval Board in April 2011 seeking approval for the revised project timescales, the adoption of an incremental acquisition strategy and a revision to the approved budgetary level for the assessment phase of *** representing an uplift of *** to the Initial Gate approval at 50% confidence. The programme includes four key mitigation actions of a) maturing the incremental approach, b) enhancing the delivery team with additional MOD and Government Communications Headquarters staff, c) developing a detailed and resourced plan and d) improving stakeholder and benefits management. Of these, a, c and d have progressed well. This left mitigation action falling short with regard to additional MOD staff.

A.3 In-Year Progress

The Review Note outcome noted in A.2 resulted in contract amendments for both companies, increased spend for the extant project team (including Specialist Technical Support and Government Communication Headquarters staff) by virtue of the longer time frame and a proportion for Risk Reduction activities.

The outcome of the February 2011 Foundation Milestone Review was to proceed, but with the direction that all outstanding actions from the Performance Delivery Improvement Treatment Phase would be addressed. The additional funding required for the delivery of the extended Assessment Phase was identified and revised staffing levels agreed. Funding was used to extend the contracts of Logica and Thales.

Cipher has continued to proceed with the successful completion of the tender evaluation process in February 2012. The public announcement of the preferred bidder has been delayed (pending resolution of a number of significant commercially sensitive issues). As at March 2012, the intent remained to submit the Main Gate Business Case for Increment 1 to Investment Approvals Committee in September 2012. However in late 2011, Defence Equipment and Support 3 Star lead for Cipher queried the maturity of the National Level 2 Design and Deliverability. As a result, a detailed review of the Procurement Strategy will precede the Main Gate decision. Representation from the preferred bidder has now joined the Project Team in Corsham. There is close joint working with both MOD and Government Communication Headquarters personnel and good progress is being made.

The next phase of the project is completion of the National Level 2 design (a more detailed design which is needed to complete the Service Requirement Document) which is being managed and delivered using Government Communication Headquarter 'best practice' System Engineering methodology and process. A number of Planning Round 2012 options to re-align finances have impacted the project which collectively will extend the transition period, delay the realisation of benefits and extend the life of the project (but overall affordability has improved as a result). As reflected in the recently completed Office of Government Commerce Level 3 Review (Investment Decision), the availability of sufficient Suitably Qualified Experienced Personnel in project manpower (Crown Servants) is now a serious issue (AMBER/RED), and there are well known weaknesses in external governance and senior stakeholder support that are being addressed. A coherent and appropriately resourced joint Crypto Modernisation Programme to coordinate and span MOD, Government Communication Headquarters and Other Government Departments (as applicable) activities in this area is now urgently required. The Office of Government Commerce Gateway Level 3 Review again highlighted the high levels of technical risk inherent in the current approach (i.e. to proceed to Main Gate in advance of completion of the Level 2 design).

A.4 Capability Risks

Capability risks if Cipher is delayed:

Existing Crypto capability lacks the flexibility to deliver Network Enabled Capability.
Efficiency savings related to automation of crypto capability are delayed leading to increased demand on service manpower.

A.5 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
Key Production Authority Futures Project	December 2015	Pre-Main Gate

A.6 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only		
Project / Increment Title	**Procurement Route**	**Approval Status**
Cipher	Competitive - UK	Pre-Main Gate

A.7 Support Strategy

Description
The Cipher Intergrated Logistic Support strategy aims to provide a robust and 'fit for purpose' solution and assured adherence to the Support Solution. It will articulate the support framework that will be required for Cipher, bringing together the major elements of support, including the potential Contractor Logistic Support arrangements, the Support Solution Envelope and the role of the crypto System Operating Authority plus Networks Crypto Services for Defence. The Plan will be developed through progressive discussion with the major Intergrated Logistic Support stakeholders, including the Preferred Bidder.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
Increment 1	Awaiting announcement	Demonstration to Manufacture	Fixed Price	Competitive - UK

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Cipher	19	44	+25	***	***
Total (£m)	**19**	**44**	**+25**	***	***

B.2 Planned Cost Boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Forecast (£m)	Budgeted For Forecast (£m)	Highest Forecast (£m)
Cipher	***	-	-

B.3 Cost of the Demonstration and Manufacture Phase - Not Applicable

B.4 Progress against approved Support / PFI Cost - Not Applicable

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	14	11	25
Demonstration and Manufacture Phase	0	0	-
Support Phase / PFI Cost	0	0	-
Total Expenditure	**14**	**11**	**25**

C Section C: Timescale

C.1 Duration of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Forecast Date of Main Investment Decision Approval	Length of Assessment Phase
Cipher	August 2007	September 2012	61

C.2 Planned Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Forecast	Budgeted For Forecast	Latest Forecast
Cipher	***	-	-

C.3 In-Service Date/Initial Operating Capability - Not Applicable

C.4. Full Operating Capability - Not Applicable

C.5 Support / PFI Contract - Not Applicab

D Section D: Performance

D.1. Information Readiness Level

Current score	Last years score	Scale	Comments
2	-	1-9	Cipher uses Information Readiness Level. This is explained under Section A.1. The Requirement.

D.2.1 Performance against Defence Lines of Development - Not Applicable

D.3. Performance against Key Performance Measures - Not Applicable

D.4 Support Contract - Not Applicable

Project Title	
Core Production Capability	
Team Responsible	
Nuclear Propulsion Project Team	
Senior Responsible Owner	**Date Appointed**
Cdre Beverstock	
Project/Increment Name	**Current Status of Projects /**
Core Production Capability	Pre-Main Investment Decision

A. Section A: The Project

A.1 The Requirement

To maintain a naval reactor Core Production Capability (CPC) to support the UK's nuclear submarine flotilla. All Royal Navy submarine propulsion nuclear reactor cores have been manufactured at the Rolls-Royce (RR) Raynesway site.

To conduct nuclear operations on the Raynesway Site, Rolls-Royce Marine Power Operations Limited is 'Licensed' formally by the Health and Safety Executive (Nuclear Department) (HSE(ND)) as required by the Nuclear Installations Act.

The technological and manufacturing capability to produce submarine reactor cores has traditionally been sustained through successive contracts for their production. With the introduction of long life cores and the reduction in the submarine flotilla size the numerical requirement for cores has reduced.

The Strategic Defence and Security Review (SDSR) White Paper deferred the In-Service Date (ISD) for the Successor SSBN to 2028 with a 36 month drumbeat.

A.2 Assessment Phase History

In September 2007, the Investment Appraisals Board approved the Core Production Capability Initial Gate Business Case, to down select to the phased regeneration of the Rolls-Royce Raynesway Site, as the most cost effective way of delivering the capability.

The Assessment Phase contract was let on 13th February 2008. The contract covers Assessment Phase work up to February 2010.

Interim Contract placed on 4th February 2010 to cover work required to complete Assessment Phase activities.

A.3 In-Year Progress

Support continued with Assessment Phase related work throughout the year, with work completed including:
a) 2 years operation and maintenance of the current facilities. This is essential to ensure that the Nuclear Site License is maintained.
b) Maturing the design of the manfacturing facility and equipment. This work is essential to allow construction to start as planned to support the programme.
c) Enabling works complete - Fencing and new security gates etc. This is part of the work on the Nuclear Licensed Site boundary to maintain security requirements and to provide site access for future regeneration works on the site.
d) Significant value engineering undertaken and developed. The work has continued the value for money exercises, with regard to the design of the Manufacturing Facility and Product Assembly Building .

Main Phase Contract negotiations commenced in June 2011.

A.4 Capability Risks

Cancellation of the CPC project means that there would be no nuclear reactor cores for the Successor Programme or any future nuclear submarine programme.

Delivery of the CPC project is essential in order to manufacture reactor cores for the submarine programme, support development work on the Successor core design and manufacturing processes and maintain the site Nuclear Licence and essential manufacturing and engineering skills, that would require significant time and cost to recover and therefore represent an intolerable risk to the Successor Deterrent core production schedule and subsequent in-service date.

A.5 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
Successor (Incl Next Generation Nuclear Propulsion Plant)	ISD of 2028	Pre-Main Gate
Astute Boat 4	ISD of 2018 - Handover to Royal Navy	
Astute Boat 5	ISD of 2020 - Handover to Royal Navy	
Astute Boat 6	ISD of 2022 - Handover to Royal Navy	
Astute Boat 7	ISD of 2024 - Handover to Royal Navy	

A.6 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Procurement Route**			**Approval Status**
Core Production Capability	Single Source			Pre-Main Gate
Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
Core Production Capability				

A.7 Support Strategy

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Core Production Capability	107	107	0	***	***
Total (£m)	**107**	**107**	**0**	***	***

B.2 Planned Cost Boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Forecast (£m)	Budgeted For Forecast (£m)	Highest Forecast (£m)
Core Production Capability	***	***	***

B.3 Cost of the Demonstration and Manufacture Phase - Not Applicable

B.4 Progress against approved Support / PFI Cost - Not Applicable

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	75	32	107
Demonstration and Manufacture Phase	0	0	-
Support Phase / PFI Cost	0	0	-
Total Expenditure	**75**	**32**	**107**

C Section C: Timescale

C.1 Duration of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Date of Main Investment Decision Approval	Length of Assessment Phase
Core Production Capability	September 2007	April 2012	55

C.2 Planned Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Forecast	Budgeted For Forecast	Latest Forecast
Core Production Capability		-	

C.3 In-Service Date/Initial Operating Capability - Not Applicable

C.4. Full Operating Capability - Not Applicable

C.5 Support / PFI Contract - Not Applicab

D Section D: Performance

D.1. Technology Readiness Level

Current score	Last years score	Scale	Comments
5.25	N/A	1-10	TRL data focussed on 20 key equipments. Phase 1 equipment (13 items) is on average of 5.23. Phase 2 equipment (7 items) is on average of 5.28. Overall average is 5.25.

