National Audit Office

MINISTRY OF DEFENCE

Major Projects Report 2008
Project Summary Sheets

REPORT BY THE COMPTROLLER AND AUDITOR GENERAL | HC 64-II Session 2008-2009 | 18 December 2008

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Project Summary Sheets

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Tim Burr
Comptroller and Auditor General
National Audit Office

11 December 2008

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Cover photograph courtesy of Thales, "Watchkeeper UAV takes off".

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MAJOR PROJECTS REPORT 2008

POST MAIN GATE

PRE MAIN GATE

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POST MAIN GATE PROJECT SUMMARY SHEET

A400M

Integrated Project Team Responsible:

A400M

Single Point of Accountability for project capability:

Director Equipment Capability (Expeditionary Logistics & Support)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

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 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 this decade, 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 (Germany, France, Turkey, Spain, Belgium, Luxembourg and United Kingdom). A total of 180 aircraft (25 for UK) are being procured through a contract with Airbus Military Sociedad Limitada. The design phase is nearing completion and manufacture activities have commenced. First Flight is expected in Financial Year 2008-2009 and delivery of the first UK aircraft to the Royal Air Force in Financial Year 2010-2011.

1b. Associated projects

Critical to Achievement of ISD		**Critical to Initial Gate Requirement**	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
Airbus Military Sociedad Limitada	Development, Production and Initial In Service Support	Fixed Price, subject to Variation of Price (VOP)	International Competition

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	2632
Approved Cost at Main Gate	2744
Variation	-112
In-year changes	+3

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	+13	Changed Requirement	Delay of programme by 9 months (-£12m) and associated Cost of Capital changes (+£25m)
August 2007	-16	Exchange Rate	Exchange rate changes (-£15m) and associated Cost Of Capital changes (-£1m)
August 2007	-3	Changed Budgetary Priorities	Realism reprofile of Development Production Phase contract together with Directed Infra-Red Counter Measures and Cargo Hold Mock-up costs (-£4m) and associated Cost Of Capital changes (+£1m)
August 2007	-26	Accounting Adjustments and Re-definitions	Changes in timing of expenditure leading to a variation in Cost of Capital (-£26m)
August 2007	+61	Technical Factors	Growth in estimates for training and Government Furnished Facilities (+£57m) and associated Cost Of Capital changes (+£4m)
April 2007	-26	Changed Requirement	Deletion of one training simulator (-£23m) and associated Cost Of Capital changes (-£3m)
Historic	-51	Accounting Adjustments and Re-definitions	Variation in Cost of Capital due to a revision of accruals in future forecast costs (-£8m). Changes to Cost of Capital costs and Sunk Costs (-£1m). Correction of previous years treatment of deliveries (+£1m). Transfer from RDEL to CDEL (-£1m). Difference in variation figures due to revision of Cost of Capital

Date	Variation (£m)	Factor	Explanation
			Charge (-£42m).
Historic	-90	Changed Budgetary Priorities	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).
Historic	-320	Changed Requirement	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).
Historic	+353	Contracting Process	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).

Date	Variation (£m)	Factor	Explanation
			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	+5	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).
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 Strategy	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 offtake (+£130m).
Historic	+27	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

Date	Variation (£m)	Factor	Explanation
			UK only certification requirements (+£6m). 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).
Historic	-116	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the approved figures at Main Gate.
Net Variation	-112		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	564

2d. Years of peak procurement expenditure

2010/2011	2011/2012

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
***	***	25	25

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	Delivery of 7th aircraft with Strategic Military Aircraft Release and support arrangements.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	December 2011
Approved ISD at Main Gate	December 2009
Variation (Months)	+24
In-year changes	+9

3c. Reasons for variation from approved ISD

Date	**Variation (months)**	**Factor**	**Explanation**
February 2008	+9	Technical Factors	Contractor delay to aircraft delivery
Historic	+16	Changed Budgetary Priorities	Change in the customer's requirement flowing from changed budgetary priorities.
Historic	+9	Procurement Strategy	Delay in bringing contract into effect as a result of delayed approvals in Germany.
Historic	-10	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the approved figures at Main Gate.
Net Variation	+24		

3d. Cost resulting from ISD variation

Type of Cost/Saving	**Cost £m**	**Saving £m**	**Explanation**
Short Term Plan	+ 41	-	Life extension of C130K aircraft.
Total	+ 41		

3e. Operational impact of ISD variation

While there has been in-year slippage of 9 months, the revised A400M ISD of Dec 2011 remains within the out-of-service date for C130K aircraft of 2012.

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Deployment Capability	Yes	-	-
02	Payload	Yes	-	-
03	Environmental Operating Envelope	Yes	-	-
04	Tactical Operations	Yes	-	-
05	Navigation Performance	Yes	-	-
06	Communication System	Yes	-	-
07	Defensive Aids Suite	Yes	-	-
08	Aerial Delivery	Yes	-	-
09	Crew Composition	Yes	-	-
Percentage currently forecast to be met		100 %		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
-	-	-	-

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

The Government announced in December 1994 that it would replace its ageing C-130K Hercules fleet, in part by procuring 25 C-130J's from Lockheed Martin and in addition, subject to certain conditions, by rejoining 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 (UK, France, Germany, Italy, Spain, Belgium, Turkey). Subsequently, in July 1998, four nations (UK, France, Spain, Belgium) issued a "competitive Request For Proposals" for a Future Transport Aircraft to Airbus Military Company (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 and industrial 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.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	1	0.04%
Approved Cost at Initial Gate	2	0.08%
Variation	-1	

5c. Duration of Assessment Phase

Date of Main Gate Approval	May 2000
Date of Initial Gate Approval	-
Length of Assessment Phase [months]	-

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	-	2628	2744
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	-	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast In Service Date at Main Gate	-	February 2009	December 2009
Envelope within which capability was expected to be available at Initial Gate	-	December 2007	-

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POST MAIN GATE PROJECT SUMMARY SHEET

ADVANCED JET TRAINER

Integrated Project Team Responsible:

UNITED KINGDOM MILITARY FLYING TRAINING SYSTEM (UKMFTS)

Single Point of Accountability for project capability:

Director Equipment Capability (Theatre Airspace)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

The MoD requires an Advanced Jet Trainer for pre-operational training of fast-jet pilots. This task is currently fulfilled by the Hawk TMk1 aircraft, which will need to be replaced in the tactical weapons training role from 2010 onwards. The full range of skills required for aircrew to fly front-line aircraft cannot now be gained using the current Advanced Jet Trainer, so more training on operational aircraft has to be undertaken. The introduction of Typhoon and the future Joint Combat Aircraft exacerbates this training gap such that the required standard for Typhoon aircrew is not achievable with Hawk TMk1.

The Advanced Jet Trainer is the Fast Jet element of the wider UK Military Flying Training System programme and will deliver capabilities including: a modern glass cockpit environment, an avionics suite compliant with latest airspace legislation, an embedded training system that simulates front-line sensors and weapons and a flexible and upgradeable mission system. Support, Infrastructure and a Ground Based Training Environment will also be provided. Advanced Jet Trainer is contracted for in such a way to ensure that it can be subsumed within the main UK Military Flying Training System contract at a later date.

The development and production programmes remain on track to deliver on time. The production aircraft build standard was fixed at Main Gate. A capability enhancement has had Business Case approval. Contract negotiations are underway for provision of aircraft support post delivery.

1b. Associated projects

Critical to Achievement of ISD		**Critical to Initial Gate Requirement**	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
BAE Systems, Warton	Assessment to Demonstration	Cost plus incentive fee, subject to a maximum price	No Acceptable Price No Contract (NAPNOC)
BAE Systems Insyte, Chelmsford	Manufacture to In-Service	Target Cost Incentive Fee	No Acceptable Price No Contract (NAPNOC)

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	467
Approved Cost at Main Gate	497
Variation	-30
In-year changes	+3

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	+3	Technical Factors	Additional Assessment work on an enhancement capability, Operational Capability 2. Including design and development contract increases (+£4m), support costs increases (+£1m) and reduction in the cost of capital (-£2m).
Historic	-11	Technical Factors	Changes between Production Contract Award and Planning Round submission, including changes to production support estimates (-£4m), transfer of risk to UK Military Flying Training System (-£8m), increase in demonstration costs (+£2m) and changes in Cost of Capital (-£1m).
Historic	-15	Contracting Process	Change in BAE Systems labour rates from approval to the agreed contract price as a result of the agreement of rates between the MoD and BAE Systems.
Historic	-7	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the highest acceptable (80%) estimates at Main Gate.
Net Variation	-30		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	338

2d. Years of peak procurement expenditure

2007/2008	2008/2009

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
13.1	12.7	28	28

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	ISD is defined as the date where Hawk 128 can be used for the development of the future Phase 4 training syllabus. This will require Initial Logistic Support Date to be achieved, delivery of 4 aircraft to Operational Capability 0 standard, 6 pilots converted to type and at least a Part Task Trainer.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	November 2009
Approved ISD at Main Gate	February 2010
Variation (Months)	-3
In-year changes	+4

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
March 2008	+4	Technical Factors	Risk increase in late delivery of a dependency resulting in a 4 month slip to the ISD noted at Main Gate.
Historic	-7	Risk Differential	Difference between the risk allowed for in the most likely (50%) and highest acceptable (80%) estimates at Main Gate.
Net Variation	-3		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
Other	-	-4	Reflects the anticipated change in BAE Systems estimates for supporting Hawk 128
Support Cost of Current equipment	+4		Additional cost of further support to Hawk TMk1 Training Fleet

3e. Operational impact of ISD variation

There is no operational impact as the Hawk TMk1 Out of Service date has been extended such that the continuity of Flying training will be maintained.

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	SR-396 The System shall be powered by a jet engine or engines	Yes	-	-
02	SR-475 The System platform shall incorporate primary flying controls that are fully operable from both cockpits.	Yes	-	-
03	SR-513 The System platform shall incorporate a Stores Management System to allow the selection, firing/release and jettison of simulated weapon.	Yes	-	-
04	SR-558 The System platform shall present Artificial Intelligence radar data to allow search, location, tracking and engagement of real, simulated and synthetic airborne targets.	-	-	Yes
05	SR-604 The System platform shall perform representative Basic Fighter Manoeuvres.	Yes	-	-
06	SR-649 The System platform shall complete a low level evading route of at least 45 mins at a speed of at least 420 knotts.	Yes	-	-
07	SR-636 The System platform shall present automatic steering for planned attacks on surface targets involving target position correction in-flight and updating of the targeting system to ensure accurate attacks.	Yes	-	-
08	SR-677 To the maximum extent possible, the System shall embody technology transparency in order to accommodate Platform upgrades without redesign of functionally unrelated areas.	Yes	-	-
09	SR-998 The platform shall be Reliable and Maintainable.	Yes	-	-
Percentage currently forecast to be met		89%		
In-Year Change		-1		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
March 2008	KUR 04	Technical Factors	At Main Gate the KURs were endorsed noting that the operational capability of the aircraft would be delivered incrementally. Following further assessment work KUR 4 was revised to reflect the new requirement. This was endorsed in Operational Capability 2 approval. The revised KUR 4 is forecast to be met.

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

At Initial Gate (December 2002) Advanced Jet Trainer was a component of United Kingdom Military Flying Training System. Within the £39m approved for United Kingdom Military Flying Training System assessment, £2m related to Advanced Jet Trainer and a PFI approach was assumed. In July 2003 a Ministerial Direction was given to conventionally procure Hawk 128 from BAE Systems.

In 2003 a £31m Risk Reduction Contract was placed with BAES to cover risk reduction activities to October 2003. BAE Systems continued to work at risk on Assessment Phase activities up to November 2004 when approval was given for a combined Assessment & Development Phase based on an incremental approach at a Not To Exceed price of £196m and a Not To Exceed completion date of August 2008; the Assessment Phase element of this approval was around £75m. A Design and Development Contract was let to BAE Systems in December 2004.

Main Gate approval was achieved in August 2006 for a Not To Exceed figure of £497m at 80% confidence, compared to Initial Gate approval of £611m at 90%. This approval set the aircraft build standard, definition of In-Service Date, Key System Requirements and aircraft numbers.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	77	14%
Approved Cost at Initial Gate	75	14%
Variation	+2	

5c. Duration of Assessment Phase

Date of Main Gate Approval	August 2006
Date of Initial Gate Approval	November 2004
Length of Assessment Phase [months]	21

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	472	490	497
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	578	593	611

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	February 2009	July 2009	February 2010
Envelope within which capability was expected to be available at Initial Gate	July 2009	February 2010	December 2010

POST MAIN GATE PROJECT SUMMARY SHEET

ASTUTE CLASS SUBMARINE

Integrated Project Team Responsible:

SUBMARINE PRODUCTION

Single Point of Accountability for project capability:

Directorate Equipment Capability (Under Water Effect)

Senior Responsible Owner for broader capability:

Director General Submarines

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

The Astute Class of Attack Submarines is the replacement for the existing Swiftsure and Trafalgar Classes of nuclear attack submarine. The required capability places greater emphasis on land attack, intelligence gathering and special forces operations. GEC-Marconi (now BAE Systems (Submarine Solutions)) 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 in service support of the first three of the Class.

Following BAE Systems' disclosure during 2002 of significant delay and projected cost overrun on the Astute programme, the Department entered into discussions with the company about arrangements to address those difficulties. An Agreement between the Department and BAE Systems was reached in February 2003 which reduced risk (e.g. by separating the design, development, build and acceptance of the First of Class from the production of the second and third submarines), and placed new incentives on the company to perform. The Department agreed to increase its cash funding for Astute by around £430 million, against an increased contribution by the company of £250 million. The Department's contribution is primarily in recognition of the greater than expected difficulty in applying Computer Aided Design techniques to UK submarines. An amendment to the Astute contract to enact the Agreement was signed in December 2003 with boat 1 continuing on a revised Target Cost Incentive Fee arrangement with Boats 2 and 3 pending pricing.

Following the submission of a Review Note in 2007, a further £580m increase was agreed noting that while the programme remained on schedule the design had matured requiring more materials. This was coupled with increased inflationary costs and some programme throughput assumptions at the Barrow site not being borne out. All the programme's anchor milestones have continued to be met and new project management disciplines have been implemented to

achieve better planning and performance monitoring. This has included agreeing a Target Cost Incentive Fee with a maximum price for each of Boats 2 and 3. Astute Hulls 1-3 are progressing through build; the First of Class, ASTUTE, was launched in June 2007 and has commenced commissioning and alongside trials.

1b. Associated projects

Critical to Achievement of ISD		Critical to Initial Gate Requirement	
Project Title	Forecast ISD	Project Title	Forecast ISD
Swiftsure & Trafalgar Class Update Final Phase	2004	-	-
Astute Class Training Service	2007	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
BAE Systems (Submarine Solutions) (formerly 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	United Kingdom Competition

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	3806
Approved Cost at Main Gate	2578
Variation	+1228
In-year changes	+8

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	-34	Technical Factors	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

Date	Variation (£m)	Factor	Explanation
			(+£25m). Prime increase (+£27m). Non Prime decrease (-£28m).
March 2008	+34	Accounting Adjustments and Re-definitions	Re-costing of Non-Attributable items since MPR07 (i.e those items not included in original approval) (+£28m). Shipbuilders Relief correction (+£6m).
March 2008	+8	Accounting Adjustments and Re-definitions	Variation in Cost of Capital charge due to revised cost and delivery profiles.
Historic	-234	Accounting Adjustments and Re-definitions	Increase in shipbuilders relief (-£12m). Cost of Capital effect of adding in creditors and accruals estimates for 2007/08 onwards (-£7m). Re-costing of Non-Attributable items since MPR06 (Items not included in the original approval) (+£51m). Overall increase in Cost of Capital due to cost growth in CDEL, changed profile and delivery values (+£65m). Shipbuilders Relief (-£58m) and Sunk cost corrections (-£3m) made in project account. Decommissioning and Decontamination costs (-£1m). Reallocation of Pension cost increases since MPR05 (-£5m). Overall reduction in Interest on Capital due to changed delivery profile and values (-£16m). Re-costing 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). 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). Difference in variation figures due to revision of Cost of Capital Charge (-£89m). Removal of items wrongly attributed to Astute Approval in previous years (-£41m).

Date	Variation (£m)	Factor	Explanation
Historic	+257	Changed Requirement	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	Contracting Process	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	+1118	Technical Factors	Cost of Capital reduction in respect of removal of Sustainability Costs (-£23m). Sustainability costs of maintaining submarine build capability removed (-£204m). Impact on Cost of Capital of Boat Three delivery advance of one year due to compressed sea trials (-£30m). Option E07UW178S – capability reduction to a 7 boat Astute Programme, taken in Equipment Plan 2007 (-£29m). Option E07UW601S – compress Astute class Boats 1-3 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). Departmental review identified savings opportunities within other elements of nuclear safety cases (-£20m). Increase in cost as a result of the reassessment of risk,

Date	Variation (£m)	Factor	Explanation
			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, cost of capital (-£1m). Prime Contract pricing assumptions and changes to costing (+£19m). Reassessment of risk (+£51m). Reduction of risk on Sonar 2076 programme (-£16m). 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).
Net Variation	+1228		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	2777

2d. Years of peak procurement expenditure

2001/2002	2005/2006

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
-	-	3	3

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	Contract Acceptance Schedule Stage 1 (safe operation and start of operational work up)

3b. Performance against approved in-service date

	Date
Current Forecast ISD	May 2009
Approved ISD at Main Gate	June 2005
Variation (Months)	+47
In-year changes	+6

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
March 2008	+6	Technical Factors	Effect of recent technical problems assessed a 6 month slip in In-Service date.
Historic	+41	Technical Factors	Risk analysis, taking into account opportunities to reduce construction time, predicts a most likely In-Service Date of November 2008 (-1 month). Risk analysis, taking into 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).
Net Variation	+47		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
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.