D.2.1 Performance against Defence Lines of Development - Not Applicable

D.3. Performance against Key Performance Measures - Not Applicable

D.4 Support Contract - Not Applicable

Project Title	
Marshall	
Team Responsible	
Marshall	
Senior Responsible Owner	**Date Appointed**
Air Commodore C Jones (Command, Control, Communications and Computers, Intelligence, Surveillance and Reconnaissance	16th April 2012
Project/Increment Name	**Current Status of Projects /**
Assessment Phase 1	Pre-Main Investment Decision
Assessment Phase 2	Pre-Main Investment Decision

A. Section A: The Project

A.1 The Requirement

The Marshall project (previously known as Joint Military Air Traffic Services (JMATS)) seeks to sustain the provision of Air Traffic Management at MOD Airfields and Air Weapons Ranges through the provision of new capability to meet new regulatory airspace management requirements set by the Civil Aviation Authority, addressing equipment obsolescence in the air traffic inventory and through the more efficient delivery of support services. Specifically, there is a requirement to convert Secondary Surveillance Radar to a new mode (Mode Select) of operation by 31 December 2016. Allied to this requirement, MOD requires an annual dispensation to continue to operate conventional Mode 3A/C Secondary Radars beyond 31 December 2011. The project will provide air traffic services to military and civilian aircraft arriving at, departing from and operating within the immediate vicinity or confines of, MOD aerodromes (United Kingdom, overseas permanent and deployed) and at air weapons ranges.

A.2 Assessment Phase History

The assessment phase of the Marshall project is being conducted in two parts. The first part (Assessment Phase 1) was approved on the 17th January 2008. The purpose was to both express the military air traffic services in output terms through the development of an output based specification and to determine the most appropriate and cost effective delivery solution for this service. In addition, the project has captured data on the condition of the existing air traffic control infrastructure (control towers, radar towers, radio masts etc) as well as the number of people employed in supporting the service. Part 1 of the Assessment Phase completed in October 2009 with the submission of a Review Note seeking approval for Part 2. In December 2010 Joint Military Air Traffic Services changed its name to Project Marshall.

Part 2 of the Assessment Phase enables formal industry engagement. The intention is to use the competitive dialogue process to determine the preferred bidder and delivery solution for the Marshall services within the delivery framework developed during Assessment Phase Part 1. Part 2 of the Assessment Phase was approved in February 2010 but this was caveated with the need to gain further Treasury approval of key project documents before a formal Official Journal of the European Union Notice could be published. This was finally achieved on 25th March 2011; much of the delay being caused by having to obtain Efficiency Reform Group approval to re-engage financial and legal consultants.

A.3 In-Year Progress

An Official Journal of the European Union Notice, initiating the formal procurement process was issued in March 2011. This process culminated in three consortia, Aquila (Thales and National Air Traffic Services), BAE Systems, and Fusion (Lockheed Martin, Selex and Cobham) being selected to participate in the next phase of the project and this was planned to commence in October 2011. However, a review of the Invitation to Participate in Dialogue documentation in August 2011 highlighted that the documentation set was insufficiently mature to release to industry and some further work was required to complete this. A revised target date of March 2012 resulted.
HMT issued a letter on 22nd December 2011 which challenged the MOD over the viability of the project and asked to review the project on a stop, revise, proceed basis.
In January 2012, and implementing the recommendations of an Office of Government Commerce Gateway Review, a dedicated Team Leader was appointed. During his initial review of the project, further issues were identified where some additional work was required to fully mature the Authority position (for example - use of military manpower). This has resulted in a further delay to issue of the Invitation to Participate in Dialogue and a revised target date of October 2012 is now forecast for documentation issue subject to necessary approvals.

As a result, there has been a corresponding slip to future milestones with contract award now forecast for late 2015. An additional Review Note is planned for June this year to seek an additional £1 million to enable completion of the Assessment Phase and to note the additional time required.
These delays present a significant risk to the timely implementation of the Mode Select Secondary Radar requirement and alternative strategies to mitigate this are now being explored. Any changes will be reflected in the next Major Project Report.

A.4 Capability Risks

Much of the equipment that currently provides air traffic services to MOD airfields and ranges is in excess of 20 years old and is increasingly suffering from obsolescence. Increasing regulation of United Kingdom airspace requires the implementation of new radar surveillance capability. Failure to invest in this capability will ultimately reduce the level of air traffic service provision to these locations. This will reduce the ability of all three Services to train and fly and hence the ability to project air power wherever and whenever it is required.

A.5 Associated Projects

A.6 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only		
Project / Increment Title	**Procurement Route**	**Approval Status**
Assessment Phase 1	Public Private Partnership such as Strategic Partnering. Delivery partner and solution to be sought through competitive dialogue.	Pre-Main Gate
Assessment Phase 2	Competitive - UK	Pre-Main Gate

A.7 Support Strategy

Description
The current planning assumption is for a full Air Traffic Management Service Provision where the provider determines and is responsible for the composition and delivery of the support element required to maintain the service, with retained MOD owned Air Traffic Control assets to support deployed operations

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Assessment Phase 1	3	3	0	***	***
Assessment Phase 2	6	6	0	***	***
Total (£m)	**9**	**9**	**0**	***	***

B.2 Planned Cost Boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Forecast (£m)	Budgeted For Forecast (£m)	Highest Forecast (£m)
Marshall	***	-	***

B.3 Cost of the Demonstration and Manufacture Phase - Not Applicable

B.4 Progress against approved Support / PFI Cost - Not Applicable

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	4	1	5
Demonstration and Manufacture Phase	0	0	-
Support Phase / PFI Cost	0	0	-
Total Expenditure	**4**	**1**	**5**

C Section C: Timescale

C.1 Duration of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Forecast Date of Main Investment Decision Approval	Length of Assessment Phase (months)
Assessment Phase 1	January 2008	October 2009	21
Assessment Phase 2	January 2010	February 2015	61

C.2 Planned Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Forecast	Budgeted For Forecast	Latest Forecast
Assessment Phase 1	***	***	***
Assessment Phase 2		-	

C.3 In-Service Date/Initial Operating Capability - Not Applicable

C.4. Full Operating Capability - Not Applicable

C.5 Support / PFI Contract - Not Applicab

D Section D: Performance

D.1. Technology Readiness Level

Current score	Last years score	Scale	Comments
7		1-10	At 80% confidence.

D.2.1 Performance against Defence Lines of Development - Not Applicable

D.3. Performance against Key Performance Measures - Not Applicable

D.4 Support Contract - Not Applicable

Project Title	
Military Afloat Reach and Sustainability	
Team Responsible	
Afloat Support	
Senior Responsible Owner	**Date Appointed**
Brigadier John Brittain (Expeditionary Logistic and Support Capabil	21st March 2011
Project/Increment Name	**Current Status of Projects /**
Military Afloat Reach and Sustainability	
	Pre-Main Investment Decision
Military Afloat Reach and Sustainability Tanker	
	Pre-Main Investment Decision
Military Afloat Reach and Sustainability Fleet Solid Support Ships	
	Pre-Main Investment Decision

A. Section A: The Project

A.1 The Requirement

The Military Afloat Reach and Sustainability programme will provide afloat logistic support to UK and allied maritime task groups at sea and their amphibious components operating ashore. Although not strictly a one-for-one replacement programme, new vessels will incrementally replace much of the existing Royal Fleet Auxiliary flotilla.

The Military Afloat Reach and Sustainability capability is designed to support three distinct types of maritime task group: Carrier Strike, Littoral Manoeuvre and Maritime Security. The demands of each differ significantly, but are all composed of three common elements:

Bulk Consumables - fuel and potable water which are transferred by hose.

Non-bulk consumables - Food, ammunition and general stores. Solid cargo which is transferred in unit loads, either ship to ship or ship to shore.

Forward Aviation Support - The provision of helicopter basing and operating facilities to accommodate some of the task group's aircraft or to provide operational flexibility during a campaign.