3e. Operational impact of ISD variation

The Astute delay will result 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.

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Weapon system effectiveness	Yes	-	-
02	Sonar performance	Yes	-	-
03	Hull strength (survivability)	Yes	-	-
04	Top speed	Yes	-	-
05	Endurance	Yes	-	-
06	Acoustic signature	Yes	-	-
07	Complement	Yes	-	-
08	Land attack capability	Yes	-	-
09	Special forces capability	Yes	-	-
Percentage currently forecast to be met		100 %		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
-	-	-	-

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

The Astute Class of submarines is the planned replacement for the Swiftsure and Trafalgar class Submersible Ship Nuclear. In June 1991 (equivalent of Initial Gate) approval was given to proceed with a programme of studies at an estimated cost of £6m (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 £2m (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 £23.5m (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 and Vickers Shipbuilding and Engineering Ltd. The successful outcome of these studies led to Equipment Approvals Committee approval (the equivalent of Main Gate) in March 1997 to place a contract for the design, build and initial support of three Astute Class submarines with GEC Marconi, now BAE Systems.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	29	1%
Approved Cost at Initial Gate	33	1%
Variation	-4	

5c. Duration of Assessment Phase

Date of Main Gate Approval	March 1997
Date of Initial Gate Approval	-
Length of Assessment Phase [months]	-

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	2431	2578	2730
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	-	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	-	June 2005	-
Envelope within which capability was expected to be available at Initial Gate	-	December 2001	-

POST MAIN GATE PROJECT SUMMARY SHEET

BEYOND VISUAL RANGE AIR TO AIR MISSILE

Integrated Project Team Responsible:

BEYOND VISUAL RANGE AIR-TO-AIR MISSILE

Single Point of Accountability for project capability:

Director Equipment Capability (Theatre Airspace)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

The Beyond Visual Range Air-to-Air Missile (also known as Meteor) will provide Typhoon with the capability to combat projected air-to-air threats and sustain air superiority throughout the life of the aircraft. Until Meteor is integrated, Typhoon will be armed with the Advanced Medium Range Air-to-Air Missile, contracted to 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 chase and destroy highly agile manoeuvring targets) and robust performance against countermeasures.

This is a collaborative programme with: Germany, Spain and Italy (for Typhoon), Sweden (for Gripen) and France (for Rafale). The contract for the demonstration, manufacture and support of Meteor was placed with MBDA UK Ltd on 23 December 2002. Only the United Kingdom has committed to production; the contract includes production options that can be exercised by partner nations during the demonstration programme. The unavailability of Typhoon aircraft for development and integration trials has delayed the development programme. This has therefore had to be "realigned", with Tornado F3 introduced as the primary trials platform, supplemented by the additional use of a Gripen (with the aspiration of re-introducing Typhoon into the programme as missile development becomes more mature).

The Department has reviewed the Beyond Visual Range Air-to-Air Missile programme in 2007/08 in the light of the changing strategic environment and has decided to delay the integration of Meteor onto Typhoon as this capability is no longer required as early as previously foreseen. Although the Beyond Visual Range Air-to-Air Missile programme remains well within its Approved Cost at Main Gate, the review work has shown that previously projected savings could not be delivered to the extent estimated.

1b. Associated projects

Critical to Achievement of ISD		Critical to Initial Gate Requirement	
Project Title	Forecast ISD	Project Title	Forecast ISD
Typhoon Future Capabilities Programme	Typhoon Future Capability Programme 1 - 2012	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
MBDA UK Ltd (Meteor)	Demonstration (all 6 nations) and Manufacture (United Kingdom only at present)	Firm price up to June 2007 (Demonstration), Firm Price up to June 2006 (Manufacture), Fixed Price thereafter subject to Variation of Price	International competition
Raytheon Missile Systems (Advanced Medium Range Air-to-Air Missile)	Manufacture to In-Service	Firm price	Non-competitive

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	1279
Approved Cost at Main Gate	1362
Variation	-83
In-year changes	+111

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	+3	Accounting Adjustments and Re-definitions	Correction of treatment in Contracted Out Services VAT from previous years to align with Main Gate Approval (+£3m).
January 2008	-114	Changed Requirement	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).
January 2008	+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).
January 2008	+51	Accounting Adjustments and Re-definitions	Revision of Cost of Capital charge due to revised delivery profile (+£51m).
January 2008	+113	Procurement Strategy	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

Date	Variation (£m)	Factor	Explanation
			activities (+£5m). Cost associated with UK's contractual commitment to minimum Production quantities (+£57m).
January 2008	+3	Exchange Rate	Revaluation of foreign currency assumptions on Meteor Prime Contract (+£3m).
Historic	-6	Accounting Adjustments and Re-definitions	Change in assumption in regard to recovery of VAT (+£9m), Derivation of approved cost on resource basis (-£4m), Difference in variation due to revision of Cost of Capital charge (-£11m).
Historic	-72	Changed Budgetary Priorities	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 Advanced Medium Range Air-to-Air Missile 120Bs (-£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). 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

Date	Variation (£m)	Factor	Explanation
			Meteor onto Typhoon (-£9m), Production of Meteor Telemetred Operational Missiles (-£1m), In Service Reliability Demonstration support (-£3m). Meteor Technical Support (-£2m). Minor miscellaneous Meteor items (-£1m).
Historic	-6	Changed Requirement	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).
Historic	-16	Contracting Process	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), and effect of revalidation on Cost of Capital Charge (-£8m).
Historic	+27	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).
Historic	+1	Procurement Strategy	Revaluation of UK's share of Government Furnished Equipment / Government Furnished Facilities requirements (-£20m). Additional funding required for integration of Advanced Medium Range Air-to-Air Missile AIM 120C onto Typhoon (+£82m). Gripen Trial (+£2m). Realism measure on funding for integration of Advanced Medium Range Air-to-Air Missile AIM 120C onto Typhoon (-£65m). Decrease in UK's share of Development (-£30m). Increase of UK's share of development through transfer of work share from Germany (+£31m) and UK share of Government Furnished

Date	Variation (£m)	Factor	Explanation
			Equipment (+£1m).
Historic	-122	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the highest acceptance (90%) estimates at Main Gate (-£129m), Variation due to revised approval figures (+£7m).
Net Variation	-83		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	467

2d. Years of peak procurement expenditure

2010/2011	2012/2013

2e. Unit production cost*

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
1.0	2.0	***	***

* UPC covers Meteor missile only.

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	**Original ISD Definition:** Achievement of an operational capability with *** missiles and supporting infrastructure. At MPR 2007 forecast ISD was August 2013, against the approved ISD at Main Gate of August 2012. **MPR 08 Definition:** The ISD definition has been redefined following a review of the programme to reflect a two-stage approach to delivering the capability. • **ISD 1:** (Platform Ready): A fully developed missile standard ready for delivery and platform integration, having demonstrated achievement of ISD 1 Key User Requirements • **ISD 2:** (Typhoon Meteor Capability): The first Front Line Unit is declared Operational with *** missiles and having demonstrated achievement of ISD 2 Key User Requirements. **Reason for change:** The BVRAAM programme has been reviewed, and has been redefined in the light of changes to the perceived threat and to achieve a more cost-effective integration onto Typhoon. The partition of ISD is a better measure of the progressive delivery of BVRAAM capability.

3b. Performance against revised ISD

Revised ISD 1

	Date
Current Forecast ISD	August 2012

Revised ISD 2

	Date
Current Forecast ISD	July 2015

3c. Historic Performance against original ISD framework

Date	**Variation (months)**	**Factor**	**Explanation**
Historic	+15	Change in associated project	Typhoon integration delays cannot be absorbed and uncertainty over Typhoon Future Capability Programme (+15 months).
Historic	+8	Contracting Process	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).
Historic	-11	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the highest (90%) estimates approved at Main Gate (-11 months).
Net Variation	+12		

3d. Cost resulting from ISD variation

Type of Cost/ Saving	Cost £m	Saving £m	Explanation
Change in associated project	+5	-	Extension to the life of the current Advanced Medium Range Air-to-Air Missile variant until Meteor ISD 2 is achieved (+£5m).
Net Variation	+5	-	

3e. Operational impact of ISD variation

Extend 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's anti-air capability for the period between Typhoon Operational Employment Date and Meteor ISD. Whilst the ISD 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 Range Air to Air Missile by Typhoon extends beyond Meteor ISD. There is some risk that part of the Advanced Medium Range Air to Air Missile stocks will not endure until the revised ISD and hence we may fall below the minimum required stockpile liability, although this cannot be confirmed at present.

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements*

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Multiple Target Capability	Yes	-	-
02	Kill Probability	Yes	-	-
03	Enhanced Typhoon Survivability	Yes	-	-
04	Typhoon Compatibility	Yes	-	-
05	Minimum Air Carriage Life	Yes	-	-
06	Reliability	Yes	-	-
07	Support	Yes	-	-
Percentage currently forecast to be met		100 %		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
-	-	-	-

* KURs are Meteor only.

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of 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, 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 the 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 Matra BAe Dynamics Meteor missile had been selected.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	20	2%
Approved Cost at Initial Gate	14	1%
Variation	+6	

5c. Duration of Assessment Phase

Date of Main Gate Approval	May 2000
Date of Initial Gate Approval	October 1995
Length of Assessment Phase [months]	55

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	1198	1240	1362
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	1226	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	June 2010	September 2011	August 2012
Envelope within which capability was expected to be available at Initial Gate	-	-	March 2005

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POST MAIN GATE PROJECT SUMMARY SHEET

FALCON

Integrated Project Team Responsible:

THEATRE AND FORMATION COMMUNICATIONS SYSTEMS

Single Point of Accountability for project capability:

Director Equipment Capability (Command, Control & Information Infrastructure)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

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.

The programme comprises four increments of which only Increment A is reflected in this report. 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. Falcon will require significantly less manpower to operate than the system being replaced.

Following Main Gate approval for Increment A in March 2006, the Demonstration and Manufacture contract was awarded to BAE Systems Insyte. Negotiations to acquire the MAN 6 Tonne Support Vehicle have been completed. The Increment A Equipment Acceptance Trial, currently contracted for early 2009, will be a key milestone in the system's development.

Falcon Increment C, providing capability for Royal Air Force deployed operating bases, is the same equipment as contracted under Falcon Increment A. Falcon Increment C achieved Main Gate approval in July 2007 and was added as a Falcon Increment A contract amendment in September 2007.

Increments B and D are planned to provide tactical communication systems for the more mobile Division/Brigade level (Increment B) and for littoral warfare and deep support roles (Increment

D). Further Falcon Increments will be subject to separate approvals.

1b. Associated projects

Critical to Achievement of ISD		Critical to Initial Gate Requirement	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
BAE Systems Insyte	Demonstration and Manufacture	Firm price	UK competition

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	291
Approved Cost at Main Gate	324
Variation	-33
In-year changes	-1

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	+1	Accounting Adjustments and Re-definitions	Correction of treatment in Contracted Out Services VAT from previous years to align with Main Gate Approval
May 2007	-2	Technical Factors	Costs saved due to Falcon Vehicle change identified by contract study
Historic	-5	Changed Budgetary Priorities	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 EP07 programme plans (-£1m).
Historic	-3	Changed Requirement	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	Contracting Process	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	-17	Risk Differential	Difference between the risk allowed for in the most likely (50%) and highest acceptable (80%) estimates at Main Gate.
Net Variation	-33		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	82

2d. Years of peak procurement expenditure

2008/2009	2011/2012

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
-	-	-	-

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	Minimum scaling to provide wide and local area deployable communications that will support a non-enduring Medium Scale UK Framework Nation deployment short of war fighting.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	June 2010
Approved ISD at Main Gate	February 2011
Variation (Months)	-8
In-year changes	0

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
Historic	-8	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the highest acceptable (90%) estimates at Main Gate.
Net Variation	-8		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
-	-	-	-

3e. Operational impact of ISD variation

-

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Falcon shall meet the Information Exchange Requirements of its User communities	Yes	-	-
02	Falcon shall have the mobility necessary to support its User communities	Yes	-	-
03	Falcon shall be sufficiently flexible so resources can be proportionally matched to the scale of effort required during all phases of an operation	Yes	-	-
04	Falcon shall support the passage of secure information at a level appropriate to its protective marking	Yes	-	-
05	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	-	-
06	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	-	-
07	Falcon shall minimise the manpower and training burden in order to provide efficient support to operations	Yes	-	-
08	Falcon shall survive in a hostile physical and electronic environment	Yes	-	-
09	Falcon shall be sustainable on operations	Yes	-	-
Percentage currently forecast to be met		100 %		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
-	-	-	-

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of 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); and 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 remains 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 ISD by up to 4 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.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	31	9.7%
Approved Cost at Initial Gate	30	9.4%
Variation	+1	

5c. Duration of Assessment Phase

Date of Main Gate Approval	March 2006
Date of Initial Gate Approval	July 2002
Length of Assessment Phase [months]	44

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	290	308	324
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	212	-	255

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	October 2009	June 2010	February 2011
Envelope within which capability was expected to be available at Initial Gate	June 2006	-	December 2007

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POST MAIN GATE PROJECT SUMMARY SHEET

FUTURE JOINT COMBAT AIRCRAFT

Integrated Project Team Responsible:

JOINT COMBAT AIRCRAFT

Single Point of Accountability for project capability:

Director Equipment Capability (Deep Target Attack)

Senior Responsible Owner for broader capability:

Carrier Strike

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

Following UK participation in the Concept Demonstration Phase of the programme, the US Joint Strike Fighter was selected to meet the Joint Combat Aircraft requirement. The Strategic Defence Review confirmed this requirement to provide the Joint Force 2000 (joint command for Harrier Forces) with a multi-role fighter/attack aircraft to replace the Royal Navy Sea Harrier and the Royal Air Force Harrier GR7/9. A tailored Main Gate Demonstration approval was obtained in January 2001 for participation in the System Development and Demonstration phase to the value of £1.3bn, along with £600m for related non-System Development and Demonstration work, leading to signature that month by UK and US 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 Witney for the F135 engine and GE/Rolls Royce Fighter Engine Team for the F136 engine. Whilst other partners joined the programme at Level 2 and 3 entry arrangements, only US and UK requirements drive the System Development and Demonstration baseline solution.

In September 2002 the UK selected the Short Take Off and Vertical Landing Joint Strike Fighter variant to meet our 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 and 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, reporting of this phase will commence in MPR09 when the UK plan to purchase the first aircraft, allowing the UK to continue to influence all aspects of the Joint Strike Fighter programme as it moves into a new phase.

The flight test programme commenced on 15 December 2006 with the successful first flight of the first Conventional Take-Off and Land aircraft. The first Short Take Off and Vertical Landing aircraft is currently planned to fly in Summer 2008. Continued participation in the Joint Strike Fighter programme will deliver a Block 3 aircraft with Air-to-Air and Air-to-Ground capabilities to the UK.

Two Key User Requirements remain at risk:

KUR04 - Mission Performance: In July 2006 the Investment Approvals Board directed that Ship-borne Rolling and Vertical Landing should be included in future development of the Joint Combat Aircraft design to mitigate the risk to the Vertical Land Bring Back capability.

KUR06 – Logistic Footprint: Performance remains marginally better than requirement, although due to very narrow margin this KUR remains at risk. Work is ongoing with Lockheed Martin to drive down Logistic Footprint to ensure it remains within specification as the air system matures throughout the System Development and Demonstration phase.

1b. Associated projects

Critical to Achievement of ISD		**Critical to Initial Gate Requirement**	
Project Title	Forecast ISD	Project Title	Forecast ISD
Future Aircraft Carrier	The ISD for this project will be set when it achieves its Main Gate approval	-	-

1c. Procurement strategy

Contractor(s)	**Contract Scope**	**Contract Type**	**Procurement Route**
Lockheed Martin	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 with Lockheed Martin.)

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	1834
Approved Cost at Main Gate	2236
Variation	-402
In-year changes	-24

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	-18	Exchange Rate	System Development and Demonstration contribution against MPR07 Versus MPR08 Exchange rate: 2007/08 (-£12m), 2008/09 to 2013/14 (-£6m).
March 2008	-6	Changed Budgetary Priorities	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). Cost of Capital charge as a result of above realignment (-£5m).
Historic	+12	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). Interest on capital correction (MPR02 +£46m;

Date	Variation (£m)	Factor	Explanation
			MPR03 -£12m). New Defence Procurement Agency requirement to include Price Forecasting Group costs within the equipment plan (+£1m). Additional interest on capital from new Defence Procurement Agency IT accrual methodology (+£1m). Accounting reclassification of feasibility studies (-£2m). Difference in variation figures due to revision of Cost of Capital Charge (-£16m). **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). Adjustment of treatment of Cost of Capital Charges calculation (+£1m).
Historic	+286	Changed Budgetary Priorities	**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). Increase in Cost of Capital Charge resulting from change of planning assumption on delivery of Intangible assets (+£48m). 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). Fewer UK

Date	Variation (£m)	Factor	Explanation
			studies than originally planned (MPR02 -£1m; MPR03 -£6m). 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). **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	-499	Changed Requirement	**MPR06:** Reviews of the external missile systems for Joint Combat Aircraft resulted in the removal of the requirement for integrating externally mounted Brimstone (-£41m) and Advanced Short Range Air to Air Missile (-£49m), and Paveway II and III (-£1m) capabilities. Further UK participation in the Joint Integrated Test Force to reflect UK acceptance into service strategy (+£20m). **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 Joint Strike

Date	Variation (£m)	Factor	Explanation
			Fighter programme re-alignment (-£368m) and associated increase Cost of Capital charge (+£44m).
Historic	-88	Exchange Rate	**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	+113	Technical Factors	**MPR07:** Re-alignment of programme now included in Development - Ship-borne Rolling and Vertical Landing (+£55m). **MPR05:** Reduction of Risk line as a result of programme delays (-£29m). **MPR 04**: Re-examination of risk within the overall programme. (+£87m).
Historic	-202	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the approved figures at Main Gate (-£213m). Variation due to revised approval figures (+£11m).
Net Variation	-402		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	1167

2d. Years of peak procurement expenditure

2005/2006	2007/2008

2e. Unit production cost[*]

Unit Production Cost (£m)		Quantities Required	
at Main Gate	**Current**	**at Main Gate**	**Current**
-	-	-	-

[*] In order to match the US procurement cycle the JCA Main Gate was tailored for Development only. Unit Production Cost approval will be sought as part of MG UK production approval.