The Military Afloat Reach and Sustainability capability will be in service into the 2050s and will be designed to accommodate the requirements of current and known future force structures, including Type 45, the Queen Elizabeth Class aircraft carriers, Joint Combat Aircraft and Type 26 Global Combat Ship. Tankers will provide bulk consumables and forward aviation support to the maritime task group. Solid Support Ships, previously referred to as Fleet Solid Support and Amphibious Combat Stores ship, will provide non bulk consumables and forward aviation support to the maritime task group.

The capability to be provided is essential to the evolving logistic support needs of the Royal Navy. The proposed procurement profile of Military Afloat Reach and Sustainability ships has been matched to this need, the initial focus being on the double-hulled Tankers which are required in order to comply with International Maritime environmental standards.

A.2 Assessment Phase History

The Military Afloat Reach and Sustainability programme received formal approval to enter its Assessment
Phase in July 2005 based on an Alliance strategy. Following a review of the Procurement Strategy in 2007, the Alliance Strategy was terminated. A new strategy, based on a 'Competitive and Adaptive' approach, was approved and reflected the need to procure the Tanker element of the programme separately in order to comply with International Maritime legislation. In addition approval was granted for the designation and delegation of the Heavy Replenishment at Sea project as a separate Category D project. Solid Support ships will now form a separate strategy to be considered with wider UK industrial interests. An open international competition was launched for the design and build of up to six Fleet Tankers but was cancelled following the Department's examination of its equipment programme in 2008. A review of the requirements and procurement strategy was undertaken which concluded that a more open procurement strategy to consider a range of possible solutions and which take account of current market conditions is more likely to secure best value for money for the MOD. On this basis a new international competition for up to six Military Afloat Reach and Sustainability Tankers was launched in October 2009 which was conducted using the Competitive Dialogue process. Subsequently the requirement was reduced from six ships to four.
Following assessment of initial Pre Qualification Questionnaires six companies were invited to proceed to the next stage of the competition. The competition was conducted over three stages Stage 1 - Invitation to Submit Outline Solutions took place over March to September 2010. Stage 2 - Invitation to Submit Detailed Solutions commenced in October 2010 and continued through to Invitation to Submit Final Bids in October 2011 which was issued to three companies; Daewoo Shipbuilding and Marine Engineering (Republic of Korea), Fincantieri (Italy), Hyundai Heavy Industries (Republic of Korea). Three companies withdrew earlier in the competition; Flensburger Schiffbau-Gesellschaft (Germany); Knutsen OAS Ltd in June 2011 and A&P Group Ltd in August 2011.

The current approved budget for the Military Afloat Reach and Sustainability Assessment Phase is £44m and the current forecast for the Assessment Phase, including early design and requirement work for Solid Support Ships is *** (Tanker £14million, Solid Support Ships, ***). Due to the planned phased nature of the project, further assessment and design work on Fleet Solid Support Ships will take place after the Military Afloat Reach and Sustainability Tanker main investment decision, and the current total forecast for this later work is *** bringing the total expected cost of Assessment work and later design for future classes to ***.

A.3 In-Year Progress

The Main Gate Business Case for the Military Afloat Reach and Sustainability Tankers was considered and approved by the Investment Approvals Committee in October 2011. The Performance Cost and Time envelope put forward for approval was based on indicative information available and the approval of which enabled the Department to proceed to the final bid stage of the competition, which was issued in October 2011. Further Departmental and HM Treasury approval to proceed to contract award was received in January 2012 and Daewoo Shipbuilding and Marine Engineering was named as the preferred bidder on 22 February 2012. The contract was awarded 9 March 2012. In accordance with the Department's approval process, the project Performance, Cost and Time will be calculated using the detail of the winning bid and detail of the remainder of project activity and will be reported back to the Investment Approvals Committee in Spring/Summer 2012; this will form the Main Gate approval baseline for the Military Afloat Reach and Sustainability Tanker project. Following Planning Round 2012 the Tanker element of the programme is to be considered as part of the Core Equipment Programme. The Fleet Solid Support element of the programme will be considered a Non Core Equipment Programme which will require further Departmental review before further work is undertaken.

A.4 Capability Risks

The Military Afloat Reach and Sustainability programme will deliver future Royal Fleet Auxiliary ships, replacing the current capability, to support the future Royal Navy. Without the support of these ships, the
ability of the Royal Navy to carry out global operations will be severely restricted. Double hulled naval tankers are required as soon as is practicable to comply with international maritime legislation; the Royal Fleet Auxiliary currently operates two double hulled tankers and four single hulled tankers under exemption from legislation. The number of ships with single hulled tanks has reduced from six to four in the last year as a result of Strategic Defence and Security Review. All Royal Fleet Auxiliary ships are maintained to UK regulatory and classifications standards; should this certification and classification be withdrawn for single hulled tankers, their operation would cease immediately leading to severe operational limitations on the ability of the Royal Navy to operate worldwide and in anything but the most benign environments. Foreign nations have already begun to deny port access for single hulled tankers and this situation will be exacerbated as a consequence of any environmental incident, MOD shipping related or not. Programming for operations takes account of environmental restrictions as well as limitations on ships due to their material state; for example some of the older ships are unable to operate in colder climates due to the steel in their ageing hulls becoming brittle. These ships will be replaced as the double hulled tanker element of the Military Afloat Reach and Sustainability Programme is delivered.

A.5 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status

A.6 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only		
Project / Increment Title	**Procurement Route**	**Approval Status**
Military Afloat Reach and Sustainability Tanker	International Competition, Competitive Dialogue	Pre-Main Gate

A.7 Support Strategy

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Military Afloat Reach and Sustainability	44	***[1]	***	***	***
Total (£m)	**44**	***	***	***	***

B.2 Planned Cost Boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Forecast (£m)	Budgeted For Forecast (£m)	Highest Forecast (£m)
Military Afloat Reach and Sustainability Tanker	***	-	***
Military Afloat Reach and Sustainability Fleet Solid Support Ships	-	-	-

B.3 Cost of the Demonstration and Manufacture Phase - Not Applicable

B.4 Progress against approved Support / PFI Cost - Not Applicable

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	16	1	17
Demonstration and Manufacture Phase	0	0	-
Support Phase / PFI Cost	0	0	-
Total Expenditure	**16**	**1**	**17**

[1] The forecast cost for the Assessment Phase includes the cost of the Tanker Assessment Phase of £14m an Fleet Solid Support Ships of ***. It also includes *** for post Main Gate Assessment and design work for Fleet Solid Support Ships that is not yet approved. The actual Military Afloat Reach and Sustainability Assessment Phase expenditure is within approved budget

C Section C: Timescale

C.1 Duration of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Forecast Date of Main Investment Decision Approval	Length of Assessment Phase
Military Afloat Reach and Sustainability	July 2005	January 2012	78

C.2 Planned Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Forecast	Budgeted For Forecast	Latest Forecast
Military Afloat Reach and Sustainability Tanker	***	-	***
Military Afloat Reach and Sustainability Fleet Solid Support Ships	-	-	-

C.3 In-Service Date/Initial Operating Capability - Not Applicable

C.4. Full Operating Capability - Not Applicable

C.5 Support / PFI Contract - Not Applicab

D Section D: Performance

D.1. Technology Readiness Level

Current score	Last years score	Scale	Comments
6	-	1-10	

D.2.1 Performance against Defence Lines of Development - Not Applicable

D.3. Performance against Key Performance Measures - Not Applicable

D.4 Support Contract - Not Applicable

Project Title	
Network Enabled Airspace Defence and Surveillance	
Team Responsible	
Joint Sensor and Engagement Networks	
Senior Responsible Owner	**Date Appointed**
Air Commodore Mark Hopkins (Air Capability)	27th April 2012
Project/Increment Name	**Current Status of Projects / Increments**
Increment 1	Pre-Main Investment Decision

A. Section A: The Project

A.1 The Requirement

The requirement for future integrated air defence includes ground based command and control, surveillance and weapons. This is a Defence capability priority, driven by the need to counter the future air threat. This will evolve from current aircraft (fixed wing and helicopters) to also include cruise missiles, unmanned air vehicles, rockets, artillery and mortars. The latter are described as difficult air targets.

Network Enabled Airspace Defence and Surveillance is a large and complex incremental acquisition programme, currently in Assessment Phase for Increment 1. The programme will address the capability gap described above by providing a capability to compile and distribute a timely and accurate air picture, conduct airspace management to allow safe operations and defeat the air threat throughout the Land environment area of operations.

The three increments are as follows:-

Increment 1

Increment 1 will replace Urgent Operational Requirement equipment with an enduring Counter Rocket Artillery & Mortar automated sense and warn capability from 2015.
This capability is being used in Afghanistan to protect UK bases from rocket artillery and mortar attack. This was provided under Treasury Urgent Operation Requirement Funding. Automatic Sense and Warn capabilities will be brought into the core equipment programme.

Increment 2

Increment 2 will deliver an initial Counter-Unmanned Air Vehicle Capability and replace the existing Counter Rocket Artillery and Mortar intercept capability from 2017 as well as sustain ground-based air defence in the Falkland Islands beyond 2020.

Increment 3

Increment 3 will improve protection against the remainder of the Difficult Air Targets with Full Operating Capability expected in 2027.

The Difficult Air Targets set includes cruise missiles, Unmanned Air Vehicles, Attack Helicopters and Rockets, Artillery and Mortars.

A.2 Assessment Phase History

Approval for the Assessment Phase 1 was given by the MOD Investment Approvals Board in February 2010, and ratified in June 2010 as part of the review by the new coalition Government.

The objective of the Assessment Phase 1 is to establish the most cost effective solution to the Increment 1 requirement and early de-risking activities for Increment 2.

The current approval covers Assessment Phase work required to reach Main Gate 1, which leads to the Demonstration and Manufacture phase for Increment 1 and effectively Increment 2 Initial Gate.

The Assessment Phase has been structured into three workstreams as follows:

a. Workstream 0. Initial de-risking activities will identify and address any changes and further lessons learnt as a result of the evolving Land Environment Air Picture Provision and Urgent Operational Requirement projects and current operations. Further work will develop the architecture required to allow the incremental insertion of capability over the project lifecycle. This will also drive coherence into future Urgent Operational Requirement activity and address any scaling issues as a result of the Defence Review.

b. Workstream 1. The work stream will result in the down selection to a single affordable option to be presented at Network Enabled Airspace Defence and Surveillance Main Gate 1 to deliver the Automated Sense and Warn capability. A full option analysis will be undertaken to investigate retaining extant Urgent Operational Requirement and Core Programme components as well as alternative off the shelf solutions.

c. Workstream 2. This work stream will result in the development of a detailed system architecture and associated systems and technical requirements and initial evaluation of potential equipment options. It is planned to de-risk the overall Network Enabled Airspace Defence and Surveillance architecture, by integrating Future Local Area Air Defence Systems (Land) and High Velocity Missile models/ equipments into a representative Network Enabled Airspace Defence and Surveillance system and also undertake an initial assessment of Counter-Rocket Artillery and Mortars effectors.

In 2010, associated with the Strategic Defence and Security Review a number of options were raised to maintain alignment with wider Defence priorities. These were primarily associated with scaling and delivery timings.

An Industry Day was held in November 2010, at which a number of companies were briefed on the programme. Since then industry have been kept informed of developments via a series of newsletters. A series of one to one discussions with industry on Increment 1 is currently being conducted, following the Request for Information for Increment 1.

A.3 In-Year Progress

As at 31 March 2012 the project is moving steadily forward to a Main Gate submission in ***. It has been delayed primarily due to the MOD wide Comprehensive Commitment Control Regime. This delayed the start of several key tasks by ten months.

Good progress has been made however, refining the Network Enabled Air Defence and Surveillance Increment 1 requirement, and starting the operational analysis to provide much of the underlying justification for the Main Gate submission.

Engagement with industry continues, with a series of one to one discussions with those companies who have expressed an interest in Increment 1 work.

A.4 Capability Risks

Successive Capability Audits have confirmed the threat of Difficult Air Targets to the Land Environment (including the littoral) and in particular from rockets, artillery and mortars and unmanned air vehicles. The UK has already encountered the Rockets, Artillery and Mortar threat on current operations and it is highly likely that the threat to Land forces will become more sophisticated and challenging over time.

Network Enabled Airspace Defence and Surveillance will counter the Difficult Air Targets set with a mix of sensors, command, control, communications and shared situational awareness and, where necessary, effectors. Delivery is aligned to Defence Priorities of countering Rockets, Artillery, Mortar and unmanned air vehicles and then the remaining threats as well as maintaining the Ground Based Air Defence commitment to the Falkland Islands. Network Enabled Airspace Defence and Surveillance will enhance Multi-National and Joint integrated and layered Air Surveillance and Defence throughout and contributes to Joint Fires Integration and Airspace Management. The March 2012 Single Statement of Need states that ‘as an integrated element of the Joint force, the User must be able to compile and distribute a timely and accurate air picture, conduct airspace management and defeat the air threat throughout the Land area of operations.’

Increment 1 will replace existing Counter Rocket Artillery & Mortar Automated Sense and Warn Urgent Operational Requirement equipment with a counter rockets, artillery and mortars enduring capability from 2016. This capability is currently being used in Afghanistan to protect UK bases from rocket artillery and mortar attack. This was provided under Treasury Urgent Operational Requirement funding. Automatic Sense and Warn capabilities will be brought into the core equipment programme. Not taking Network Enabled Airspace Defence and Surveillance to Main Gate would delay the implementation of a core Automatic Sense and Warn capability, potentially increasing reliance on the Reserve for additional Urgent Operational Requirement activity to maintain support in Theatre.

A.5 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
Falcon	December 2012	Pre-Main Gate
Future Local Area Air Defence System (Land)	November 2016	Pre-Main Gate

A.6 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only		
Project / Increment Title	**Procurement Route**	**Approval Status**
Increment 1	Competitive - UK	Pre-Main Gate

A.7 Support Strategy

Description
Where possible existing support equipment, facilities and practices will be used to minimise the cost of introducing Network Enabled Airspace Defence and Surveillance into service. This will be achieved by applying Integrated Logistics Support techniques during the incremental acquisition, three Increment approach. The developed support solution(s) will be cognisant of those support solutions that are already in place for in-service equipment as well as the Counter Rockets Artillery and Mortar, Automatic Sense and Warn Urgent Operational Requirement and the incoming Land Equipment Air Picture Provision equipment. The aim will be to minimise and, where possible, use existing support assets and facilities in order to reduce the logistic burden and provide a coherent support solution for the Network Enabled Airspace Defence and Surveillance programme through life.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Increment 1	9	9	0	***	***
Total (£m)	**9**	**9**	**0**	***	***

B.2 Planned Cost Boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Forecast (£m)	Budgeted For Forecast (£m)	Highest Forecast (£m)
Increment 1	***	-	***

B.3 Cost of the Demonstration and Manufacture Phase - Not Applicable

B.4 Progress against approved Support / PFI Cost - Not Applicable

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	1	1	2
Demonstration and Manufacture Phase	0	0	-
Support Phase / PFI Cost	0	0	-
Total Expenditure	**1**	**1**	**2**

C Section C: Timescale

C.1 Duration of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Forecast Date of Main Investment Decision Approval	Length of Assessment Phase
Increment 1	February 2010	***	-

C.2 Planned Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Forecast	Budgeted For Forecast	Latest Forecast
Increment 1	***		

C.3 In-Service Date/Initial Operating Capability - Not Applicable

C.4. Full Operating Capability - Not Applicable

C.5 Support / PFI Contract - Not Applicab

D Section D: Performance

D.1. Technology Readiness Level

Current score	Last years score	Scale	Comments
7	-	1-10	Network Enabled Airspace Defence and Surveillance Increment 1 is bringing Urgent Operational Requirement Capability into core. The Combined Operational Effectiveness Investment Appraisal will determine which elements will be retained as part of the Increment 1 solution. These elements are at TRL9. Alternative candidate components identified through the Request for Information will only be considered if they are proven to be at least TRL7 in line with guidelines laid down in the Acquisition operating Framework for Main Gate.

D.2.1 Performance against Defence Lines of Development - Not Applicable

D.3. Performance against Key Performance Measures - Not Applicable

D.4 Support Contract - Not Applicable

Project Title	
Spearfish Upgrade	
Team Responsible	
Weapons- Torpedoes, Tomahawk and Harpoon Project Team	
Senior Responsible Owner	**Date Appointed**
Commodore Richard Stokes (Deterrent and Under Water Capability)	19th June 2012
Project/Increment Name	**Current Status of Projects /**
Development Phase	Pre-Main Investment Decision
Demonstration and Initial Manufacture	Post-Main Investment Decision

A. Section A: The Project

A.1 The Requirement

Spearfish is the sole heavyweight torpedo in the UK arsenal and is carried aboard Trafalgar and Vanguard Class submarines. The weapon was introduced into service in 1994 and is the only submarine launched weapon for offensive and defensive operations against ships and other submarines. Spearfish will be deployed in the Astute Class from 2013 and an upgraded Spearfish weapon is the planning assumption for equipping the future Deterrent.

The Spearfish Upgrade project is required to deliver a mid-life upgrade to sustain a credible and safe weapon for future submarine operations. The scope of the project includes digitisation of the weapon, the provision of a new insensitive munition warhead to replace the current ageing warhead, changes to the fuel system and the introduction of a new communications link. The upgrade will address obsolescence and also enable future reductions in through life costs.

A.2 Assessment Phase History

The Spearfish Upgrade project was approved in April 2010. The Approval allows the project to proceed from the Assessment Phase into the Demonstration and Initial Manufacture Phase, subject to remaining within approved time and cost constraints together with the satisfactory achievement of the Assessment Phase technology milestones.