SECTION 3: PROJECT TIMESCALE*

3a. Definition of in-service date

ISD Definition:	**Original ISD Definition:** 8 embarked aircraft at Readiness 2 (2-5 days notice to move). **MPR08 ISD Definition:** 6 embarked aircraft at Readiness 2 (2-5 days notice to move). **Reason for change:** to align with the US acquisition framework and definitions.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	-
Approved ISD at Main Gate	The tailored Demonstration Main Gate noted but did not approve ISD
Variation (Months)	-
In-year changes	-

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
-	-	-	-
Net Variation	-		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
-	-	-	-

3e. Operational impact of ISD variation

-

* The In Service Date (ISD) approval will be sought as part of the incremental Production Approval strategy.

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Survivability	Yes	-	-
02	Interoperability	Yes	-	-
03	Combat radius	Yes	-	-
04	Mission performance	Yes	Yes	-
05	Mission reliability	Yes	-	-
06	Logistic footprint	Yes	Yes	-
07	Sortie generation rates	Yes	-	-
Percentage currently forecast to be met		100 %		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
Historic	KUR 04	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	KUR 06	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.

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of 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 US Prime Contractors (Boeing and Lockheed Martin) designing weapons systems 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 effective grounds. The options were US F/A18E aircraft, French Rafale M, a "navalised" Eurofighter and an advanced Harrier.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	144	7.3%
Approved Cost at Initial Gate	150	7.6%
Variation	-6	

5c. Duration of Assessment Phase

Date of Main Gate Approval	January 2001
Date of Initial Gate Approval	-
Length of Assessment Phase [months]	-

5d. Cost boundaries at Initial Gate and Main Gate Approvals*

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	1971	2034	2236
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	-	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate†	-	December 2012	April 2014
Envelope within which capability was expected to be available at Initial Gate	-	December 2012	-

* Three point estimates for the Production Phase have yet to be determined, as costs are dependant on the final aircraft numbers.

† For Main Gate Development approval, ISD was noted, not approved.

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POST MAIN GATE PROJECT SUMMARY SHEET

FUTURE LYNX

Integrated Project Team Responsible:

LYNX

Single Point of Accountability for project capability:

Director Equipment Capability (Air and Littoral Manoeuvre) – Battlefield Reconnaissance Helicopter Requirement

Director Equipment Capability (Above Water Effects) – Surface Combatant Maritime Rotorcraft Requirement

Senior Responsible Owner for broader capability:

Capability Manager (Battlespace Manoeuvre)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

The Future Lynx capability was developed to meet the requirement for a dedicated small helicopter for use in both the land and maritime environments. Future Lynx is a single-source, combined helicopter procurement programme with Westland Helicopters Ltd which follows More Effective Contracting principles. Project approval is for 80 aircraft, with funding for 70 held by the Integrated Project Team, and funding for a further 10 held by the Helicopter Strategy Team. 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 to replace the current Lynx fleet which is reaching its life end. The contract also includes costed options for five more platforms of each type. Preliminary and Interim Critical Design Reviews have been successfully achieved in January and October 2007 respectively, and machining of airframe parts commenced in October 2007. Significant future milestones are: Air Vehicle Critical Design Review in April 2008, Interim Phase Review in November 2008 and First Flight in November 2009. Through-life training & support solutions are to be 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 given for the Training Service Initial Gate Business Case in August 2007 which is based on the 4-stage PFI Treasury Approval process.

The project has two ISDs as it is delivering two different capabilities. The first ISD is for the Battlefield Reconnaissance Helicopter and is reported in Section 3. The current forecast ISD for Surface Combatant Maritime Rotorcraft is January 2015. This is defined as one deployable aircraft with logistic support, trained aircrew and groundcrew in place.

1b. Associated projects

Critical to Achievement of ISD		Critical to Initial Gate Requirement	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
Westland Helicopters Ltd, Yeovil	Demonstration to Manufacture	Target cost incentive fee with a maximum price	Non-competitive

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	1911
Approved Cost at Main Gate	1966
Variation	-55
In-year changes	+2

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	+2	Changed Budgetary Priorities	Increased cost of capital due to increased year end outturn ahead of schedule.
Historic	+8	Accounting Adjustments and Re-definitions	Increase in cost of capital due to reprofiling of lifetime expenditure, delivery schedule, updated accrual model and subsequent capitalisation of RDEL costs approved at Main Gate.
Historic	-65	Risk Differential	Difference between the risk allowed for in the most likely (50%) figure and highest acceptable (Not to Exceed) estimates at Main Gate.
Net Variation	-55		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	181

2d. Years of peak procurement expenditure

2010/2011	2011/2012

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
At Main Gate	Current	at Main Gate	Current
13.7	13.4	35 Surface Combatant Maritime Reconnaissance	35 Surface Combatant Maritime Reconnaissance
12.7	12.4	45 Battlefield Reconnaissance Helicopter	45 Battlefield Reconnaissance Helicopter
46.8	47.0	2 Training Simulators	2 Training Simulators

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	ISD for Battlefield Reconnaissance Helicopter is defined as 4 force elements at readiness to deploy on a small scale focussed intervention operation

3b. Performance against approved in-service date

	Date
Current Forecast ISD	January 2014
Approved ISD at Main Gate	August 2014
Variation (Months)	-7
In-year changes	-3

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
August 2007	-3	Procurement Strategy	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 ISD in line with the ISD and the three months recovered.
Historic	+3	Procurement Strategy	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 ISD can be declared and it was considered prudent to declare an ISD slip of 3 months while mitigation work matured.
Historic	-7	Risk Differential	Difference between the risk allowed for in the most likely (50%) figure and highest acceptable (Not to Exceed) estimates at Main Gate.
Net Variation	-7		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
-	-	-	-

3e. Operational impact of ISD variation

-

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
Battlefield Reconnaissance Helicopters				
KUR 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	-	-
KUR 02	The user requires the capability to acquire, designate targets and direct the full spectrum of joint fires via network enabled communications.	Yes	-	-
KUR 03	The user shall be provided with a capability that is available for the required sustained level of operational effect.	Yes	-	-
KUR 04	The user shall be able to deliver operational capability with a high likelihood of survival.	Yes	-	-
KUR 05	The user shall be provided with a capability that can interoperate with relevant military and civil authorities	Yes	-	-
KUR 06	The user shall have a capability that can operate within defined natural and man-made environmental conditions.	Yes	-	-
KUR 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	-	-
KUR 08	The user shall be provided with a capability that can be deployed worldwide	Yes	-	-
Surface Combatant Maritime Rotorcraft				
KUR 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	Yes	-

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
KUR 02	The user requires the capability to acquire, designate targets and direct the full spectrum of joint fires via network enabled communications.	Yes	-	-
KUR 03	The user shall be able to autonomously and co-operatively attack using appropriate rapid and flexible fires with the joint battlespace.	Yes	-	-
KUR 04	The user requires a vertical lift capability to deploy and support joint forces, as operationally effective units, from land or sea bases.	Yes	-	-
KUR 05	The user shall be provided with a capability that is available for the required sustained level of operational effect.	Yes	-	-
KUR 06	The user shall be able to deliver operational capability with a high likelihood of survival.	Yes	-	-
KUR 07	The user shall be provided with a capability that can interoperate with relevant military and civilian authorities	Yes	-	-
KUR 08	The user shall have a capability that can operate within defined natural and man-made environmental conditions	Yes	-	-
KUR 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	-	-
KUR 10	The user shall be provided with a capability that can be deployed worldwide	Yes	-	-
Percentage currently forecast to be met		100%		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
February 2008	Surface Combatant Maritime Reconnaissance KUR 01	Technical Factors	One of the ten elements of this KUR is considered to be at risk. The contracted position, with respect to the installed radar detection performance, does not meet the KUR. Work is ongoing between the Integrated Project Team and Agusta Westland to evaluate the extent of the shortfall.

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of 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 Future Lynx 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 & Manufacture phase.

Surface Combatant Maritime Rotorcraft:
A single tender contract was placed with Westland Helicopter Ltd to develop and de-risk their Future Lynx 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 Future Lynx proposal on a single tender basis - with an option to switch from single tender to competition should the Assessment Phase indicate that the Future Lynx solution was unlikely to be cost effective. The second strategy was the selected one.

The result of the Assessment Phase considered the Future Lynx to be the most likely of the options to deliver the required capability by the ISD. 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.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	57	2.9%
Approved Cost at Initial Gate	59	2.9%
Variation	-2	

5c. Duration of Assessment Phase

Date of Main Gate Approval	June 2006
Date of Initial Gate Approval	December 2001
Length of Assessment Phase [months]	54

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	1760	1901	1966
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	1308	1351	1637

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	May 2013	January 2014	August 2014
Envelope within which capability was expected to be available at Initial Gate	-	-	September 2006

POST MAIN GATE PROJECT SUMMARY SHEET

MERLIN CAPABILITY SUSTAINMENT PROGRAMME

Integrated Project Team Responsible:

MERLIN

Single Point of Accountability for project capability:

Director Equipment Capability (Under Water Effect)

Senior Responsible Owner for broader capability:

Capability Manager (Battlespace Manoeuvre)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

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 approach taken is one of system level technology refresh of the key mission and air vehicle avionic systems. A core feature of the programme is the implementation of a flexible open architecture that will deliver lower cost of ownership, enable cost-effective future capability insertion and compliance with the latest safety legislation. The Demonstration & Manufacture contract has been placed with Lockheed Martin Aero Systems Integration Corporation, UK.

The programme includes the necessary updates to the support and training environments. Towards the end of the Assessment Phase, the programme was brought into the Future Rotorcraft Capability Programme. The Future Rotorcraft Capability programme provided funding to support a transition phase (six months) that enabled critical path Merlin Capability Sustainment Programme activities to continue while work continued to produce a coherent rotorcraft programme across the MoD. A further transition phase (six months), which was subsequently included within the Merlin Capability Sustainment Programme Main Gate approval, sustained the programme momentum while the Merlin Capability Sustainment Programme Demonstration & Manufacture programme was re-crafted to support the wider Future Rotorcraft Capability objectives and the subsequent approval process.

The Main Gate Business Case was amended to reflect the impact of Future Rotorcraft Capability and submitted to Investment Approvals Board in September 2005. HM Treasury and Ministerial approval was granted in December 2005 with the Demonstration & Manufacture contract awarded shortly thereafter. The formal approval followed in March 2006.

The programme commenced at the start of 2006 and remains on track and within budget.

The Preliminary Design Review was completed successfully on schedule in January 2008 and the programme is currently focussed on working towards the system Critical Design Review in September 2008. At Main Gate, the Investment Approvals Board acknowledged that the current requirement was for 38 aircraft but only approved the initial procurement of 30. This was to allow wider Future Rotorcraft Capability studies on higher utilisation of aircraft to complete.

A refresh of the operational analysis and the completion of Future Rotorcraft Capability studies has led to a Review Note that will be submitted in the second quarter of 2008 for approval. This will be for the addition of up to an additional 8 aircraft, at an approximate cost of £65m, delivered as part of the Merlin Capability Sustainment Programme.

1b. Associated projects

Critical to Achievement of ISD		**Critical to Initial Gate Requirement**	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	**Contract Scope**	**Contract Type**	**Procurement Route**
Lockheed Martin Aero Systems Integration Corporation (Significant (60% by value) sub-contract with AgustaWestland, Yeovil	Demonstration and Manufacture	Firm price until 2010, then fixed price subject to Variation of Price	Non-competitive prime but ~60% competition at sub contract level (across both Prime and AgustaWestland contracts)

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	832
Approved Cost at Main Gate	840
Variation	-8
In-year changes	0

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
Historic	-6	Accounting Adjustments and Re-definitions	Delivery of intangible development expenditure now coincides with the first production aircraft delivery. Previously it had been with the fifth aircraft, a year later (-£6m).
Historic	+1	Changed Budgetary Priorities	£15m of CDEL funding was brought forward during EP07 which has resulted in a subsequent increase in the Cost of Capital (+£1m).
Historic	-3	Risk Differential	Difference between the risk and uncertainty allowed for in the 50% confidence and the approved Not To Exceed figures at Main Gate.
Net Variation	-8		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	122

2d. Years of peak procurement expenditure

2009/2010	2010/2011

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
9.6	9.6	30	30

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	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 6 Merlin Capability Sustainment Programme aircraft delivered to Royal Naval Air Station (RNAS) Culdrose. Logistic support available to enable the operation and maintenance of all the delivered aircraft. Sufficient Trained personnel to achieve required capability.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	February 2014
Approved ISD at Main Gate	September 2014
Variation (Months)	-7
In-year changes	0

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
Historic	-7	Risk Differential	Difference between the risk and uncertainty allowed for in the 50% confidence and the approved Not To Exceed figures at Main Gate
Net Variation	-7		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
-	-	-	-

3e. Operational impact of ISD variation

-

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Attack. The user shall be able to neutralise confirmed Anti-submarine Warfare Threats.	Yes	-	-
02	Deployable Search and Rescue (Maritime Only). The user shall be able to conduct naval Search and Rescue.	Yes	-	-
03	Environment. The user shall be able to operate in environments world-wide.	Yes	-	-
04	Find. The user shall be able to acquire situational awareness of the Under Water Effect and Above Water Effect.	Yes	-	-
05	Interoperability. The user shall be able to exchange tactical information between authorities and units.	Yes	-	-
06	Lift. The user shall be able to move personnel and material over land and sea.	Yes	-	-
07	Logistical. The user shall be able to easily logistically support the Merlin Capability Sustainment Programme.	Yes	-	-
08	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	Operational Locations. The solution shall be able to operate to and from host platforms when required.	Yes	-	-
10	Survivability. The user shall have force elements capable of surviving in hostile and warfighting environments.	Yes	-	-
Percentage currently forecast to be met		100 %		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
-	-	-	-

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

Assessment Phase

Following approval of the Merlin Capability Sustainment Programme Initial Gate Business Case, the Assessment Phase contract was placed on 3rd 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 Requirements Document.
- Production of System and Sub-System 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 & 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 Future Lynx should be on a 50/50, 30/70, 30/70, 30/70 basis respectively. As a result of this financial rebalancing the Merlin Capability Sustainment Programme In-Service Date is 22 months (50% Confidence) later than anticipated and the estimated cost of this delay led to an overall increase in the Equipment Program for Merlin Capability Sustainment Programme of £92m at outturn.

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 to 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.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	27*	3%
Approved Cost at Initial Gate	19†	2%
Variation	+8	

5c. Duration of Assessment Phase

Date of Main Gate Approval	March 2006
Date of Initial Gate Approval	May 2003
Length of Assessment Phase [months]	34

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	828	837	840
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	928	1007	1092

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	August 2013	February 2014	February 2016
Envelope within which capability was expected to be available at Initial Gate	March 2009	-	December 2009

* Includes the costs for the Assessment Phase and the first Transition Phase

† Only reflects the Initial Gate approval. It does not reflect the additional scope of work completed under the first approval for Transition Phase. Both elements completed within their approval budgets. Actual approval is £29m

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POST MAIN GATE PROJECT SUMMARY SHEET

MODERNISED TARGET ACQUISITION DESIGNATION SIGHT / PILOTS NIGHT VISION SENSOR

Integrated Project Team Responsible:

ATTACK HELICOPTER

Single Point of Accountability for project capability:

Director Equipment Capability (Air and Littoral Manoeuvre)

Senior Responsible Owner for broader capability:

Capability Manager (Battlespace Manoeuvre)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

In 2004, the Apache Army Helicopter Mk1 Support Reappraisal Project identified options to achieve significant Whole Life Cost savings over the service life of the aircraft to 2031. One of these options was the Modernised Target Acquisition and Designation Sight programme. The Modernised Target Acquisition and Designation Sight Programme upgrades four existing systems on the Apache Army Helicopter Mark 1 with the aim of reducing the aircraft's Whole Life Cost through overcoming obsolescence and improving reliability. In addition, the Modernised Target Acquisition and Designation Sight Programme will increase operational capability through the introduction of second generation infra red technology in the Modernised Target Acquisition and Designation Sight and the Modernised Pilot's Night Vision Sensor. The Modernised Target Acquisition and Designation Sight, Pilot's Night Vision Sensor and Target Acquisition and Designation Sight Electronic Display And Control upgrades are already fielded with the United States Army. The Improved Helmet Display and Sighting System for the 21st Century is scheduled to be fielded with the United States Army at a later date.