The Assessment Phase contract was placed with BAE Systems Maritime Services (was BAE Systems Insyte) in April 2010. The position of BAE Systems Maritime Services as the Prime Contractor and Design Authority for Spearfish meant that they were best placed to successfully deliver the Spearfish Upgrade programme.This four year contract is underpinned by a technological maturity delivery schedule which will monitor progress against Technology Readiness Levels.

The Assessment Phase will deliver the required Technology Readiness Level through an in-water trial planned to complete by April 2014.

Early activity focused on establishing the technical requirements and defining the system. Project management plans were developed and the schedule baseline was established against which progress could be measured. An independent review of the plans and schedule was undertaken in October 2010. This review identified a broad range of recommendations which have been acted on to improve the project delivery programme. Progress was formally monitored on a quarterly basis with all significant milestones being achieved on time.

A.3 In-year Progress

All technical aspects of the project are proceeding satisfactorily. The warhead design achieved the required level of technological maturity in January 2012 following successful land based and underwater scale test firings undertaken in Germany and the UK respectively.

The fibre optic dispensing system evaluation trials in April 2011 identified problems with the fibre optic specification which necessitated a change to a more ruggedised specification of fibre. This element is not on the critical path and remains on track within the overall programme.

Initial design work to define and develop the interface between the upgraded weapon and the submarine combat system was completed in February 2012. This work is now being taken forward in conjunction with the Submarine Combat System Team in Defence Equipment & Support and BAE Systems.

A.4 Capability Risks

Spearfish is the only submarine launched weapon for offensive and defensive operations. If the Spearfish Upgrade project did not proceed then the UK would be unable to sustain a credible and safe torpedo to support submarine operations. This would have a critical impact on all current and future UK submarines.

A.5 Associated Projects

A.6 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only		
Project / Increment Title	**Procurement Route**	**Approval Status**
Development Phase	Single Source	Pre-Main Gate
Demonstration and Initial Manufacture	Single Source	Pre-Main Gate

A.7 Support Strategy

Description
Spearfish Upgrade support strategy will use the existing In-Service Support contract and any follow on support contract for Spearfish torpedoes. This is currently provided through a 10 year Contracting for Availability contract placed with BAE Systems Maritime Services in July 2009. This will embody the Spearfish Upgrade into the existing Spearfish weapons and provide a seamless transition of the upgraded Spearfish torpedo into service.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
Torpedoes Capability Contract for In-Service Support	BAE Systems Maritime Services	Support	Prime Contractor	Single Source

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Actual / Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Development Phase	49	49	0	-	-
Total (£m)	**49**	**49**	**0**	**-**	**-**

B.2 Actual cost boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Approved (£m)	Budgeted For (£m)	Highest Approved (£m)
Demonstration and Initial Manufacture	***	***	***

B.3 Cost of the Demonstration and Manufacture Phase

Project/Increment Title	Budgeted For Cost (£m)	Forecast Cost (£m)	Variation (+/- £m)	In-Year Variation (+/- £m)
Demonstration and Initial Manufacture	***	***		
Total (£m)	**0**	**0**	**0**	**0**

B.3.1 Cost variation against approved cost of the Demonstration and Manufacture Phase

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Development Phase	9	12	21
Demonstration and Initial Manufacture	0	2	2
Total Expenditure	**9**	**14**	**23**

C Section C: Timescale

C.1 Length of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Forecast Date of Main Investment Decision Approval	Length of Assessment Phase
Development Phase	April 2010	***	***

C.2 Actual Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Approved	Budgeted For	Latest Approved
Spearfish Upgrade	***	***	***

C.3 In-Service Date/Initial Operating Capability

C.3.1 Definition

Project/Increment Title	In-Service Date/Initial Operating Capability
Spearfish Upgrade	***

C.3.2 Progress against approved Dates

Project/Increment Title	Approved Date	Actual / Forecast Date	Variation (+/- months)	In-Year Variation (+/- months)
Spearfish Upgrade	***	***	***	***

C.3.3 Timescale variation

C.4. Full Operating Capability

D Section D: Performance

D.1. Technology Readiness Level

Technology Readiness Level	Current score	Last years score	Comments
Insensitive Munition Warhead	7	3	Achievement of Technology Readiness Level 7 has enabled Spearfish Upgrade to commence the Insensitive Munition Warhead Demonstration Phase
Torpedo System	3	3	Overall Technology Readiness Level 3 with some aspects having achieved Technology Readiness Level 4 to 9

D.2.1 Performance against Defence Lines of Development- N/A

D.3. Performance against Key Performance Measures-N/A

Project Title	
Successor	
Team Responsible	
Future Submarines	
Senior Responsible Owner	**Date Appointed**
Vice Admiral Andrew Matthews	11th May 2012
Project/Increment Name	**Current Status of Projects /**
Future Submarines Concept Phase	Pre-Main Investment Decision
Next Generation Nuclear Propulsion Plant Concept Phase	Pre-Main Investment Decision
Nuclear Propulsion Critical Technology Concept Phase	Pre-Main Investment Decision
Common Missile Compartment Non-Recurring Costs	Pre-Main Investment Decision
Future Submarines Assessment Phase	Pre-Main Investment Decision
Next Generation Nuclear Propulsion Plant Assessment Phase	Pre-Main Investment Decision
Nuclear Propulsion Critical Technology Assessment Phase	Pre-Main Investment Decision
Common Missile Compartment Assessment Phase	Pre-Main Investment Decision

A. Section A: The Project

A.1 The Requirement

In 2007 Parliament endorsed the Government's decision set out in their 2006 White Paper, "The Future of the United Kingdom's Nuclear Deterrent" Cm 6994, to maintain a Continuous At Sea Nuclear Deterrent by means of a new class of submarine. This will replace the current Vanguard class as it comes out of service.

The submarines are part of the MOD's committed core equipment programme as announced by the Secretary of State on 14th May 2012. Any decision to build will not be taken until after the next General Election expected in 2015 with any Main Gate Approval expected in 2016.

The Successor boats are expected to have a 25 year life with the option of at least a five year extension and suitable low detectability. The current planned service entry date for the first boat is 2028.

A Common Missile Compartment for the submarine is being developed with the United States. This will house the Trident Strategic Weapon System.

Next Generation Nuclear Propulsion Plant: At Initial Gate in April 2011, the decision was taken to power the submarine with a nuclear propulsion system known as Pressurised Water Reactor 3 (PWR3) which incorporates the latest safety technologies and ensures the boats have the performance to deliver the United Kingdom's minimum credible nuclear deterrent out to the 2060s.

The Nuclear Propulsion Critical Technology programme brings focused investment to regenerate the UK nuclear propulsion design and support capability, and ensures we have the design base essential to maintain a strategic sovereign UK nuclear capability.

The Wider Programme: The Strategic Defence and Security Review concluded that it would be possible to defer decisions on the replacement of both the warhead and infrastructure elements of the programme. Over the next few years concept studies will begin to refine potential programmes and costs. No decision as to whether a new warhead design is needed will be taken until the next Parliament. Neither the warhead nor infrastructure is covered in this report.

The Rolls-Royce Core Production Capability facility at Raynesway has recently passed Main Gate and will provide the fuel cores for Successor. This is covered by a separate Project Summary Sheet.

The expected overall cost of any replacement of the Nuclear Deterrent remains as set out in Para 5-11 of the 2006 White Paper as between £15-20bn for a four boat solution.

A.2 Assessment Phase History

The MOD's Future Submarines Project Team was established in 2007 from a small group within the then Nuclear Directorate.

Three companies, BAE Submarine Solutions (Platform), Babcock (support), and Rolls-Royce (power plant) known as the Tier One industrial partners were awarded contracts for the collaborative Concept Phase. This work informed the Options considered at Initial Gate. A Technical Demonstrator programme was also undertaken.

An Integrated Project Management Team has also been established.

Initial Gate was approved on 14th April 2011 and announced in Parliament on 18 May 2011 when a Report to Parliament, "The United Kingdom's Future Nuclear Deterrent:The Submarine Initial Gate Parliamentary Report" was made.

This followed a Concept phase from 2006/07 to April 2011 during which £914M was approved and spent.

This period saw the preparation and staffing of the Initial Gate Business Case through the MOD and Treasury with Treasury approval received on 29th March 2011.

2010 also saw the SDSR Strategic Defence and Security Review, "Securing Britain in an Age of Uncertainty: Publication of the Strategic Defence and Security Review" chapter three, published on 19th October 2010, and the Trident Value for Money Review (Fact Sheet ten). These made changes to the White Paper Assumptions. These included: a deferral of the planned delivery of the first submarine from 2024 to 2028, and a deferral of the Main Gate decision point from 2014 to 2016. There was also agreement with the United States on the major parameters of the jointly-developed common missile compartment design that will be capable of carrying the current Trident D5 missiles and any replacement missile once the D5 reaches the end of its expected life in the 2040s.

Initial Gate considered the Submarine design using pull through of Astute technology to reduce cost and design and delivery risk, and provide commonality in training and maintenance. There were also opportunities to take advantage of developments since the Astute design.

One such was the selection of Pressure Water Reactor 3 as the submarine's propulsion system. Pressure Water Reactor 3 provides superior performance and meets the Nuclear Safety Regulator's requirement to continually improve our performance and meet the "As Low As Reasonably Practicable" requirement. However Pressure Water Reactor 3 is more expensive to buy and operate over a 25 year period, but cheaper if the boats are run for longer.

The Coalition's policy on the Successor Deterrent is clear, and it is that it is committed to the United Kingdom's nuclear Deterrent based on a ballistic missile submarine. The Trident Alternatives Study will form part of the information considered to assist the decisions needed at Main Gate.

A.3 In-Year Progress

Immediately following approval, design activities commenced under an extension of the Concept contract while the full Design Phase and Engineering services framework contracts were finalised and signed with BAE Submarine Solutions and Babcock on 13th December 2011. These cover the period up to Main Gate and consist of an overarching framework structure with rolling waves of task packages. A contract amendment to align with these contracts was also placed with Rolls-Royce. A Collaborative Agreement between all three companies and the MOD was also signed. This governs the relationships between industrial parties' performance and profit retention.

An Integrated Master Schedule has been agreed with industry across the Programme.

The MOD and Integrated Programme Management teams have been established and teams built up in Barrow and Derby. Staff resource remains a challenge for the MOD in the face of overall MOD cuts.

A Review Note on progress in year was submitted to the MOD's Investment Approvals Committee in July 2012. This is due to be followed in autumn 2012 by the first "Successor" Annual Report to Parliament.

The approval for the Common Missile Compartment is not part of the Initial Gate approval, but the main investment decision will be in the Main Gate approval. It is planned that a Review Note regarding the build location will be submitted in 2012.

Milestones for the year 2012/13 are to hold a Whole Boat Strategic Design review and an extension of the Next Generation Nuclear Propulsion Plant contract.

A.4 Capability Risks

Without the design and build of a new class of ballistic missile submarines, the United Kingdom would be unable to maintain its independent nuclear deterrent once the current Vanguard class goes out of service. This decision was agreed by Parliament in 2007 following the 2006 White Paper: "The Future of the United Kingdom's Nuclear Deterrent" Cm 6994. The current Government also supports the maintenance of the United Kingdom's independent Nuclear Deterrent capability.

The Nuclear Deterrent is a current Operation.

A.5 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
Core Production Capability	Full Operating Capability May 2021	Post Main-Gate

A.6 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only		
Project / Increment Title	**Procurement Route**	**Approval Status**
Future Submarines Concept Phase	Ascertained costs to the three tier 1 contractors	Pre-Main Gate
Next Generation Nuclear Propulsion Plant Concept Phase	Single Source	Pre-Main Gate
Nuclear Propulsion Critical Technology Concept Phase	Non-Competitive - International	Pre-Main Gate
Common Missile Compartment Non-Recurring Costs	Non-Competitive - International	Pre-Main Gate
Future Submarines Assessment Phase	Ascertained costs to the three tier 1 contractors	

Next Generation Nuclear Propulsion Plant Assessment Phase	Single Source	
Nuclear Propulsion Critical Technology Assessment Phase	Non-Competitive - International	
Common Missile Compartment Assessment Phase	To be decided	

A.7 Support Strategy

Description
The Support Chain Strategy is in preparation, and engagement has started. The aim is for optimised, affordable Through Life Support with established Whole Life Costs and challenging availability targets. The target is to have a Whole Life Cost that does not exceed that of the current Vanguard class and ensure maintenance of the Continuous At Sea Deterrent. Drivers for change include: Long term supply chain incentivisation and reductions in design complexity and component range and scale. Babcock is the Tier 1 company for support, and the strategy will be delivered as a collaborative activity within the Submarine Enterprise Performance Programme.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
	Babcock	Support		Single Source

B Section B: Cost

B.1 Cost of the Assessment Phase*

Project/ Increment Title	Approved Cost (£m)	Forecast Cost (£m)	Variation (£m)	Post-Main Investment Decision Projects only	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Future Submarines Concept Phase	209	198	-11	-	-
Next Generation Nuclear Propulsion Plant Concept	305	305	0	-	-
Nuclear Propulsion Critical Technology Concept Phase	108	80	-28	-	-
Common Missile Compartment Non-Recurring Costs	283	263	-20	-	-
Total Pre Initial Gate (£m)	**905**	**846**	**-59**	-	-
Future Submarines Assessment Phase	1786	1830	+44	-	-
Next Generation Nuclear Propulsion Plant Assessment Phase	1064	1066	+2	-	-
Nuclear Propulsion Critical Technology Assessment Phase	166	141	-25	-	-
Total Assessment Phase (£m)	**3016**	**3037**	**+21**	**-**	**-**
Total	**3921**	**3883**	**-38**	**-**	**-**

*** Table also includes pre-assessment phase, and non recurring development costs.**

B.3 Cost of the Demonstration and Manufacture Phase - Not Applicable

B.2 Planned Cost Boundaries for Demonstration and Manufacture Phase / PFI- N/A

B.5 Expenditure to Date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Concept Phase	535	49	584
Assessment Phase	201	318	519
Total Expenditure	**736**	**367**	**1103**

C Section C: Timescale

C.1 Duration of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Forecast Date of Main Investment Decision Approval	Length of Assessment Phase
Successor	April 2011	December 2016	68

C.2 Planned Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Forecast	Budgeted For Forecast	Latest Forecast
Successor	-	***	-

C.3 In-Service Date/Initial Operating Capability - Not Applicable

C.4. Full Operating Capability - Not Applicable

C.5 Support / PFI Contract - Not Applicab

D Section D: Performance

D.1. Technology Readiness Level

Current score	Last years score	Scale	Comments
-	-	1-10	Successor Technology Readiness Levels are classified.

D.2.1 Performance against Defence Lines of Development - Not Applicable

D.3. Performance against Key Performance Measures - Not Applicable

D.4 Support Contract - Not Applicable

Project Title	
Type 26 Global Combat Ship	
Team Responsible	
Type 26 Global Combat Ship	
Senior Responsible Owner	**Date Appointed**
Commodore Simon Kings (Above Water Capability)	14th February 2011
Project/Increment Name	**Current Status of Projects /**
Type 26 Global Combat Ship	Pre-Main Investment Decision

A. Section A: The Project

A.1 The Requirement

There is a need to replace the 13 Type 23 surface combatant capability before the safe operating standard for legacy ships is withdrawn and the platforms become obsolete. Following the Strategic Defence and Security Review it was confirmed that this enduring requirement will be delivered by the Type 26 Global Combat Ship.

The Type 26 Global Combat Ship is planned to be a globally deployable and sustainable warship that will form the spine of the Royal Navy's future fleet. It will be a task group enabled Anti Submarine Warfare warship and will combine the capabilities necessary to protect maritime task groups, the strategic deterrent and land forces, with the flexibility to conduct a wide range of other tasks. The Type 26 Global Combat Ship retains the combat power that had been provisioned for the Type 26 (C1) and C2 originally, whilst enhancing endurance and intelligence gathering attributes in a common, acoustically quiet hull.

Type 23s were designed for an 18 year life but this has been extended to almost twice the original design life. The current planning assumption is to replace the ships under the Type 26 Global Combat Ship programme, currently based on one class of up to 13 ships delivered in two variants; anti submarine warfare and general purpose vessels.

A.2 Assessment Phase History

The Sustained Surface Combatant Capability pathfinder project recommended a three-class solution for Future Surface Combatant. The first class, Type 26 (C1), is a task-group enabled anti-submarine warfare frigate. The second, C2, is a general purpose frigate. The third, C3, is to provide Mine Countermeasure, Hydrographic and Patrol capabilities. The Sustained Surface Combatant Capability Pathfinder highlighted a need for up to ten Type 26 (C1) and eight C2s. Type 26 (C1) was to be built first at a rate of one per year, followed by C2. This approach also met the needs of industrial sustainability whilst fulfilling the Royal Navy requirement.

It was on this basis that the Concept Phase progressed to form the basis of the Initial Gate approval for Type 26 (C1) on 18 March 2010. It was anticipated that Main Gate approval would be sought by the middle of the decade and estimated that for a ten ship class the procurement cost would be ***, with a whole life cost of ***, assuming a ship life of 25 years. It was also recognised that there would be a Strategic Defence and Security Review following the 2010 General Election. Subsequently as part of the approval, it was planned that there would be a mid-phase review point to assess the impact of any changes in policy driven by that Review.

The Approved budgetary level (VAT inc) for the non-competitive procurement of the assessment work at 50% confidence, consisted of £158.4M total direct resource consumption. The approval from the Investment Approvals Board capped the "not to exceed" value of the Assessment Phase at this 50% level. All non-UK new design and build options were discounted at the Initial Gate, as recorded in the Investment Appraisal, noting the over-arching agreement with BAE Systems Maritime – Naval Ships in the Terms of Business Agreement (dated 21 July 2009).