Trials of the Modernised Target Acquisition and Designation Sight upgrade on British Army Apache Army Helicopter Mark 1s are ongoing with two aircraft undergoing trials at AgustaWestland Helicopters Ltd, Yeovil. A further aircraft was modified in early 2008 to ensure compatibility with Operation HERRICK theatre entry standard modifications. Aviation Training International Ltd are also under contract to provide the associated upgrades to the Attack Helicopter Training System. Modification of the wider Apache Army Helicopter Mk1 fleet and the enhancement of the Attack Helicopter Training System to include Modernised Target Acquisition and Designation Sight training is on schedule to commence in the last quarter of 2008 to support an In-Service Date of April 2009.

1b. Associated projects

Critical to Achievement of ISD		Critical to Initial Gate Requirement	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
AgustaWestland Helicopters Ltd (formally Westland Helicopters Ltd)	Assessment to In-Service	Firm price	Non-competitive
Lockheed Martin Overseas Corporation	Assessment to In-Service	Firm price	Non-competitive
Aviation Training International Ltd	Assessment to In-Service	Firm price	Non-competitive

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	228
Approved Cost at Main Gate	245
Variation	-17
In-year changes	0

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	+3	Accounting Adjustments and Re-definitions	Inclusion of Contracted Out Services Value Added Tax in total forecast cost figure.
March 2008	-2	Accounting Adjustments and Re-definitions	Inclusion of projected year end accruals for the remainder of the project. This change reduces the annual Net Assets balance and the subsequent Cost of Capital charge.
March 2008	+2	Accounting Adjustments and Re-definitions	Costs associated with the emulator upgrade now included in forecast costs for the Modernised Target and Acquisition Designation Sight project.
March 2008	-1	Technical Factors	Saving due to Aviation Training International Ltd turret upgrade taking place in United Kingdom utilising core resource already costed for against the Special Repair Agency, and not in United States as previously assumed.
March 2008	-1	Accounting Adjustments and Re-definitions	Removal of risk provision relating to potential impact of VAT treatment decision no longer required following HM Revenue and Customs decision.
September 2007	-24	Accounting Adjustments and Re-definitions	Confirmation received from HM Revenue and Customs that zero rate of Value Added Tax applies to this upgrade
August 2007	+23	Accounting Adjustments and Re-definitions	Increase in forecast costs to reflect the possibility that Value Added Tax "zero rate" might be applied to this upgrade, which had previously been assumed to be 'zero rated' for VAT purposes.
Historic	+3	Accounting Adjustments and Re-definitions	The increase is due to inclusion of Indirect Resource Departmental Expenditure Limit (Cost Of Capital Charge) & inclusion of

Date	Variation (£m)	Factor	Explanation
			£1m sunk costs on de-risking work.
Historic	-20	Contracting Process	Contracts awarded following negotiation in 2004 with Westland Helicopters Ltd and to Aviation Training International Ltd for the associated training update at prices which were less than the pre-contract forecast.
Net Variation	-17		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	82

2d. Years of peak procurement expenditure

2008/2009	2009/2010

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
-	-	70	70

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	4 aircraft retrofitted with Modernised Target Acquisition and Designation Sight.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	April 2009
Approved ISD at Main Gate	December 2009
Variation (Months)	-8
In-year changes	0

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
Historic	-2	Technical Factors	Joint risk analysis, taking into account closure and reduced probability of a number of risks, predicts a most likely in-service date of April 2009.
Historic	+6	Contracting Process	Following commercial negotiation that took longer than anticipated, contracts were awarded with Westland Helicopters Ltd and to Aviation Training International Ltd for the associated training update. The delay has resulted in the In-Service Date being delayed by 6 months
Historic	-12	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the highest acceptable (90%) estimates at Main Gate.
Net Variation	-8		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
-	-	-	-

3e. Operational impact of ISD variation

-

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Operational Capability – The user shall be provided with an operational capability not less than that set out in the Apache Army Helicopter Mk1 Concept of Use throughout the life of the Apache Army Helicopter Mk 1 Weapon System and Support Equipment.	Yes	-	-
02	Operational Availability - The user shall be capable of achieving not less than 75% of the Aircraft Operating Fleet available (fit for purpose and in an operable condition) during each Operational Day.	Yes	-	-
03	Target Flying Rates - The user shall be able to achieve the annual target flying rates as defined in the 4* Customer Supplier Agreement between Chief Defence Logistics and Commander in Chief Land.	Yes	-	-
04	Sustainability - The user shall be able to sustain the Apache Army Helicopter Mk1 Weapon System and Support Equipment in accordance with the Force Elements at Readiness and Concurrency assumptions.	Yes	-	-
05	Interoperability - The user shall be able to operate and support the Apache Army Helicopter Mk1 Weapon System and Support Equipment concurrent with all UK Service helicopters.	Yes	-	-
06	Airworthiness - The user shall be able to operate the Apache Army Helicopter Mk1Weapon System and Support Equipment in accordance with all extant airworthiness standards and policies.	Yes	-	-
07	Health and Safety - The user shall be able to operate and support the Apache Army Helicopter Mk1 Weapon System and Support Equipment in accordance with extant health and safety policies and regulations.	Yes	-	-
Percentage currently forecast to be met		100%		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
-	-	-	-

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

The Modernised Target Acquisition and Designation Sight project was initiated as a result of the Assessment Phase of the Attack Helicopter Support Reappraisal Project. The Attack Helicopter Support Reappraisal Project sought to achieve £738m (hard target) Whole Life Cost saving over the service life of the aircraft to 2031. The Attack Helicopter Support Reappraisal Project was structured in two phases, an analysis of "spend to save" Investment Options and an improved Future Support Arrangement. The Modernised Target Acquisition and Designation Sight Programme was estimated to contribute whole life cost savings of £464m.

5b. Cost of the Assessment Phase

£m (outturn prices)	**Assessment Phase cost**	**Proportion of total estimated procurement expenditure**
Actual Cost	8	3%
Approved Cost at Initial Gate	3	1%
Variation	+5	

5c. Duration of Assessment Phase

Date of Main Gate Approval	September 2004
Date of Initial Gate Approval	November 1999
Length of Assessment Phase [months]	58

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	**Lowest**	**Budgeted For**	**Highest**
Cost of Demonstration and Manufacture Phase forecast at Main Gate	232	245	245
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	133	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	**Budgeted For**	**Latest Acceptable**
Forecast ISD at Main Gate	August 2008	December 2008	December 2009
Envelope within which capability was expected to be available at Initial Gate	-	April 2006	

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POST MAIN GATE PROJECT SUMMARY SHEET

NAVAL EXTREMELY HIGH FREQUENCY/SUPER HIGH FREQUENCY SATELLITE COMMUNICATIONS TERMINALS

Integrated Project Team Responsible:

GLOBAL COMMUNICATION SERVICES

Single Point of Accountability for project capability:

Director Equipment Capability (Command and Control Information Infrastructure)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

Naval Extremely High Frequency/Super High Frequency Satellite Communication Terminal is a communication project that will provide highly protected, high data rate satellite communication capability to selected submarines and Command Capable platforms. It will deliver capacity to covertly exchange large volumes of information with co-operating forces and command, survival against jamming, low vulnerability to geo-location and direct interoperability with UK, US and allied forces.

Naval Extremely High Frequency/Super High Frequency Satellite Communication Terminal is an international collaborative programme based on the US Advanced Extremely High Frequency programme, under which the UK along with Canada and the Netherlands have signed a Memorandum Of Understanding for utilisation of an agreed share of the capacity of a new constellation of Advanced Extremely High Frequency satellites due to enter service from 2010 onwards. Terminals, submarine masts, and antennas for ships and shore stations to meet the UK requirements have been ordered under US Foreign Military Sales arrangements. Manufacture of submarine masts is complete and the remaining Foreign Military Sales articles are on contract with Raytheon Company. In view of the key dependence on US acquisition projects, there is no overall prime contractor and MoD is performing the role of the Naval Extremely High Frequency/Super High Frequency Satellite Communication Terminal system design authority with technical support provided by Qinetiq. Installation of Naval Extremely High Frequency/Super High Frequency Satellite Communication Terminal equipment and integration with existing and planned information infrastructure has been contracted for with the relevant providers via the associated platform or project Integrated Project Teams.

Slippage to the US Advanced Extremely High Frequency satellite programme has made it impossible to achieve the UK Advanced Extremely High Frequency ISD as endorsed in the Main Gate Business Case. As a consequence, the strategy for deployment of terminal types across platforms has been reviewed with emphasis on the need to ensure Astute submarines have a satellite communication capability on build. US Department of Defence have given approval for

early release of modified Super High Frequency Follow On Terminals, that will be fitted in Astute Class submarines and deliver a capability to meet some of the system requirements over UK Skynet 4&5 satellites by September 2009 (ISD). The Advanced Extremely High Frequency In Service Date is dependent upon the deployment of the Advanced Extremely High Frequency satellite constellation and the delivery of Navy Multiband Terminals for UK submarines, carriers and satellite ground stations; forecast is May 2012. There is a need to submit a Review Note to the Approving Authorities in order to gain approval of the revised forecasts of Naval Extremely High Frequency/Super High Frequency Satellite communications Terminal ISD and costs.

1b. Associated projects

Critical to Achievement of ISD		Critical to Initial Gate Requirement	
Project Title	Forecast ISD	Project Title	Forecast ISD
Astute Boat 1	2009	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
Lockheed Martin Corporation	Development and Production of Advanced Extremely High Frequency Satellites	Cost Plus Award Fee	UK participation through Memorandum Of Understanding agreement with US Department of Defence. Contract is between US Department of Defence and Lockheed Martin Corporation.
Raytheon Company	Production of Satellite Communication Terminals and Submarine Antennas	Terminals: Cost Plus Incentive Fee Antennas: Firm Fixed Price	Non-competitive Foreign Military Sales agreement with US Department of Defence/Program Executive Office Command Control Communications Computers Information &Space. Contract is between US Department of Defence and Raytheon.
Raytheon Company	Development and Production of Navy Multiband Terminals and Advanced Extremely High Frequency Antennas	Cost Plus Award Fee	Competitive Foreign Military Sales agreement with US Department of Defence/Program Executive Office Command Control Communication Computers Information &Space Contract is between US Department of Defence and Raytheon.

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	200
Approved Cost at Main Gate	290
Variation	-90
In-year changes	-9

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	-2	Accounting Adjustments and Re-definitions	Final in year spend lower than forecast and change in Cost of Capital due to revised profile of deliveries.
January 2008`	-7	Contracting Process	Delay on Astute feasibility studies and the United States Naval Maritime Terminal programme.
Historic	-25	Accounting Adjustments and Re-definitions	Add back of Contracted Out Services VAT, previously omitted from forecast, to align with Main Gate approval (+£2m). Spend incurred by Astute Submarine & Major Warships Integrated Project Teams on behalf of Naval Extremely High Frequency/Super High Frequency Satellite Communication Terminal programme omitted from sunk costs in previous forecast (+£4m). Support related costs included in forecast in error, mainly relating to Advanced Extremely High Frequency satellite Operation & Support Memorandum of Understanding funding (-£31m).
Historic	-13	Changed Requirement	Variation to reflect draft Review Note financial costings based on updated Naval Extremely High Frequency/Super High Frequency Satellite Communication Terminal investment appraisal and cost model (-£13m). Additional funding for Enhanced Ship Submersible Nuclear Information eXchange as part of Equipment Plan 2005 Option to defer main Naval Extremely High

Date	Variation (£m)	Factor	Explanation
			Frequency/Super High Frequency Satellite Communication Terminal programme (+£2m). Reduction in number of spare masts procured as approved in Naval Extremely High Frequency/Super High Frequency Satellite Communication Terminal Review Note July 2004 (-£2m).
Historic	-18	Exchange Rate	Revaluation of programme costs to reflect revised exchange rates.
Historic	-4	Technical Factors	Cost reduction due to maturity of technical risks.
Historic	-21	Risk Differential	Difference between the risk allowed for in the most likely and the approved not to exceed figures in the Main Gate Business Case.
Net Variation	-90		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	87

2d. Years of peak procurement expenditure

2008/2009	2011/2012

2e. Unit production cost*

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
12.4	12.0	13	11

* This is an average UPC across a selection of different platform fits.

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	As being fitted, set to work and supportable in one Ship Submersible Nuclear (Trafalgar or Astute), one Command Capable Ship and a shore Head Quarter with Advanced Extremely High Frequency space segment availability.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	May 2012
Approved ISD at Main Gate	November 2009
Variation (Months)	+30
In-year changes	+19

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
January 2008	+19	Technical Factors	Detailed evaluation of the US Advanced Extremely High Frequency satellite delays and delays to Navy Multiband Terminal delays, impact on the ISD.
Historic	+12	Technical Factors	Initial estimate based on technical delays to US Advanced Extremely High Frequency satellites and US re-profiling of terminal development..
Historic	-1	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the highest acceptable (90%) estimates at Main Gate.
Net Variation	+30		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
Interim Equipment Procurement	+3	-	Procurement Costs of Enhanced Ship Submersible Nuclear Information eXchange, an interim capability provisioned for the 3 Trafalgar Class Submarines.
Support of Interim Equipment	+2	-	Support Costs for interim capability
Total	+5		

3e. Operational impact of ISD variation

The late arrival of Naval Extremely High Frequency/Super High Frequency Satellite Communication Terminal will result in a delay in providing Ships Submersible Nuclear the ability to integrate with network-based operations and the distributed collaborative planning and shared situational awareness for which Network Enabled Capability is the enabler (Naval Extremely High Frequency/Super High Frequency Satellite Communication Terminal is viewed as the only viable bearer for delivery of Defence Information Infrastructure enterprise services (Joint Command & Control Support Programme etc) to submarines, and so is pivotal for the more effective integration of Ship Submersible Nuclears in Joint and Coalition operations). The interim nature of Enhanced Ship Submersible Nuclear Information eXchange is important as concerns exist over the continued use of International Maritime Satellite Communication. Specifically, International Maritime Satellite Communication does not deliver assured communications, there are clear conflicts over its use for offensive strike and the International Maritime Satellite Communication Charter, and elements of the architecture are grounded in China. Enhanced Ship Submersible Nuclear Information eXchange provides a lower data rate when compared with Naval Extremely High Frequency/Super High Frequency Satellite communication Terminal. There will be limited capability on those Enhanced Ship Submersible Nuclear Information eXchange fitted vessels. Without Naval Extremely High Frequency/Super High Frequency Satellite Communication Terminal, there is an increase in vulnerability through geo-location and near-surface presence, reducing submarines' ability to contribute to Military Tasks 1.1 (Strategic Intelligence) & 1.2 (Nuclear Deterrence).

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Capacity - The user requires Satellite Communication capacity to support the operational needs of Ships Submersible Nuclear and surface ships	Yes	-	-
02	Interoperability - The user shall be able to exchange information between co-operating forces in national, joint and coalition operations	Yes	-	-
03	Survivability - The user shall be able to exchange critical information and maintain communications, such that hostile action or natural disturbances will not disrupt the conduct of operations	Yes	-	-
04	Covertness - The user shall be able to conduct operations whilst preserving the unique characteristics of stealth	Yes	-	-
05	Coherency - The user requires coherence between Naval Extremely High Frequency/Super High Frequency Satellite Communication Terminal and other joint Command, Control, Communications, Computer, Intelligence, Surveillance & reconnaissance systems, Network Enabled Capability initiatives and supporting infrastructure	Yes	-	-
06	Assured Information Delivery - The user shall have assured access to information services and end to end information delivery as required to conduct military tasking	Yes	-	-
07	Integrated Logistics Support - The user requires that Integrated Logistics Support (Availability Reliability & Maintainability, training and manning requirements) will be provided throughout the lifespan/timescale of the equipment	Yes	-	-
08	Security – The user shall be able to exchange information at multiple security levels up to and including UK Top Secret Codeword, US Special Category Information and special category information at one, two and four eyes compartment levels	Yes	-	-
09	Environment - The user requires the capability to be available throughout the gamut of submarine, ship and shore operational scenarios	Yes	-	-
10	Installation - The user requires capability insertion in accordance with current MoD Warship Support Agency procedures and national Health & Safety at Work legislation,	Yes	-	-

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
	with minimum interference and at the earliest possible opportunity			
Percentage currently forecast to be met		100%		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
-	-	-	-

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

In March 2001, MoD considered an Initial Gate Business Case for Naval Extremely High Frequency/Super High Frequency Satellite communication Terminal and approved an Assessment Phase designed to establish the most cost-effective solution for meeting submarine Extremely High Frequency/Super High Frequency Satellite Communication terminal requirements, Command Ships Operational Control requirements and the associated shore infrastructure.

A number of options were investigated including the provision of commercial Satellite Communication, Super High Frequency only, Extremely High Frequency only and dual Extremely High Frequency/Super High Frequency. The operational benefits and value for money were reported in the Main Gate Business Case which recommended that Extremely High Frequency was the only solution that can provide non-geolocatable, high capacity communications that enable the submarine to remain covert. It also identified that Super High Frequency can provide nationally assured high capacity information exchange with UK but suffers weaknesses in highly stressed environments. The recommendation was accepted for a dual Extremely High Frequency/Super High Frequency capability.