Subject to approvals and value for money assessments, the Type 26 (C1) is expected to be procured without competition from BAE Systems Maritime - Naval Ships under the Terms of Business Agreement (Dated 21 July 2009). A joint team is now in place and working at a number of BAE Systems' sites, primarily in Glasgow and Filton (where the MOD members of the joint team are based). As part of this, it is intended that approval for a commitment to the support solution, including costs from the supply chain, will be sought at the Main Gate 2 approval at the end of the Assessment Phase.

Following the Strategic Defence and Security Review, the decision was taken to change to a Type 26 Global Combat Ship design that is smaller, with reduced capability scope and more exportable whilst still meeting the needs of the Royal Navy and maintaining the needs of industrial sustainability. The Strategic Defence and Security Review reduced the total surface fleet to 19 frigates and destroyers which will include six Type 45 destroyers and the current Type 23 frigates which will be replaced by Type 26 Global Combat Ship after 2020.This has reduced the overall procurement cost of the programme (not including Support costs) from ***.

The alignment of renamed Type 26 Global Combat Ship against the goals of the Strategic Defence and Security Review has been confirmed in an Information Note submitted to the Investment Approvals Board in January 2011. This Information Note stated that:

a. Approval will be split into two parts. Approval (Main Gate 1) will seek endorsement of the requirements to be delivered by Type 26 Global Combat Ship, with Main Gate 2, the main investment decision following at the end of the Assessment Phase. This will allow detailed costing and design work to proceed against a defined requirement so that the project can present an affordable design proposal for approval at Main Gate 2 and subsequent contract signing;
b. The remaining programme key milestones remain unchanged, with planned service entry as soon as possible after 2020;
c. Type 26 Global Combat Ship design is considered to have significant export potential with considerable effort being expended to encourage overseas partner interest.

A.3 In-Year Progress

The design and study work for the Analysis of Options stage concluded in the Capability Decision Point, held in November 2011. This identified a baseline design from which more detailed design work has commenced, including the assessment of that design which is being matured during the remainder of the Assessment Phase. The Capability Decision Point informed the Main Gate 1 submission which has been endorsed by the MOD Investment Approvals Committee. Main Gate 1 provides approval for the Project Team to continue the Assessment Phase with the detailed design work on the Type 26 Global Combat Ship capability architecture, down selected on the basis of the Capability Decision Point output; and for the Support Solution to enter its Assessment Phase. The detailed design phase and industry engagement process will underpin the programme's Main Gate 2 at the end of the Assessment Phase, which is expected to conclude towards the middle of this decade, allowing the production phase to begin within the same timescales.

In order to maximise Type 26 Global Combat Ship export potential to realise wider benefits to the MOD, industry and the UK, engagement has begun with several countries to determine their requirements and how these can be matched with Type 26 Global Combat Ship. The design is being developed in close partnership with industry to improve the opportunities for these requirements to be realised in the design.

A.4 Capability Risks

The Strategic Defence and Security Review confirmed the need for Future Force 2020 to provide maritime defence of the UK and its South Atlantic Overseas Territories. Capabilities should include a surface fleet of 19 frigates and destroyers providing military flexibility across a variety of operations, including six Type 45 destroyers and the current Type 23 frigates. However there is a need to replace the Type 22 and Type 23 surface combatant capability before the safe operating standard for legacy ships is withdrawn and the platforms become obsolete.

Type 23s were designed for an 18 year life but this has been extended to almost twice the original design life. There is no scope to extend the current platforms further without extensive unaffordable modifications. If further extension was required the hull strength, stability and legislative safety compliance would need to be addressed by work that removes capability, does not reduce the risk to the generation of forces at readiness and costs more than a new build option. The Strategic Defence and Security Review confirmed that as soon as possible after 2020 the Type 23 frigates will be replaced by the Type 26 Global Combat Ship which will be designed to be easily adapted to change roles and capabilities depending on the strategic circumstances.

A.5 Associated Projects

A.6 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only		
Project / Increment Title	**Procurement Route**	**Approval Status**
Type 26 Global Combat Ship	Single Source	Pre-Main Gate

A.7 Support Strategy

Description
The project Assessment Phase approval covers funding for Concept and Assessment Phase Support activities. The Assessment Phase contract was placed non-competitively under the BAE Systems Maritime - Naval Ships Terms of Business Agreement. Support Initial Gate which was approved as part of the Main Gate 1 submission to the Investment Approvals Committee outlined the initial commercial arrangement to be placed following Main Gate 2 Approval. The current assumption is that the initial commercial arrangement to be placed following Main Gate 2 Approval, will be: a. a pricing framework agreed with the dockyard partners within the Surface Ship Support Alliance / Maritime Support Delivery Framework for support at the platform level covering Class Output Management, fleet time maintenance and upkeep activity. At this stage some aspects of the commercial agreements will be based on pricing formulae relating variations in performance targets, operational and other parameters. During the build of the First of Class, these arrangements will be firmed up so that planned maintenance and in service activities are priced as far as possible for a complete support cycle. b. tailored equipment support contracts appropriate to the different equipment characteristics. The strategic support options of Surface Ship Support Alliance or the Public Sector Comparator will establish the means by which support will be delivered in an integrated way at whole ship level. This level of support is underpinned by support of the constituent equipments and systems, which will be delivered through differing arrangements depending on a range of factors such as whether the equipment is unique to Type 26 Global Combat Ship, whether it is Commercial off the Shelf or its original procurement route. These equipment support arrangements in turn influence the platform level solution. It is the intent to seek contractible offers for long term support arrangements concurrently with contracting for initial procurement to the extent practicable.

Support Title	Contractor	Contract Scope	Contract Type	Procurement Route
In-Service Support Contract for Type 26 Global Combat Ship	BAE Systems	Support	Prime Contractor	Single Source

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
Type 26 Global Combat Ship	158	151	-7	***	***
Total (£m)	**158**	**151**	**-7**	***	***

B.2 Planned Cost Boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Forecast (£m)	Budgeted For Forecast (£m)	Highest Forecast (£m)
Type 26 Global Combat Ship	***	***	***

B.3 Cost of the Demonstration and Manufacture Phase - Not Applicable

B.4 Progress against approved Support / PFI Cost - Not Applicable

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	15	29	44
Demonstration and Manufacture Phase	0	0	-
Support Phase / PFI Cost	0	0	-
Total Expenditure	**15**	**29**	**44**

C Section C: Timescale

C.1 Duration of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Forecast Date of Main Investment Decision Approval	Length of Assessment Phase
Type 26 Global Combat Ship	March 2010	***	***

C.2 Planned Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Forecast	Budgeted For Forecast	Latest Forecast
Type 26 Global Combat Ship	***	-	***

C.3 In-Service Date/Initial Operating Capability - Not Applicable

C.4. Full Operating Capability - Not Applicable

C.5 Support / PFI Contract - Not Applicab

D Section D: Performance

D.1. Technology Readiness Level

Current score	Last years score	Scale	Comments
4	4	1-10	

D.2.1 Performance against Defence Lines of Development - Not Applicable

D.3. Performance against Key Performance Measures - Not Applicable

D.4 Support Contract - Not Applicable

Project Title	
United Kingdom Co-operative Engagement Capability Frigates and Destroyers Programme	
Team Responsible	
Joint Sensor and Engagement Networks	
Senior Responsible Owner	**Date Appointed**
Commodore Simon Kings (Above Water Capability)	14th February 2011
Project/Increment Name	**Current Status of Projects /**
United Kingdom Co-operative Engagement Capability Frigates and Destroyers Programme	Pre-Main Investment Decision

A. Section A: The Project

A.1 The Requirement

The Cooperative Engagement Capability is a United States Naval System fitted to an increasing number of United States assets including ships, aircraft, and Army and Marine Corps land systems. Cooperative Engagement Capability does not replace any single system; rather it optimises war-fighting capabilities inherent in existing and future combat systems.

UK Cooperative Engagement Capability is a Network Enabled Capability project which provides an advanced air and missile defence capability by sharing and fusing engagement quality data from suitably equipped platforms to deliver a single, coherent, stable air picture. It will fill the capability gap originally identified in Commander in Chief Fleet's Military Capability reports and re-affirmed in the Defence Equipment Capability (Above Water Effects) capability audit in 2007, to detect, monitor, and counter Air Warfare threats. It will also reduce a gap in interoperability with the United States.

UK Cooperative Engagement Capability enhances the ability of fitted platforms to work together in detection, tracking and engagement of air targets. This capability represents a major advance in both air and missile defence.

A.2 Assessment Phase History

The objective of the Assessment Phase is to establish the most cost effective solution to the requirement for a Cooperative Engagement Capability system capability for Type 23 Frigates and Type 45 Destroyers. Cooperative Engagement Capability is a proven United States developed programme which the UK is considering purchasing via the Foreign Military Sales process. The UK, with United States assistance, is developing and testing the platform architecture and support and integration aspects, to reduce risk prior to Main Gate. A Planning Round 2011 Option was taken to delete Type 23 and meet the In-build phase of Type 26 Global Combat Ship.