Although the UK was procuring Super High Frequency Satellite Communication within SKYNET5, Assessment Phase studies concluded that the UK service provision model would not be cost effective for an Extremely High Frequency capability and the SKYNET 5 PFI contractor would not provide an Extremely High Frequency space segment. A Memorandum Of Understanding was negotiated to achieve participation in the US Advanced Extremely High Frequency programme to secure sufficient capacity to support Ship Submersible Nuclear operations. For similar reasons of value for money, it was agreed that terminal equipment and submarine Satellite Communication masts would be procured under Foreign Military Sales procedures, thus allowing the MoD to benefit from quantity discounts by joining large US Navy production orders, harmonise UK and US Ship Submersible Nuclear satellite Communication programmes and minimise non-recurring expenditure.

The Main Gate Business Case also recognised that given the dependencies on US programmes, a Naval Extremely High Frequency/Super High Frequency Satellite Communication Terminal prime contractor would have no control over the various platform primes and MoD would be unable to pass on system design and interface risks. Accordingly, the approved strategy was that the Naval Extremely High Frequency/Super High Frequency Satellite communication Terminal project retains system design authority and contract technical support for specific tasks on a firm price basis.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	3	1 %
Approved Cost at Initial Gate	3	1 %
Variation	0	

5c. Duration of Assessment Phase

Date of Main Gate Approval	August 2003
Date of Initial Gate Approval	March 2001
Length of Assessment Phase [months]	29

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	242	269	290
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	90	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	September 2009	October 2009	November 2009
Envelope within which capability was expected to be available at Initial Gate	-	December 2007	-

POST MAIN GATE PROJECT SUMMARY SHEET

NEXT GENERATION LIGHT ANTI-ARMOUR WEAPON

Integrated Project Team Responsible:

INFANTRY GUIDED WEAPONS

Single Point of Accountability for project capability:

Director Equipment Capability (Ground Manoeuvre)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

Next Generation Light Anti-Armour Weapon is a man-portable short-range anti-armour weapon to be carried and used by all Arms and Services and replaces the Light Anti-Armour Weapon 80 capability. Next Generation Light Anti-Armour Weapon will provide a predictive line-of-sight capability out to a range of 600m, against main battle tanks and light armoured vehicles, when both stationary and manoeuvring, and have the ability to be fired from enclosed spaces and defensive positions. It will have a secondary role as a means of attacking structures. The project is an Enhanced Off-The-Shelf procurement, and includes the provision of training systems and support. The weapon system is being developed in conjunction with the Swedish Defence Material Administration. The Next Generation Light Anti-Armour Weapon prime contractor is SAAB Bofors Dynamics of Sweden, with Thales Air Defence Ltd as the main UK sub-contractor.

Next Generation Light Anti-Armour Weapon will be used by all forces operating in the land environment.

The In Service Date for the Next Generation Light Anti-Armour Weapon system has been delayed as a result of system qualification difficulties.

1b. Associated projects

Critical to Achievement of ISD		**Critical to Initial Gate Requirement**	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
Saab Bofors Dynamics, Sweden	Full Development and Production	Firm price (Development Phase) & Fixed Price (Production)	International competition

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	310
Approved Cost at Main Gate	415
Variation	-105
In-year changes	-8

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	-3	Changed Budgetary Priorities	Reduction in overall missile numbers.
January 2008	-2	Receipts	***
January 2008	+3	Changed Budgetary Priorities	Changes in timing of spend and Asset Deliveries leading to variations in Cost of Capital.
January 2008	-1	Procurement Strategy	Identification of an alternative to meet the Next Generation Light Anti-Armour Weapon Dummy Round Requirement using internal MoD resources.
September 2007	-5	Inflation	Inflation against index used for Next Generation Light Anti-Armour Weapon programme lower than previously forecast.
Historic	-39	Accounting Adjustments and Re-definitions	Confirmation received from HM Revenue and Customs that Next Generation Light Anti-Armour Weapon production is collaborative and therefore zero rated for VAT.
Historic	+4	Changed Budgetary Priorities	Changes in timing of spend and Asset Deliveries leading to variations in Cost of Capital (+£1m, +£3m).
Historic	-1	Contracting Process	Prices for Trainer Spares (+£2m), price for Vehicle Kits (+£1m), Price for Combat Weapons (+£1m), Price for Core Development Contract (-£5m).
Historic	-22	Procurement	Departmental Review - Reduction

Date	Variation (£m)	Factor	Explanation
		Strategy	in Unit Production Cost as a result of exercise of Swedish Option (-£3m). Reduction in cost of development attributable to collaboration with Sweden (-£9m), VAT saving on Development associated with collaborative approach (-£10m).
Historic	-1	Technical Factors	Failure of Design Qualification Tests in November 2006 resulted in contractor deferring the start of missile assembly and deliveries in order to conduct further firing trials and repeat Design Qualification Tests. These delays have led to an increase in the Cost of Capital (+£6m). Reduced risk provision associated with Variation of Price and the Next Generation Light Anti-Armour Weapon warhead qualification trials (-£2m). Re-assessment of Training equipment requirements resulting in need to increase procurement of training aids (+£7m). Reduction in scope of Development Phase work, including decisions made to reduce some of the development contract options to reduce costs (-£7m). Contractual Options added to increase the scope of Development (+£1m). Reduced training equipment quantities needed to meet training capability (-£3m); reduced levels of project support (-£3m).
Historic	-38	Risk Differential	Difference between risk allowed for in most likely (50%) and highest acceptable (90%) estimates at Main Gate.
Net Variation	-105		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	196

2d. Years of peak procurement expenditure

2006/2007	2007/2008

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	**Current**	**at Main Gate**	**Current**
0.02	***	14002	13669

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	A brigade trained and equipped.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	April 2009
Approved ISD at Main Gate	July 2007
Variation (Months)	+21
In-year changes	+9

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
March 2008	-6	Changed Requirement	Reduction in the number of weapons required to achieve ISD.
January 2008	+6	Technical Factors	Further problems with final design qualification resulted in the need for additional iterations of system design testing to achieve reliability requirements.
October 2007	+9	Technical Factors	Slippage of forecast In Service Date to April 2009 as a result of continued problems with final design qualification.
Historic	+20	Technical Factors	Failure of Design Qualification Tests in November 2006 resulted in the contractor deferring the start of missile assembly and deliveries in order to conduct further firing trials and repeat Design Qualification Tests (+12 months). Failures in sub-system qualification delayed the start of production with a subsequent impact on In Service Date (+8 months).
Historic	-8	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the highest acceptable (90%) estimates at Main Gate
Net Variation	+21		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
Maintain Interim Light Anti-Armour Weapon in-service	-	-	***

3e. Operational impact of ISD variation

The short range anti-armour capability in current operations is provided by the Interim Light Anti-armour Weapon procured under an Urgent Operational Requirement in 2005 to meet the capability gap created by the early withdrawal of Light Anti-Armour Weapon 80. The delay in the In Service Date of the more capable Next Generation Light Anti-Armour Weapon system has had virtually no impact on current operations because there is no heavy armour threat. However, there would be an impact in the unlikely event of a requirement for a short range capability against modern heavy armour before the Next Generation Light Anti-Armour Weapon ISD in April 2009.

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Next Generation Light Anti-Armour Weapon shall be made ready in 10 secs.	Yes	-	-
02	The time to fire for Next Generation Light Anti-Armour Weapon shall be less than 10 secs.	Yes	-	-
03	The system configured for tactical carriage shall have a mass of not more than 12.5kg	Yes	-	-
04 & 05	Against a moving target Main Battle Tank target, defined as {x} shall achieve a Single Shot Kill Probability of {y} between 20 and 400m	Yes	-	-
06 & 07	Against a moving Light Armoured Fighting Vehicle target, defined as {x}, Next Generation Light Anti-Armour Weapon shall achieve a Single Shot Kill Probability of {y} between 20 and 400m	Yes	-	-
08	Next Generation Light Anti-Armour Weapon shall be capable of being fired safely from within a room through a window opening. The dimensions of the room shall be 4m x 2.5m x 2.5m (high), the window shall be 1m x 1m located in either the long or short wall and 1m above ground level and the door shall be 0.75m x 2m (high). The firer shall be wearing appropriate in service hearing protection.	Yes	-	-
Percentage currently forecast to be met		100 %		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
-	-	-	-

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

The Next Generation Light Anti-Armour Weapon project predates SMART approvals and as such there was no Initial Gate or Assessment Phase. Following approval to issue an Invitation To Tender to conduct Project Definition studies in September 1997, and subsequent approval for the Project Definition Phase in July 1999, competitive firm price contracts were awarded in October 1999 to Matra BAe Dynamics in the UK and Celsius in Sweden. The delay between approval to issue the Invitation to Tender and contract award was caused by uncertainty over the future of the Medium Range TRIGAT anti-armour programme, and resulted in slippage to the forecast ISD. The Project Definition Phase contracts lasted up to 22 months and bids for the Demonstration, Manufacture and Support phases were received in January 2001. The contractors were required to confirm the performance of their baseline system, developing weapon enhancements and prototype training systems needed to meet Next Generation Light Anti-Armour Weapon requirements.

Risk reduction and trade-off studies were undertaken and detailed management, milestone and trials plans produced. The opportunities for collaboration with other countries were explored and a Memorandum of Understanding with Sweden, facilitating joint development, was signed in June 2002.

Main Gate Approval to proceed to the Demonstration, Manufacture and Support phases, together with downselection to Saab Bofors Dynamics (formerly part of Celsius), was achieved in May 2002. Contract placement followed in June 2002.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	17	5%
Approved Cost at Initial Gate	18	5%
Variation	-1	

5c. Duration of Assessment Phase

Date of Main Gate Approval	May 2002
Date of Initial Gate Approval	-
Length of Assessment Phase [months]	-

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	-	377	415
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	453	-	588

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	August 2006	November 2006	July 2007
Envelope within which capability was expected to be available at Initial Gate	May 2004	-	August 2006

POST MAIN GATE PROJECT SUMMARY SHEET

NIMROD MARITIME RECONNAISSANCE AND ATTACK MK4

Integrated Project Team Responsible:

NIMROD MARITIME RECONNAISSANCE AND ATTACK (MRA4)

Single Point of Accountability for project capability:

Director Equipment Capability (Under Water Effect)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

The Nimrod Maritime Reconnaissance and Attack MK4 will replace the current Nimrod Maritime Reconnaissance and Attack MK2 as the new maritime patrol aircraft. Nimrod Maritime Reconnaissance and Attack MK4 will provide significantly enhanced Anti-Submarine and Anti-Surface Warfare capability through improved aircraft and sensor performance, a greater degree of system integration, better Human Machine Interface design and a substantial improvement in availability and supportability.

The Nimrod Maritime Reconnaissance and Attack MK4 contract for the design, development and production of 21 aircraft was placed with BAE Systems (then BAe) in 1996, following an international competition. The contract was re-negotiated in mid 1999 and again in early 2002 – when the Department reduced the number of aircraft from 21 to 18. Continued technical and resource problems led to a further review of the programme and in February 2003 the Department reached an agreement with BAE Systems to change the fixed price contract to a Target Cost Incentive Fee contract for Design and Development, which included manufacture of three trials aircraft, and an option for a further fifteen production aircraft. Pending definition of a satisfactory design standard, series production activities were limited to those activities vital to the preservation of the essential skill sets within BAE Systems and its supply chain. Flight trials are underway with all three aircraft.

In July 2004, studies determined that the capability of the Nimrod Maritime Reconnaissance and Attack MK4 would enable maritime reconnaissance requirement to be met with a fleet of about 12 aircraft and the number to be procured has been reduced accordingly. A further review of the programme identified increased production costs and that the In-Service Date for the capability would need to be delayed in order to make the programme affordable within Departmental funding constraints. A business case seeking authorisation of commitment to full production was approved in May 2006, and the contract was amended to re-introduce the production requirements in July 2006. As part of the approval process the project's original Key Requirements were redefined and endorsed as Key User Requirements by the Investment Approval Board and a revised definition of the In-Service Date was approved. The Initial Gate

Business Case for the Assessment Phase of Future Support was approved in May 2005 with Main Gate submission now expected around mid 2008.

1b. Associated projects

Critical to Achievement of ISD		Critical to Initial Gate Requirement	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
BAE Systems, Warton	Design and Development	Target Cost Incentive Fee*	Prime Contractor International competition
BAE Systems, Warton	Production	Target Cost Incentive Fee[1]	Prime Contractor

* Originally let as a fixed price contract.

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	3602*
Approved Cost at Main Gate	2813
Variation	+789
In-year changes	+102

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
July 2007	+102	Technical Factors	Costs of converting the 3 development aircraft to the production standard. (+£50m). Extension of the Flight Trials Programme (+£20m). Embodiment of the Stability Augmentation System (+£20m). Associated increase in Cost of Capital (+£12m).
Historic	-370	Accounting Adjustments and Re-definitions	Woodford under-recovery of overhead double counted in EP07 as already included in Company cost forecast (-£7m). An adjustment of the Historic calculation of the Cost of Capital charge (-£32m). Increase in costs owing to the creation of a trading fund for the Communications Electronic Security Group after original approval had been granted (+£1m); derivation of the approved cost on a resource basis (-£19m). Change to take account of an adjustment to the current forecast for MPR01, reflecting the availability of more accurate data (+£29m). Changes caused by the conversion of internal accounting system to full resource basis (-£26m). Difference in variation due to revision of Cost of Capital charge (-£22m). Departmental Review - identified savings with a reclassification of termination spares expenditure (-£176m) and

*] For consistency with previous MPRs this figure includes a notional £35m for the Active Search Sonobuoy System (ASSS) which formed part of the original Nimrod Maritime Reconnaissance and Attack MK4 approval, all of which was subsequently transferred out of the Nimrod Maritime Reconnaissance and Attack MK4 programme. Re-approval was not sought because of the materiality of the comparatively low value involved, but the £35m remains within programme costs to ensure a neutral impact in comparability between approval and forecast.

Date	Variation (£m)	Factor	Explanation
			resulting reduction in Cost of Capital charge (-£35m). Departmental Review identified savings from reduced Cost of Capital charge from early delivery to the customer (-£69m). Departmental Review – identified savings from reclassification of Adaptable Aircraft costs (-£4m) and reclassification of Consumable Stock (-£7m). MPR05 transposition error (-£3m).
Historic	-27	Changed Budgetary Priorities	Reduction in Risk provision (MPR00 -£17m; MPR02 -£17m). Contractor forecast was greater than advised in MPR05 resulting in increased Cost of Capital charge (+£7m).
Historic	-80	Changed Requirement	Reduction from 18 aircraft to 12 (-£155m) and associated reduction in Cost of Capital Charge (-£10m). Reduction from 21 to 18 aircraft; MPR02 saving of £114m less estimated termination costs of £70m; MPR03 further savings identified in 2003 planning process (-£16m). Additional commitments as part of the Heads of Agreement (+£35m). Additional costs for assessment of enhanced capability as part of the Agreement announced on 19 February 2003 (+£10m). As a consequence of the Agreement, QinetiQ requirement extended (+£40m). Reduction in cost of assessment of enhanced capability (-£5m). Contract change requirements (+£70m). Reduction in Government Furnished Equipment requirement (-£5m).
Historic	+24	Contracting Process	Reduction in Risk provision (-£56m); and reductions following the renegotiation of contract (-£26m); reduction in programme costs between Main Gate approval and original contract placement (-£37m); original contract was let at provisional indices that were below actual indices (+£16m). Additional costs relating to the agreement

Date	Variation (£m)	Factor	Explanation
			announced on 19 February 2003 for Design and Development Target Cost Fee (+£132m). Increased cost in light of company contract quality price for production and associated analysis of revised costing for October 2005 Investment Approvals Board Review Note (+£70m). Overhead recoveries (+£14m), Initial Logistics Support (+£8m), VAT liability on Design & Development support (+£5m), Increase to Management Reserve identified in the Departmental Review (+£5m). Departmental Review – identified savings from a reclassification of overheads (-£11m), reduction of contractor fee and production costs (-£10m), provision for reduced spares (-£13m), VAT exemption (-£33m), reductions for Initial Logistics Support (-£8m), reduced manpower requirements (-£22m), cancellation of spares (-£3m), and reduced Cost of Capital charge (-£7m).
Historic	+41	Inflation	Variation in Inflation assumptions (+£41m).
Historic	-7	Receipts	Forecast recovery of Liquidated Damages (-£46m) less those to be foregone as part of the Agreement announced on 19 February 2003 (+£39m).
Historic	+1,106	Technical Factors	Interest on Capital recalculated based upon Equipment Plan 07 profile and reduction in Management Reserve (-£4m). Review of EP07 estimates & schedule as a result of risk realisation Stability Augmentation System/Stall Identification Device has led to increased coherence in the programme resulting in a lower requirement for Management Reserve (-£5m). Increased Production Cost (+£229m) and increased Cost of Capital Charge linked to cost change and delay in delivery programme (+£183m). Increase in Defence Evaluation and Research Agency estimate

Date	Variation (£m)	Factor	Explanation
			(+£13m). Reduction in the study requirements (-£6m); slower technical progress than originally envisaged, particularly with wing mass, leading to reduced Cost of Capital charge (-£9m). Reduced Cost of Capital charge linked to reduction in aircraft numbers (-£2m); additional costs relating to the Agreement of February 2003 (+£359m). Increased Programme costs (+£348m).
Net Variation	+789		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	3,007

2d. Years of peak procurement expenditure

2002/2003	2004/2005

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
Development and Production Package	Development and Production Package	21	12

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	**Original ISD Definition**: Delivery of 7th production standard aircraft to Royal Air Force. **MPR04 Definition:** (Part of the 19th February 2003 Agreement with the Company): Delivery of the sixth production standard aircraft to the Royal Air Force. **Reason for Change:** To reflect the reduction in the fleet from 21 to 18 agreed in 2002; six aircraft represents one squadron. **MPR07 Definition**: Provision of 5 aircraft (4 deployable) and 6 combat ready crews. **Reason for Change:** Secretary of State announced in July 2004, post Medium-Term Work Strand studies, a reduction in the number of Nimrod Maritime Reconnaissance and Attack MK4 aircraft to be procured from 18 to about 12.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	December 2010
Approved ISD at Main Gate	April 2003
Variation (Months)	+92
In-year changes	+3

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
June 2007	+3	Technical Factors	Manufacturing Phase extended as a consequence of essential changes emerging from the Flight Trials.
Historic	+89	Technical Factors	To make overall programme affordable within Departmental funding constraints (MPR05 +12 months). Resource and Technical factors at BAE Systems leading to programme slippage: MPR00 +23 months MPR02 +11 months MPR03 +40 months MPR04 +6 months Difference between forecast date reported in MPR99 based on 1999 re-approval at 90% confidence and forecast date reported in MPR00 based on the current plan at 50% confidence (-3 months).
Net Variation	+92		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
Support costs of current equipment	344	-	Additional costs of running on Nimrod Maritime Reconnaissance and Attack MK2
Other	-	150	Reduction in Nimrod Maritime Reconnaissance and Attack MK4 support costs in same period
Total	+194		

3e. Operational impact of ISD variation

The consequence of the Nimrod Maritime Reconnaissance and Attack MK4 ISD slip is that either the Nimrod Maritime Reconnaissance and Attack MK2 would remain in service beyond the current out-of-service date of March 2011 or a capability gap will be endured. This slip will delay introduction of the improved capability of the Nimrod Maritime Reconnaissance and Attack MK4 and could require the ageing Nimrod Maritime Reconnaissance and Attack MK2 fleet to be maintained in service longer than expected. The operational impact of this slippage will be partly mitigated by measures already in hand to introduce upgrades to some Nimrod Maritime Reconnaissance and Attack MK2 systems. Notably the Acoustic Suite AQS 971, navigation systems, data links and other communications will address interoperability issues. The Acoustic Suite programme has benefited by making use of acoustic processors procured for Nimrod Maritime Reconnaissance and Attack MK4 Acoustic Suite AQS 970 programme.

SECTION 4: KEY USER REQUIREMENTS

Nimrod Maritime Reconnaissance and Attack MK4 is a legacy project and its original approval did not include Key Requirements. The Key Requirements reported to date in the Major Project Report were retrospectively agreed between Director of Equipment Capability (Under Water Environment) and Nimrod Integrated Project Team Leader. Before endorsement was sought, it was discovered that these Key Requirements were not compliant with the latest Smart Acquisition guidelines. Consequently, new Key User Requirements were developed from first principles to comply with the latest guidelines and endorsed by the Investment Approvals Board in June 2006.

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Maritime Counter Terrorism	Yes	Yes	-
02	Search & Detect (Under Water Effect)	Yes	Yes	-
03	Submarine Attack	Yes	Yes	-
04	Search & Detect (Above Water Environment)	Yes	Yes	-
05	Tactical Interoperability	Yes	-	-
06	Mission Completion	Yes	Yes	-
07	Maritime Presence	Yes	-	-
08	Operations in Hostile Environment	Yes	Yes	-
09	Environmental Operating Conditions	Yes	-	-
Percentage currently forecast to be met		100 %		
In-Year Change		0		

4b. Reasons for variation against approved Key User Requirements

Date	Key Requirement	Factor	Explanation
April 2008	KUR 01	Technical Factors	Solutions to problems related to Electronic Support Measures, Radar and Electro Optical Surveillance Detection System will be resolved within the Design & Development programme. The Contractor has an active recovery programme in place which is reviewed on a monthly basis. Additionally, further technical issues could emerge as more of the systems start to be operated together. Overall, there is a high probability that the KUR will be classified as on track by ISD.
April 2008	KUR 02	Technical Factors	Solutions to problems

Date	Key Requirement	Factor	Explanation
			related to Electronic Support Measures, Radar and Electro Optical Surveillance Detection System will be resolved within the Design & Development programme. The Contractor has an active recovery programme in place which is reviewed on a monthly basis. Additionally, further technical issues could emerge as more of the systems start to be operated together. Overall, there is a high probability that the KUR will be classified as on track by ISD.
April 2008	KUR 03	Technical Factors	Solutions to problems related to Electronic Support Measures, Radar and Electro Optical Surveillance Detection System will be resolved within the Design & Development programme. The Contractor has an active recovery programme in place which is reviewed on a monthly basis. Additionally, further technical issues could emerge as more of the systems start to be operated together. Overall, there is a high probability that the KUR will be classified as on track by ISD.
February 2008	KUR 04	Technical Factors	Required Mission System performance may not be assured prior to ISD.
April 2008	KUR 06	Technical Factors	Solutions to problems related to Electronic Support Measures, Radar and Electro Optical Surveillance Detection System will be resolved within the Design & Development programme. The Contractor has an active recovery programme in place which is reviewed on a monthly basis.

Date	Key Requirement	Factor	Explanation
			Additionally, further technical issues could emerge as more of the systems start to be operated together. Overall, there is a high probability that the KUR will be classified as on track by ISD.
April 2008	KUR 08	Technical Factors	The Electronic Warfare Rig procurement is proceeding ahead of its contracted timescales. However, the commissioning of the new facility at the Thomson Building at Royal Air Force Waddington, which combines the A400M facility requirement, is currently several months behind schedule; Defence Estates will provide a full 3-point estimate for the build programme in May 2008. Electronic Support Measure and Radar issues are being addressed; see comments against KUR 1. Defensive Aids Sub System has 3 identified issues which require planning and funding. The KUR is considered at risk, since satisfaction of KUR 8 will be determined by the environment in which the fleet operates. Any additional requirements such as use/types of flares etc will be new requirements and will need to attract discrete funding for both equipment and for the extension of the programme.
August 2007	KUR 08	Technical Factors	Electronic Warfare Rig on contract with effect from 30 September 2006. Delivery expected January 2010 (50%), March 2010 (90%); BAE Systems have been incentivised to deliver within 2009 to meet Air Warfare Centre's requirement for a rig

Date	Key Requirement	Factor	Explanation
			availability 12 months prior to In Service Date. Recognition of assessment of KUR has been agreed with Nimrod Capability Working Group.
Historic	KUR 08	Technical Factors	Technical and financial issues now resolved surrounding procurement of Electronic Warfare Rig thereby allowing aircraft to operate with a self-defence capability. Business Case with Investment Appraisal under compilation. Procurement schedule being determined; anticipate KUR compliance when schedule and risks clearly identified.

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

In November 1992, the Equipment Approvals Committee approved a Request for Information exercise whereby 17 companies were invited to provide responses to the draft Replacement Maritime Patrol Aircraft Staff Requirement. Following analysis of the industry responses, the Equipment Approvals Committee endorsed the requirement and approved an Invitation to Tender phase whereby four companies (BAE Systems, Lockheed Martin, Loral and Dassault) were invited to provide detailed technical and commercial proposals for an aircraft to meet the endorsed Staff Requirement. Dassault withdrew from the competition in January 1996, and whilst Lockheed Martin and Loral merged in May 1996, they maintained the two separate proposals until the competition concluded. Following assessment of these responses, selection of BAE Systems' Nimrod 2000 (later to be re-designated Nimrod Maritime Reconnaissance and Attack MK4) offer was approved by Equipment Approvals Committee and Ministers in July 1996. This was the equivalent of Main Gate approval.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	5	0.1%
Approved Cost at Initial Gate	4	0.1%
Variation	+1	

5c. Duration of Assessment Phase

Date of Main Gate Approval	July 1996
Date of Initial Gate Approval	-
Length of Assessment Phase [months]	-

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	-	2813	-
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	-	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	-	April 2003	-
Envelope within which capability was expected to be available at Initial Gate	-	-	-

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POST MAIN GATE PROJECT SUMMARY SHEET

SOOTHSAYER

Integrated Project Team Responsible:

JOINT ELECTRONIC SURVEILLANCE

Single Point of Accountability for project capability:

Director Equipment Capability (Intelligence Surveillance Target Acquisition & Reconnaissance)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

The Soothsayer integrated ground based Electronic Warfare system will provide the supported Commander with a 24 hour, all weather source of intelligence, through its Communications and Non Communications Electronic Support Measures capability. The system detects, locates and identifies radio and radar signals. In addition, Soothsayer will provide an integrated Communications Electronic Counter Measures system. Soothsayer replaces a number of systems including Odette and the Interim Non-Communications Equipment.

Following a competitive Assessment Phase, a Demonstration and Manufacture contract was placed with Lockheed Martin (Owego USA) in August 2003. Soothsayer will be delivered in three main phases. The first phase, which includes Communications Electronic Support Measures and interim Communications Electronic Counter Measures, is expected to be delivered in 2009 (In Service Date). The second Capability Phase is planned for delivery by 2010. Under both phases the system will be fitted to the Meonic (previously the Light Role Supacat High Mobility Transport 6*6) soft skin vehicle. The third phase, which is planned for delivery in 2013 subject to armoured vehicle availability, will provide an armoured Communications Electronic Support Measures and Non Communications Electronic Support Measures capability.

Delay in the development and delivery of the Meonic vehicle resulted in a slip to the In Service Date and an increase in procurement costs being declared in January 2005. Vehicle reliability issues have been addressed and first phase deliveries are now complete. However, technical issues with the development and testing of the Communications Electronic Support Measures system have led to the forecast In Service Date being further delayed.

1b. Associated projects

Critical to Achievement of In Service Date		Critical to Initial Gate Requirement	
Project Title	Forecast In Service Date	Project Title	Forecast In Service Date
Meonic	2009	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
Lockheed Martin Systems Integration, Owego, USA	Demonstration and Manufacture	Firm Price	Competition

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	202
Approved Cost at Main Gate	150
Variation	+52
In-year changes	+7

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
January 2008	+6	Technical Factors	System Production and Test delays have led to an increase in the Cost of Capital.
November 2007	+1	Change in associated project	Uplift in Equipment Procurement Plan Financial Year 2008/09 for increased Capability Phase 2 and 3 Meonic Unit Production Cost.
Historic	-2	Changed Budgetary Priorities	Equipment Plan Option to delay armoured delivery until 2013.
Historic	+55	Change in associated project	Expansion of Soothsayer scope to develop the Meonic vehicle and manage the late supply to Lockheed Martin (Main Gate to Review Note [50%] variation). (+£14m) Equipment Plan Option to move the armoured platform from the cancelled Multi Role Armoured Vehicle to an interim platform in 2010 and subsequently to the Future Rapid Effects System around 2013. (+ £41m)
Historic	-8	Risk Differential	Difference between the risk allowed for the most likely (50%) and the highest acceptable (90%) estimate at Main Gate.
Net Variation	+52		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	84

2d. Years of peak procurement expenditure

2005/2006	2010/2011

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	**Current**	**at Main Gate**	**Current**
-	-	-	-

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

In Service Date Definition:	Y Troop Royal Marines trained and ready to support 3 Commando Brigade on a Medium Scale Peace Keeping operation with a mobile Communications Electronic Support Measures/Communications Electronic Counter Measures capability

3b. Performance against approved in-service date

Current Forecast In Service Date	June 2009
Approved In Service Date at Main Gate	June 2007
Variation (Months)	+24
In-year changes	+16

3c. Reasons for variation from approved In Service Date

Date	Variation (months)	Factor	Explanation
January 2008	+12	Technical Factors	Sensor development and platform integration delayed due to technical issues.
August 2007	+4	Technical Factors	Draft contractor plans indicates new date.
Historic	+4	Technical Factors	Lockheed Martin subcontractor forecast late delivery
Historic	+10	Change in associated project	Meonic late delivery delays Soothsayer integration and test.
Historic	-6	Risk Differential	Difference between the risk allowed for the most likely (50%) and the highest acceptable (90%) estimate at Main Gate.
Net Variation	+ 24		

3d. Cost resulting from In Service Date variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
Increase in procurement cost	+5	-	Late supply of Meonic to Lockheed Martin as Government Furnished Assets caused increase in Prime Contractor costs

3e. Operational impact of In Service Date variation

A reduced Electronic Warfare capability

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
KUR 01	The user shall be provided with an Electric Warfare capability which can be deployed to areas of the world with climatic conditions A1 to C1	Yes	Yes	-
KUR 02	The user shall receive timely Electronic Warfare information	Yes	-	-
KUR 03	The user shall be provided with an Electronic Counter Measures capability	Yes	Yes	-
KUR 04	The user shall be provided with an Electronic Warfare capability that meets the Soothsayer targets set	Yes	Yes	-
KUR 05	The system shall be compatible with the developments in the digitisation programme	Yes	-	-
KUR 06	The system shall be interoperable with relevant databases (Non Communications Electronic Support Measures)	Yes	-	-
KUR 07	The system shall be interoperable with other related systems	Yes	Yes	-
KUR 08	The platforms should retain mobility classifications after system equipment is installed in order to maintain speed of advance with supported formations	Yes	-	-
KUR 09	The user shall be provided with an Electronic Warfare capability that meets the sustainability criteria expressed in the Battlefields Mission Paper	Yes	Yes	-
Percentage currently forecast to be met		100 %		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
March 2008	KUR 01	Technical Factors	KUR 01 testing has identified environmental limitations in equipments and recovery plan is yet to be confirmed.
March 2008	KUR 03	Technical Factors	KUR 03 testing identified some limitations in Electronic Counter Measures function; recovery plan has been agreed but not fully implemented.
March 2008	KUR 04	Technical Factors	KUR 04 recent testing has identified technical solution as being insufficient, a recovery plan has been defined, but not agreed, that will address the KUR.
March 2008	KUR 07	Technical Factors	KUR 07 original mechanism to allow interoperability with other systems will not be fully implemented; initial discussions indicate an alternative way forward is possible.
March 2008	KUR 09	Technical Factors	KUR 09 required levels of sustainability are not currently supported by the contract due to changes in the logistics chain; this is currently being addressed as part of a commercial negotiation.

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

The Initial Gate business case for Soothsayer was approved in August 1999. Following a competition, two prime contractors, Lockheed Martin and Thales Defence were selected to provide a technical solution along with costs, risks and timescales for a Demonstration and Manufacture phase. Originally, down-selection to one prime contractor was planned for the end of the Demonstration Phase. In April 2002, an extension to the Assessment Phase and further risk reduction work was approved, and agreement given to down-selection at Main Gate Approval.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	24	11%
Approved Cost at Initial Gate	19	9%
Variation	+5	

5c. Duration of Assessment Phase

Date of Main Gate Approval	August 2003
Date of Initial Gate Approval	August 1999
Length of Assessment Phase [months]	48

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	140	142	150
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	95	96	106

5e. In Service Date boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast In Service Date at Main Gate	November 2006	December 2006	June 2007
Envelope within which capability was expected to be available at Initial Gate	-	January 2006	July 2006

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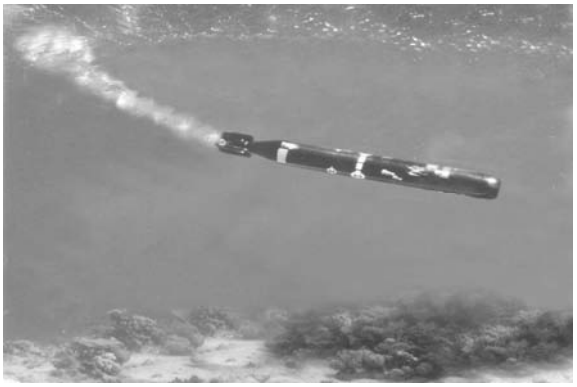
POST MAIN GATE PROJECT SUMMARY SHEET

STINGRAY LIFE EXTENSION & CAPABILITY UPGRADE



Integrated Project Team Responsible:

TORPEDOES

Single Point of Accountability for Project Capability:

Director of Equipment Capability (Under Water Effect)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

The Sting Ray lightweight torpedo is the main anti-submarine weapon for ships and aircraft. It entered operational service in 1983 with a planned service-life of around 20 years. To provide an opportunity for international collaboration on a replacement, Sting Ray will remain in-service until around 2025 when it is envisaged that other nations will require replacement lightweight torpedoes. Accordingly the Sting Ray torpedo needed to be life-extended and its capability enhanced.

The Sting Ray Life Extension programme was approved in May 1995 and a contract for full development was awarded to GEC-Marconi Underwater Systems (now BAE Systems Electronics Ltd) on 10th July 1996. The design is complete and the Certificate of Design has been signed off by the authority. Following approval for the Sting Ray Life Extension manufacturing phase, a contract was awarded to BAE Systems on 30th January 2003.

In February 2001, as a result of a study into a less sensitive warhead for the life–extended Sting Ray, a new Insensitive Munition warhead was included in the Sting Ray Life Extension programme to comply with new Departmental safety policy. This programme has since been deferred and will now be reported as a separate programme.

The Production Qualification Trials were completed in December 2005 and the first torpedo was delivered in February 2006. Delivery of the ISD quantity of torpedoes was achieved in June 2006. Production Acceptance Trial 3 was successfully completed in December 2007 allowing delivery of batch 3 torpedoes.

Future milestone: Production Acceptance Trial 4 to be completed in January 2009.