Assessment Phase 1. Approval for UK Cooperative Engagement Capability Assessment Phase 1 was received in May 2000 and, following a competition, contracts were placed with Lockheed Martin UK Integrated Systems and Raytheon UK, with down-selection to Lockheed Martin for Assessment Phase 2. This was for the Type 23 only. Also during this phase a study contract was undertaken by BAE Systems to investigate Cooperative Engagement Capability fit on the Type 45.

Assessment Phase 2. In May 2003 approval was received to accelerate the risk reduction work on Type 45 by two years, at no additional procurement cost. In July 2003, this work was placed on contract by means of an amendment to the Type 45 prime contract with BAE Systems Surface Ships Ltd, the Prime Contracting Office for the Type 45. Costed proposals for the Demonstration and Manufacture Phase for both Type 23 and Type 45 were delivered by Lockheed Martin and BAE Systems Surface Ships Ltd respectively in 2005. However, an Option was taken as part of the Equipment Plan 2005 planning round extending the Assessment Phase by five years, enabling further de-risking of the project.

Assessment Phase 2b. De-risking study contracts were placed with Lockheed Martin and BAE Systems Surface Ships Ltd to investigate the options for integrating Cooperative Engagement Capability into the two platforms and their existing/planned systems and to produce recommendations for design solutions. This work was successfully completed in March 2008.

Assessment Phase 3. A Review Note signed in September 2008 approved the remaining Assessment Phase work. This covers detailed design and delivery of the Assessment Phase 2b study recommendations for Cooperative Engagement Capability system installation and interface on both Type 23 and Type 45 platforms. Planning Round 2011 Option to delete Type 23 and fit on Type 26 resulted in UK Cooperative Engagement Capability being included as part of the design baseline. A current Planning Round 2012 option to delete the programme resulted in further delays to Main Gate submission, however, the Project Team continued to assess a number of bids from Industry in preparation for Main Gate. Further Operational Analysis, a review of technology assumptions since the Initial Gate approval in 2000, and a revised Investment Appraisal were commissioned.

A.3 In-Year Progress

Continuation and resultant completion of Assessment Phase work with BAE Systems Surface Ships Limited. All Assessment Phase Deliverables have been received and accepted by Defence Equipment &Support. Three bids have been received from Industry to support Main Gate submission. The bids are from BAE Systems Surface Ships Limited, MBDA and Mission Systems. Parallel pricing work has been tasked to Cost Analysis & Assurance Services with four engineering tasks placed including an Independent Cost Estimate for software pricing. Evaluation of the bids are being carried out by the Delivery Team in anticipation of favourable Planning Round 12 outcome to proceed to Main Gate in Financial Year 12/13. The Procurement Strategy has been fully endorsed by Intelligent Surveillance Targeting Acquisition & Reconaissance Commercial Head. Delays in announcing Planning Round 12 resulted in a Main Gate forecast of September 2012.

Planning Round 2012 has announced United Kingdom Cooperative Engagement Capability Project Delete Option E12AW006S has been taken and is not part of the funded Core Programme. Delete Option also identified £1m to conduct project close down activities in Financial Year12/13.

A.4 Capability Risks

Cooperative Engagement Capability is a force multiplier which provides an advanced air and missile defence capability by sharing and fusing engagement quality data from existing sensors on suitably equipped platforms to deliver a single, coherent, stable air picture. UK Cooperative Engagement Capability will be fitted to 14 platforms (six x Type 45 Destroyers and eight x Type 26 Global Combat Ship) and will be fully interoperable with the United States, forming a seamless Cooperative Engagement Capability network. Cooperative Engagement Capabilty is a long standing programme with United Kingdom to United States Navy Board international obligations. United Kingdom acquisition of Cooperative Engagement Capability is enabled through the United States/United Kingdom Cooperative Engagement Capability Memorandum Of Understanding and Foreign Military Sales Cases, and is essential for future coalition interoperability. UK Co-operative Engagment Capability partly mitigates the decision to reduce the number of Type 45 hulls to six. UK Cooperative Engagement Capability fit to Type 45 is a recognised de-risking measure to the Type 45 programme and the Above Water Effects Capability Audit 2011 dated 13 September 2011.

A.5 Associated Projects

Title of Associated Project	Forecast In Service Date/ Initial Operating Capability	Approval Status
Type 45 Destroyers	July 2010	
Type 26 Global Combat Ship	December 2021	Pre-Main Gate

A.6 Procurement Strategy

Pre-Main Investment Decision Projects / Increments only		
Project / Increment Title	**Procurement Route**	**Approval Status**
United Kingdom Co-operative Engagement Capability Frigates and Destroyers Programme	Non-Competitive - UK	Pre-Main Gate

Post-Main Investment Decision Projects / Increments only				
Project / Increment Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**
United Kingdom Co-operative Engagement Capability Frigates and Destroyers Programme				

A.7 Support Strategy

Description
The planned support strategy forms part of the procurement strategy which will be endorsed at the Main Investment decision. This support strategy assumes two main elements: the United States core Co-operative Engagement Capability to be supported via a Foreign Military Sales case; the UK element to be supported by a Contractor Logistic Support contract with United Kingdom Industry. A key element will be achieving value for money by using the existing United States spares, support and training structures wherever practical as articulated in the Procurement Strategy Analysis of Support Options.

Support Title	**Contractor**	**Contract Scope**	**Contract Type**	**Procurement Route**

B Section B: Cost

B.1 Cost of the Assessment Phase

Project/ Increment Title	Approved Cost (£m)	Forecast Cost (£m)	Variation (£m)	Post-Main Investment	
				Approved cost as a proportion of total estimated procurement expenditure (%)	Actual Cost as a proportion of total estimated procurement expenditure (%)
United Kingdom Co-operative Engagement Capability Frigates and Destroyers Programme	25	53	+28	***	***
Total (£m)	**25**	**53**	**+28**	***	***

B.2 Planned Cost Boundaries for Demonstration and Manufacture Phase / PFI

Project/Increment Title	Lowest Forecast (£m)	Budgeted For Forecast (£m)	Highest Forecast (£m)
United Kingdom Co-operative	***	-	-

B.3 Cost of the Demonstration and Manufacture Phase - Not Applicable

B.4 Progress against approved Support / PFI Cost - Not Applicable

B.5 Expenditure to date

Description	Previous expenditure to 31 March 2011 (£m)	In-year expenditure (£m)	Total expenditure to 31 March 2012 (£m)
Assessment Phase	53	0	53
Demonstration and Manufacture Phase	0	0	-
Support Phase / PFI Cost	0	0	-
Total Expenditure	**53**	**0**	**53**

C Section C: Timescale

C.1 Duration of the Assessment Phase

Project/Increment Title	Date of Initial Investment Decision Approval	Forecast Date of Main Investment Decision Approval	Length of Assessment Phase
United Kingdom Co-operative Engagement Capability Frigates and Destroyers Programme	May 2000	September 2012	148

C.2 Planned Boundaries for In Service Date or Initial Operating Capability

Project/Increment Title	Earliest Forecast	Budgeted For Forecast	Latest Forecast
United Kingdom Co-operative Engagement Capability Frigates and Destroyers Programme	***	-	

C.3 In-Service Date/Initial Operating Capability - Not Applicable

C.4. Full Operating Capability - Not Applicable

C.5 Support / PFI Contract - Not Applicab

D Section D: Performance

D.1. Technology Readiness Level

Current score	Last years score	Scale	Comments
7	7	1-10	

D.2.1 Performance against Defence Lines of Development - Not Applicable

D.3. Performance against Key Performance Measures - Not Applicable

D.4 Support Contract - Not Applicable

Design and Production by
NAO Communications
DP Ref: 10066-001

This report has been printed on paper containing 75% recycled fibre content minimum, and sourced from responsibly managed and sustainable forests certified in accordance with the FSC® (Forest Stewardship Council).

The wood pulp is totally recyclable and acid-free. Our printers also have full ISO 14001 environmental accreditation, which ensures that they have effective procedures in place to manage waste and practices that may affect the environment.

National Audit Office

Published by TSO (The Stationery Office) and available from:

Online
www.tsoshop.co.uk

Mail, telephone, fax and email
TSO
PO Box 29, Norwich NR3 1GN
Telephone orders/general enquiries: 0870 600 5522
Order through the Parliamentary Hotline
Lo-Call 0845 7 023474
Fax orders: 0870 600 5533
Email: customer.services@tso.co.uk
Textphone: 0870 240 3701

The Houses of Parliament Shop
12 Bridge Street, Parliament Square,
London SW1A 2JX
Telephone orders/general enquiries: 020 7219 3890
Fax orders: 020 7219 3866
Email: shop@parliament.uk
Internet: http://www.shop.parliament.uk

TSO@Blackwell and other accredited agents

£59.00

ISBN 978-0-10-298059-2

9 780102 980592