1b. Associated projects

Critical to Achievement of ISD		Critical to Initial Gate Requirement	
Project Title	Forecast ISD	Project Title	Forecast ISD
Insensitive Munition Warhead	The ISD for this project will be set when it achieves its Main Gate	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
BAE Systems Electronics Ltd Farnborough (formerly GEC-Marconi Underwater Systems Group)	Full Development and Pre-Production	Fixed Price	Non-competitive Contract with design authority of equipment. No sub-contract competition at first tier level.
BAE Systems Electronics Ltd	Manufacture & In Service Support	Firm price	Non-competitive, but with competition for manufacturing sub-contracts the value of which amounts to 44% of overall value of the manufacture contract.

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	576
Approved Cost at Main Gate	744
Variation	-168
In-year changes	-1

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
January 2008	-1	Changed Requirement	Gainshare opportunities Reduction in tasking costs (-£1m)
Historic	0	Accounting Adjustments and Re-definitions	Inclusion of Defence Evaluation and Research Agency support previously treated as an intramural charge (+£11m). Reassessment of Defence Evaluation and Research Agency support expenditure (+£5m). Derivation of the approved cost on a resource basis (+£4m). Difference in variation figures due to a revision of Cost of Capital Charge (-£3m). Removal of potential overhead costs relating to another project (-£12m). Correction of in-year expenditure from MPR06 owing to more accurate cost information (-£5m).
Historic	+25	Changed Budgetary Priorities	Increase in Cost of Capital Charge due to 12 month delay to ISD (+£8m), earlier manufacture payments (+£19m) and rescheduling of test equipment deliveries (+£9m). Revised estimate for Trials activities (+£2m). Reassessment of Demonstration estimate (-£1m). Separation of Insensitive Munition Warhead programme from the Sting Ray Life Extension programme (-£12m).
Historic	-182	Changed Requirement	Reduction in weapon numbers (-£183m) following two Equipment Planning Options; assessment work on a new Insensitive Munition Warhead, resulting from a Change in Departmental munitions policy (+£12m); removal of warhead life

Date	Variation (£m)	Factor	Explanation
			extension finds (-£3m); addition of safety case to comply with new Health and Safety regulations for warships (+£1m); transfer of Military Aircraft Release Vibration trial to Insensitive Munition Programme (-£2m); functionality modifications to the Sting Ray Life Extension programme (+£5m); decrease in QinetiQ support costs (-£5m). Sting Ray functionality modifications recognised as a separate Category D programme (-£5m); Transfer of warhead conversion costs to the Insensitive Munitions programme (-£2m).
Historic	+4	Contracting Process	Development contract price exceeded estimate at approval (+£4m).
Historic	-1	Inflation	Variation due to revised estimate for development contract Variation of Price clauses (-£1m).
Historic	+4	Technical Factors	Changes in delivery profile impacting on Cost of Capital charges (+£9m). Increase in assets delivered in 2006/07 which has reduced Cost of Capital charges (-£5m).
Historic	-17	Risk Differential	Difference between the risk allowed for in the most likely (50%) and highest acceptable (90%) estimate for the manufacture phase (-£18m). Difference in risk differential due to revision of Cost of Capital Charge (+£1m).
Net Variation	-168		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	467

2d. Years of peak procurement expenditure

2007/2008	2008/2009

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	At Main Gate	Current
***	***	***	***

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	The date when the first 100 production standard weapons have been modified and are ready for issue to an operational unit.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	June 2006
Approved ISD at Main Gate	December 2002
Variation (Months)	+42
In-year changes	0

3c. Reasons for variation from approved ISD

Date	**Variation (months)**	**Factor**	**Explanation**
Historic	+1	Technical Factors	Quantity of torpedoes required to achieve ISD not achieved until June 2006.
Historic	+24	Changed Budgetary Priorities	The need to match the MoD programme to available resources in the overall pattern of MoD priorities (+24 months).
Historic	+17	Contracting Process	Delay due to contract negotiations taking longer than expected (+9 months) and reassessment of programme timescales following negotiations (+8 months).
Net Variation	+42		

3d. Cost resulting from ISD variation

Type of Cost/Saving	**Cost £m**	**Saving £m**	**Explanation**
Support costs of current equipment	19	-	Additional In Service Support of present Sting Ray torpedo. (+£19m).
Other	-	14	Reduced In Service Support for updated torpedo (-£14m).
Total	+5		

3e Operational Impact of ISD variation

The ISD delay has enabled additional requirements to be incorporated into the weapon. However, the delay has the potential to cause a capability gap with the older and less effective Sting Ray weapon being retained in service with ongoing consequences for reliability. This capability gap should not be critical.

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Overall Torpedo Effectiveness	Yes	-	-
02	Hit Probability	Yes	-	-
03	Automobile Performance	Yes	-	-
04	Torpedo Counter Countermeasure Capability	Yes	-	-
05	Operational Environment	Yes	-	-
06	Water Depth	Yes	-	-
07	Acoustic Environment Capability	Yes	-	-
08	Warhead and Firing Chain	-	-	Yes
09	Availability, Reliability and Maintainability	Yes	-	-
10	Maintenance & Transport Environment	Yes	-	-
Percentage currently forecast to be met		90 %		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
Historic	KUR 08 Warhead and firing chain	Technical Factors	The move to an Insensitive Munition warhead with different characteristics from the current Sting Ray mod 0 warhead has meant that this KUR will need to be redefined.

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

The equivalent of the Assessment Phase occurred within a number of Definition Studies undertaken between 1993 and 1995 under Sting Ray Design services at a cost of £2.6m. These studies considered six options which formed part of the dossier submitted to the Equipment Approvals Committee for Full Development and Pre Production approval. Technical, engineering and environmental specifications together with Full Development and Pre Production, production and in-service support cost plans were also produced.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	-	-
Approved Cost at Initial Gate	-	-
Variation	-	

5c. Duration of Assessment Phase

Date of Main Gate Approval	May 1995
Date of Initial Gate Approval	-
Length of Assessment Phase [months]	-

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	709	727	744
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	-	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	-	December 2002	-
Envelope within which capability was expected to be available at Initial Gate	-	-	-

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POST MAIN GATE PROJECT SUMMARY SHEET

SUPPORT VEHICLE

Integrated Project Team Responsible:

GENERAL SUPPORT VEHICLES

Single Point of Accountability for project capability:

Director Equipment Capability (Expeditionary Logistics & Support)

Senior Responsible Owner for broader capability:

Capability Manager (Battlespace Manoeuvre)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

The Support Vehicle programme will procure the future tri-service cargo and recovery vehicles that will increase the military materiel lift/distribution and recovery capabilities. The programme will procure a fleet of vehicles consisting of 42 variants but effectively based around the Light, Medium and Heavy Cargo Vehicles (6, 9 and 15 tonne respectively), the 7,000 litre Unit Support Tanker, the Recovery Vehicle and the Recovery Trailer. These vehicles will replace the in-service 4, 8 and 14 tonne cargo vehicles and the three in-service recovery vehicle types.

The contract to procure 5,165 vehicles was signed on 31 March 2005 and this original contract was extended by a further 2,077 vehicles in July 2006. These extra vehicles were ordered following a comprehensive investment appraisal (and Review Note approval) which demonstrated it to be considerably cheaper to buy new vehicles rather than run on the best of the in-service fleet. The first 6, 9 and 15 Tonne prototype (quantity 14) vehicles were produced and have undergone formal Military trials which commenced, on schedule, on 30 October 2006.

The total Support Vehicle Programme provides 6,928 Cargo Vehicles, 288 Recovery Vehicles and 69 Recovery trailers, replacing a fleet of just under 15,000 in-service vehicles.

The In-Service date (ISD) is in 2 stages – the ISD for 161 Cargo Vehicles was achieved, one month early, in June 2007 and the ISD for 8 Recovery Vehicles plus 2 Recovery Trailers has been declared at February 2008.

1b. Associated projects

Critical to Achievement of ISD		Critical to Initial Gate Requirement	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
MAN Truck & Bus UK Ltd (previously known as MAN ERF UK Ltd)	Demonstration to In-Service	Firm Price for the first five years, then Fixed Price subject to Variation of Price	International competition

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	1272
Approved Cost at Main Gate	1641
Variation	-369
In-year changes	+9

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
December 2007	+9	Changed Budgetary Priorities	Funding for Seating Kits returned to programme.
Historic	-55	Accounting Adjustments and Re-definitions	The cost of warranty, previously included in Demonstration and Manufacture costs, has been transferred to In-service costs (-£64m). Derivation of approved cost on a resource basis (-£4m). Difference in variation figures due to revision of Cost of Capital Charge from 6 to 3.5% (+£13m).
Historic	-79	Changed Budgetary Priorities	Removal of the procurement of new Seating Kits from the programme (-£10m). Removal of Bowman Installation Kits from the programme in 2002/03 (-£33m). Change of vehicle mix (+£20m). Option taken in 2002/03 to slip ISD & compress delivery (+£40m). Reduced Milestone Payments (-£104m). Reduced consultancy costs (-£1m). Option taken to reduce Recovery Vehicles by quantity 75 (-£48m) and changed deliveries profile (-£5m). Better estimates of industry costs (+£52m). Change in Cost of Capital Charge due to revised accruals profile (+£10m).
Historic	+36	Changed Requirement	A saving of £19m achieved through negotiation when reducing the number of Recovery vehicles, previously forecast at £18m (-£1m). Addition of BOWMAN Installation Kits (+£70m). Additional Seating Kits (+£10m). Future Revenue spend increased to bring project support requirements into line with the

Date	Variation (£m)	Factor	Explanation
			revised programme (+£3m). Reduction in Support Vehicles (Cargo) requirement from the Main Gate approved quantity of 8,231 to 6,928 Support Vehicles (Cargo), together with a reduction in, and reprofiling of, future Capital spend (-£28m). Department review resulting in reduction of Recovery Vehicles and Seating Kits (-£18m).
Historic	-6	Technical Factors	Department trials have been integrated with the contractor's trials resulting in progressive acceptance, reduced trials costs and reducing the amount of technical risk funding in future years of the project.
Historic	-274	Risk Differential	Difference between the risk allowed in the most likely (50%) and highest acceptable (90%) estimate at Main gate (-£275m). Variation due to revised approval figures (+£1m).
Net Variation	-369		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	233

2d. Years of peak procurement expenditure

2009/2010	2010/2011

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
***	***	8,231 Cargo	6,928 Cargo
***	***	389 Recovery	288 Recovery
***	***	69 Recovery Trailers	69 Recovery trailers

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	Achievement of an operational capability with 161 cargo vehicles, 8 recovery vehicles and 2 recovery trailers with the appropriate supporting through life package.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	February 2008
Approved ISD at Main Gate	April 2006
Variation (Months)	+22
In-year changes	0

3c. Reasons for variation from approved ISD

Date	**Variation (months)**	**Factor**	**Explanation**
Historic	+2	Technical Factors	Increased time given to all bidders to finalise their technical solution (+1 month). Time added to review the technical solutions and the need to revise the support strategy (+1 month).
Historic	+17	Contracting Process	Unanticipated second round of tendering required to address commercial risks, costs, performance & time efficiencies (+2 months). Additional time required by bidders to prepare, and the MoD to evaluate, the second round bids (+5 months). Time necessary to prepare and evaluate unanticipated third round of bidding and change to fielding plan / ISD (+5 months). Time necessary for approvals and contractual negotiations (+5 months).
Historic	+10	Changed Budgetary Priorities	Planning measure to reduce Support Vehicles recovery vehicle quantities from 389 to 314 and delay first deliveries until February 2008.
Historic	-7	Risk Differential	Change in risk (time) allowed between the most likely (50%) and the highest acceptable (90%) estimates at Main Gate (-7 months).
Net variation	+22		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
Support costs of the current equipment	29	-	The cost of running on the current fleet.
Total	+29		

3e. Operational impact of ISD variation

The delayed ISD has resulted in the life of the current equipment being extended, leading to additional support costs and a delay in fielding an increased operational capability.

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
Support Vehicle (Cargo & Recovery)				
KUR 01	The Support Vehicle Recovery and Support Vehicle Cargo shall be capable of meeting the Defence Planning Assumptions	-	-	Yes
KUR 02	Capable of operating in world-wide climatic conditions	-	-	Yes
KUR 03	Compatible with existing and planned replenishment systems	Yes	-	-
KUR 04	Capable of completing a 48 hour Battlefield Mission without replenishment	Yes	-	-
KUR 05	Able to communicate with other units in their formation	Yes	-	-
KUR 06	Capable of strategic deployment including by sea	Yes	-	-
Support Vehicles (Cargo only)				
KUR 07	Capable of completing required Battlefield Mission	Yes	-	-
KUR 08	Deployable in its operation state by air	Yes	-	-
KUR 09	Capable of operating within the same parameters as other vehicles classified as Medium Mobility	Yes	-	-
Support Vehicle (Recovery only)				
KUR 10	The Land, Littoral and Air components shall have the capability to recover bogged, damaged and broken down wheeled and light A vehicles and provide the lift capability to the repair process in order to return them to operational use.	Yes	-	-
KUR 11	Capable of recovering military vehicles in an operational environment (including tactical operations throughout day & night).	Yes	-	-
KUR 12	Capable of lifting engines and main assemblies as part of the operational repair process	Yes	-	-
KUR 13	Capable of manoeuvring engines and main assemblies as part of the operational repair process	Yes	-	-
KUR 14	Capable of moving solo over the same terrain, within the same timeframe, as the B vehicles it supports	Yes	-	-
KUR 15	Capable of recovering casualty vehicles from point of failure to a place of repair	Yes	-	-
Percentage currently forecast to be met*		88%		
In-Year Change		0		

* 23 of the full list of 26 KURs are to be met. The MPR contains an abbreviated list for simplicity.

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
Historic	KUR 01	Changed Budgetary Priorities	Relaxed requirement as a result of capability/cost trade off.
Historic	KUR 02	Changed Budgetary Priorities	Relaxed requirement as a result of capability/cost trade off.

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

There was no Assessment Phase. The Support Vehicles programme had its origin as the Future Cargo Vehicles and the Future Wheeled Recovery Vehicle projects. These were launched as potential Private Finance Initiative programmes with advertisements in August 1998 and September 1999 respectively. The Future Cargo Vehicles project progressed through Pre-Qualification and Outline proposal stages with five bidders short-listed. An Initial Gate Business Case was drafted in December 1999, but was not submitted for approval because it did not demonstrate value for money.

Further work was requested to identify areas for further innovation, and also to develop a 'smart' Public Sector Comparator. Work continued to produce a more robust case but it became clear that confidence in Private Finance Initiative procurement was unlikely to improve. The decision was taken in March 2001 to replace the Private Finance Initiative procurement strategy with a conventional strategy and hold a fresh competition. Furthermore the Future Cargo Vehicles and Future Wheeled Recovery Vehicle programmes were merged into a single procurement and proceeded directly to the main investment decision which was secured in November 2001. The project bypassed the Assessment Phase because it was concluded that the technologies were mature and as the Department had, during the Private Finance Initiative phase of the project, acquired a detailed knowledge of the commercial vehicle sector, the risks were low. It was also necessary to avoid further delays in order to maintain industrial interest in the requirement. The time and cost boundaries were set at Main Gate and following an advertisement placed in the MoD Contracts Bulletin, a short-list of six prime contractors was drawn up.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	-	-
Approved Cost at Initial Gate	-	-
Variation	-	

5c. Duration of Assessment Phase

Date of Main Gate Approval	November 2001
Date of Initial Gate Approval	-
Length of Assessment Phase [months]	-

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	1180	1367	1641
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	-	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	November 2004	September 2005	April 2006
Envelope within which capability was expected to be available at Initial Gate	-	-	-

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POST MAIN GATE PROJECT SUMMARY SHEET

TERRIER

Integrated Project Team Responsible:

MANOEUVRE SUPPORT (MS)

Single Point of Accountability for project capability:

Director Equipment Capability (Ground Manoeuvre)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

Terrier is designed to be a highly mobile, robust and reliable armoured earthmoving vehicle, which will support mobility, counter mobility and survivability throughout the spectrum of conflict. It will be optimised for battlefield preparation and used by Close Support Engineer units. Terrier is being procured to replace the capability provided by the Combat Engineer Tractors. The programme was let under competitive tender and is currently in its Demonstration Phase. The Prototype vehicle has effectively completed its trials programme. Four demonstrator vehicles have been built and are commencing design proving and reliability improvement trials. Two Key User Requirements for protection (KUR 07 and 08) have been formally demonstrated and accepted, and climatic trails have been completed. The programme has been adversely affected by delays in the construction of the Demonstrator Vehicles and slower than expected reliability improvement on the Prototype Vehicle. As a result BAE Systems Land Systems has missed the Release for Production date and is in default of the contract. In accordance with the terms of the contract BAE Systems has submitted a rectification plan for the programme which is currently being reviewed by the Investment Approvals Board. The revised programme requires significant extra time to improve the vehicle reliability from its lower than expected start point and the consequences of this are reflected in this report. Release for Production (Milestone 12) remains the next key event and is now planned in the second quarter of 2008.

1b. Associated projects

Critical to Achievement of ISD		**Critical to Initial Gate Requirement**	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
BAE Systems Land Systems (formally known as Royal Ordnance plc)	Demonstration to Manufacture	Firm/Fixed price	United Kingdom competition
BAE Systems Land Systems (formally known as Royal Ordnance plc)	Contractor Logistic Support (first five years)	Fixed price	United Kingdom competition

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	313
Approved Cost at Main Gate	304
Variation	+9
In-year changes	+14

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
January 2008	+14	Technical Factors	Late delivery of Demonstrator Vehicles combined with failure of Prototype to reach reliability target requires a longer reliability growth period in Demonstration. This has increased the Cost of Capital Charge and the Programme Support Costs.
Historic	-3	Accounting Adjustments and Re-definitions	Departmental Review - Inclusion of projected Year End Accruals for the remainder of the project. This change reduces the annual Net Assets balance and the subsequent Cost of Capital Charge.
Historic	+4	Contracting Process	Cost of Capital – Difference between the profile of the Asset Deliveries prior to contract placement and those included in the current forecast cost.
Historic	-17	Procurement Strategy	Requirements change for Bowman (-£9m) and Training Infrastructure (-£8m) transferred to separate projects.
Historic	+17	Changed Requirement	Requirements for Bowman and Training Infrastructure changed.

Date	Variation (£m)	Factor	Explanation
Historic	+3	Technical Factors	Residual Terrier cost growth caused by, and remaining after, customer-driven Bowman requirements change.
Historic	-9	Risk Differential	Difference between the risk allowed for in the most likely (50%) and highest acceptable (90%) estimates at Main Gate.
Net Variation	+9		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	135

2d. Years of peak procurement expenditure

2008/2009	2009/2010

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
3.1	2.7	65	65

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	A total of 20 equipments delivered (4 to Army Training and Recruiting Agency & 16 to Land Command) and supportable (Logistic Support Date achieved, training in place, 20 crews trained).

3b. Performance against approved in-service date

	Date
Current Forecast ISD	December 2011
Approved ISD at Main Gate	December 2008
Variation (Months)	+36
In-year changes	+27

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
January 2008	+27	Technical Factors	Late delivery of Demonstrator Vehicles combined with failure of Prototype to reach reliability target requires a longer reliability growth period in Demonstration
Historic	+12	Changed Requirement	Customer change in requirements for Bowman.
Historic	-3	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the approved figures at Main Gate.
Net Variation	+36		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
Support costs of current equipment	-	-	There are no additional costs incurred as the Department plans to withdraw the existing equipment from service.

3e. Operational impact of ISD variation

Terrier will provide a highly agile, robust earthmoving capability which will have utility across the continuum of operations from warfighting to peace support. Terrier replaces the Combat Engineer Tractor which is being removed from service in March 2008 despite further delays to the Terrier programme. Restrictions on the Combat Engineer Tractor, primarily due to Bowman system safety concerns, reliability and industrial obsolescence had, in effect, already initiated a capability gap as Combat Engineer Tractor is not deployed on current operations. The subsequent delay to Terrier's ISD extends the capability gap and removes contingent capability manoeuvre support until 2011. The 27 month delay to Terrier's ISD could be partially mitigated by accepting a lower level of reliability; however, this compromise would increase the platform's through life costs and its logistic support requirements. Trading Terrier's reliability requirements would also decrease its operational availability. The User acknowledges the operational risk of the ISD variation and accepts the delay to the Terrier programme. However, the expressed Customer preference is that Terrier's reliability requirements are not compromised. The delayed ISD will still deliver sufficient Terrier to support a Medium Scale Contingent Operation by 2012 in accordance with extant Defence Policy.

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	User shall be able to dig vehicle slots	Yes	-	-
02	User shall be able to dig, carry and load spoil & rubble	Yes	-	-
03	User shall be able to dig trenches	Yes	-	-
04	User shall be able to grapple, grab and carry items weighing no more than 2 tonnes over short distances	Yes	-	-
05	At battleweight should not exceed 31.5 tonnes	Yes	-	-
06	User shall be able to deploy by air	Yes	-	-
07	User shall be afforded levels of indirect fire protection commensurate with its role	Yes	-	-
08	User shall be afforded levels of direct fire protection commensurate with its role	Yes	-	-
09	User shall have a 70% probability of completing a battlefield mission without failure	Yes	-	-
10	User shall have a 13.5% probability of completing a Battlefield Mission without basic failure	Yes	-	-
11	User should be able to maintain required capabilities while operating in climatic categories A2 to C1	Yes	-	-
Percentage currently forecast to be met		100 %		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
Historic	KUR 06	Technical Factors	The air transportability of Terrier has been successfully addressed by the A400M Integrated Project Team through the placing of a contract amendment with Airbus Military Sociedad Limitada for a Locally Reinforced Cargo Floor. Terrier must be air transportable. Verification criteria requires this to be demonstrated in A400M. The A400M cargo floor loading study shows that it is possible to modify the floor to take Terrier. We are now awaiting the outcome of the Director of Equipment Capability Expeditionary Logistics & Support funding review

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

A funded feasibility study for Terrier concluded that the most cost-effective way of meeting the requirement was to develop a new vehicle, where possible integrating in-service sub-systems and commercial off-the-shelf equipment. Approval was given for a competitive Project Definition phase in August 1998 and Firm Price contracts were placed in August 1999 with BAE Systems (with the work undertaken by its subsidiary Royal Ordnance plc) and Vickers Defence Systems. Both contractors developed detailed designs making extensive use of Computer Aided Design tools, virtual reality modelling, rigs and trials. The capabilities required and constraints imposed by physical limitations, such as rail and air transportability, resulted in very similar technical solutions. Both contractors offered tracked vehicles close in size weight and mobility to the Warrior tracked infantry fighting vehicle, having a crew of two and providing protection against small arms, high explosive fragments and mines. An Invitation to Tender was issued in February 2001 to both companies which sought detailed proposals and prices for all later phases. The Invitation to Tender also adopted Smart Acquisition initiatives such as Progressive Acceptance and innovative Contractor Logistic Support proposals. The Main Gate Business Case was approved on 17 July 2002. The contract for Demonstration, Manufacture and Phase 1 Contractor Logistic Support was placed with Royal Ordnance plc on 19 July 2002.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	17	5%
Approved Cost at Initial Gate	17	5%
Variation	0	

5c. Duration of Assessment Phase

Date of Main Gate Approval	July 2002
Date of Initial Gate Approval	August 1998
Length of Assessment Phase [months]	47

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	284	294	304
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	291	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	July 2008	September 2008	December 2008
Envelope within which capability was expected to be available at Initial Gate	-	December 2007	December 2008

POST MAIN GATE PROJECT SUMMARY SHEET

TYPHOON

Integrated Project Team Responsible:

TYPHOON

Single Point of Accountability for project capability:

Director Equipment Capability (Theatre Airspace)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

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 strategic environment and is progressively replacing the Tornado F3 and Jaguar aircraft.

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. The contract for the first Tranche of 148 aircraft, of which 55 valued at some £2.5bn are for the UK, was signed in September 1998. The contract for the second Tranche comprising 236 aircraft, 89 of which are for the UK, was placed in December 2004. Negotiations are underway with industry and nations on the third Tranche of 236 aircraft (88 for the UK). The estimated current cost of Typhoon was classified in MPR05 and remains so in MPR08, in order to protect the UK's ability to negotiate for the third Tranche.

Typhoon has been in service with the Royal Air Force for five years and commenced operational duties for the first time in June 2007 when it assumed Quick Reaction Alert responsibility for defence of southern UK airspace (jointly with Tornado F3 on rotation until April 2008). The second operational squadron, No.11 (Fighter) Squadron, formed in March 2007 and deliveries of Tranche 1 aircraft were completed in December 2007. Deployable Air Defence operational status was achieved on 1 January 2008, which enables Typhoon to deploy worldwide on air-to-air missions.

A contract was placed in July 2006 for an initial precision air-to-surface capability on Royal Air Force Typhoons. This will be implemented by mid-2008, in advance of a more comprehensive air-to-surface package through the Typhoon Future Capability Programme for which a contract was signed in March 2007.

The first export customer, Austria, signed a procurement contract in July 2003 which was amended in 2007 (18 aircraft reduced to 15); deliveries to Austria began in 2007. The agreement for the sale of 72 Typhoon aircraft to Saudi Arabia, with associated support and training programmes, was signed in September 2007. Contract acceptance of aircraft for Saudi Arabia will commence in 2009. Further export prospects have been identified and the Department (in conjunction with the partner nations and industry) is supporting a number of export campaigns.

1b. Associated projects

Critical to Achievement of ISD		Critical to Initial Gate Requirement	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
Eurofighter GmbH Airframe consortium comprising: Alenia BAE Systems EADS(CASA) 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.
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.
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 prices 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 30% of the overall value of the Prime Contract.

Contractor(s)	Contract Scope	Contract Type	Procurement Route
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 and Tranche 2 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.

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	***
Approved Cost at Main Gate	16671
Variation	***
In-year changes	***

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	***	Changed Budgetary Priorities	Reduced provision for modifications ***. Reduced quantity of Role Equipment ***. Cost of Capital resulting from reduced CDEL and accrual profile ***.
January 2008	***	Technical Factors	Development revised cost *** as a result of revised assessment of change proposals and risk. Tranche 1 production revised cost ***a result of refined assessment of retrofit programme and interoperability modifications. Tranche 2 production revised cost *** 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 *** Cost of Capital resulting from changes to CDEL, asset delivery and accrual

Date	Variation (£m)	Factor	Explanation
			profiles identified in Planning Round 08, IRDEL ***.
January 2008	***	Inflation	More accurate calculation of inflation based on advice from NATO Eurofighter and Tornado Management Agency ***.
January 2008	***	Exchange rate	Revised Euro Rate advised for Planning Round 08 ***.
Historic	***	Technical Factors	Re-assessment of Tranche 2 estimated cost ***, Revised assessment of Tranche 2 aircraft production contract ***, Revised assessment for cost of Tranche 2 engine production contract ***, Revised provision for future changes to production standards ***, Revised estimate for retrofitting early Tranche 1 aircraft to final production standard ***, Revised estimate for the precision air to ground capability ***, Reduction in value of Role equipment required for multi role Squadrons ***, Revised assessment of cost of NATO Eurofighter and Tornado Management Agency and industry management ***, Reduction in forecast for cost of release to service support ***.
Historic	***	Procurement Strategy	Transfer to Future Capability Programme.
Historic	***	Technical Factors	Interest on Capital due to revised cost and profiling of cost and deliveries
Historic	***	Technical Factors	Interest on Capital due to reprofiling of consumption and delivery
Historic	***	Technical Factors	Correction of omission of transferred cost in MPR05 calculation

Date	Variation (£m)	Factor	Explanation
Historic	***	Contracting Process	Industry restructuring.
Historic	***	Changed Requirement	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 ***. Separation of Tranche 3 ***,
Historic	+1506	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). Additional Cost of Capital Charge plus further price variation due to slippage in the programme (+£610m). 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). Slower than expected technical progress reducing asset balances thereby reducing Cost of Capital Charge (-£45m). 9 Month deferral of beneficial use date (+£132m Cost of Capital Charge).
Historic	+290	Changed Requirement	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).

Date	Variation (£m)	Factor	Explanation
			Conventionally Armed Stand-Off Missile integration assets (+£5m).
Historic	-13	Changed Budgetary Priorities	Reprofiling of expenditure, reducing asset balances and thereby reducing Cost of Capital Charge (-£5m). Transfers to other budgets (-£8m).
Historic	-103	Inflation	Changes in inflation assumptions since approval: development (+£205m) and production (-£308m).
Historic	-114	Exchange Rate	Changes in exchange rate assumptions since approval (-£114m).
Historic	-52	Contracting Process	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 Strategy	German withdrawal from certain equipments (+£106m). <u>Reorientation</u> 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	+416	Accounting Adjustments & 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). Increases in Cost of Capital

Date	Variation (£m)	Factor	Explanation
			Charge resulting from changes in accounting treatment of the delivery of assets (+£27m). A redefinition of Beneficial Use of Typhoon has resulted in the Defence Procurement Agency incurring additional 1 year's Cost of Capital Charge on development expenditure (+£222m). Difference in variation figures due to revision of Cost of Capital Charge (£-92m).
Net Variation	***		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	12293

2d. Years of peak procurement expenditure

2005/2006	2006/2007

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
-	69.3*	232	232

* The UPC is based on the costs for Tranche 1 and 2 aircraft only. Tranche 3 aircraft will be the subject of a separate negotiation and contract with industry.

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	Date of Delivery of first aircraft to the Royal Air Force

3b. Performance against approved in-service date

	Date
Current Forecast ISD	June 2003
Approved ISD at Main Gate	December 1998
Variation (Months)	+54
In-year changes	0

3c. Reasons for variation from approved ISD

Date	**Variation (months)**	**Factor**	**Explanation**
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 Management	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	+54		

3d. Cost resulting from ISD variation

Type of Cost/Saving	**Cost £m**	**Saving £m**	**Explanation**
Support costs of current equipment	1075	-	Cost of running on Tornado and Jaguar.
Other	-	861	Estimated support costs for Typhoon not incurred.
Total	+214		

3e. Operational impact of ISD variation

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 failure.

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 4 years.

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Take off Distance	Yes	-	-
02	Landing Distance	-	-	Yes
03	Attributable Failures per 1000 Flying Hours	Yes	-	-
04	Life (Flying Hours)	Yes	-	-
05	Sustained Minimum Turn Radii at Sea Level, Max Reheat	Yes	-	-
06	Maximum speed at sea level	Yes	-	-
07	Maximum speed at 36,000 ft	Yes	Yes	-
08	Acceleration Time at Sea level from 200 knots to Mach 0.9	Yes	-	-
09	Instantaneous Turn Rate Sea Level, Max Reheat	Yes	-	-
10	Sustained Turn Rate at Mach 0.9 at 5000ft, Max Dry	Yes	-	-
Percentage currently forecast to be met		90%		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
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 which are being investigated 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.

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

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.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	78	0.4%
Approved Cost at Initial Gate	87	0.5%
Variation	-9	

5c. Duration of Assessment Phase

Date of Main Gate Approval	November 1987
Date of Initial Gate Approval	(Legacy Project) Pre SMART
Length of Assessment Phase [months]	-

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	-	16671	-
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	-	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	-	December 1998	-
Envelope within which capability was expected to be available at Initial Gate	-	-	-

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POST MAIN GATE PROJECT SUMMARY SHEET

TYPHOON FUTURE CAPABILITY PROGRAMME

Integrated Project Team Responsible:

TYPHOON

Single Point of Accountability for project capability:

Director Equipment Capability (Theatre Airspace)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

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 Royal Air Force's Typhoon fleet's multi-role capabilities.

The Typhoon aircraft commenced operational duties in June 2007 with an advanced air-to-air missile capability. A contract was placed in July 2006 for an initial precision air-to-surface capability on Royal Air Force Tranche 1 Typhoon which will be implemented by mid-2008. This initial capability will be complemented by a more comprehensive air-to-surface package which is contained within the first phase of the Future Capability Programme, under a contract signed in March 2007.

The first phase of the Future Capability Programme will integrate Paveway IV and the Litening III Laser Designator Pod onto Tranche 2 aircraft from 2012 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.

Subsequent phases of the Future Capability Programme are under consideration in parallel with negotiations on the third Tranche purchase of Typhoon.

1b. Associated projects

Critical to Achievement of ISD		**Critical to Initial Gate Requirement**	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
Eurofighter GmbH Airframe consortium comprising: Alenia BAE Systems EADS(CASA) 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 completive sub-contract elements.

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	436
Approved Cost at Main Gate	458
Variation	-22
In-year changes	-8

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	-8	Technical Factors	Reduction in CDEL achieved at contract negotiation (-£2m). Reduction in Cost of Capital due to reduced CDEL and more robust forecast accrual (-£6m)
Historic	-14	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the highest acceptable (not to exceed) estimates at Main Gate
Net Variation	-22		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	70

2d. Years of peak procurement expenditure

2008/2009	2010/2011

2e. Unit production cost *

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
-	-	-	-

*The project has been classified as a Development programme and as such there is no Unit Production Cost

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	Delivery to the Royal Air Force of autonomous precision Air to Surface military capability in 12 Tranche 2 aircraft

3b. Performance against approved in-service date

	Date
Current Forecast ISD	June 2012
Approved ISD at Main Gate	June 2012
Variation (Months)	0
In-year changes	0

3c. Reasons for variation from approved ISD

Date	**Variation (months)**	**Factor**	**Explanation**
-	-	-	-
Net Variation	-		

3d. Cost resulting from ISD variation

Type of Cost/Saving	**Cost £m**	**Saving £m**	**Explanation**
-	-	-	-

3e. Operational impact of ISD variation

-

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	To engage a defined set of targets.	Yes	-	-
02	To complete Air Policing duties.	Yes	-	-
03	To maintain Typhoon rates of effort.	Yes	-	-
04	To satisfy Communication and Information Systems interoperability requirements.	Yes	-	-
05	To complete a mission in zero visibility.	Yes	-	-
06	To complete the mission from zero to bright sunlight.	Yes	-	-
07	To maintain the Typhoon supportability.	Yes	-	-
Percentage currently forecast to be met		100%		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
-	-	-	-

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

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 beyond Full Operational Clearance (Minimum). 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.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	44	9%
Approved Cost at Initial Gate	44	9%
Variation	0	

5c. Duration of Assessment Phase

Date of Main Gate Approval	January 2007
Date of Initial Gate Approval	Combined Initial and Main Gate approval
Length of Assessment Phase [months]	-

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	372	444	458
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	-	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	January 2012	June 2012	June 2012
Envelope within which capability was expected to be available at Initial Gate	-	-	-

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POST MAIN GATE PROJECT SUMMARY SHEET

TYPE 45 DESTROYER

Integrated Project Team Responsible:

TYPE 45 DESTROYER

Single Point of Accountability for project capability:

Director of Equipment Capability (Above Water Effect)

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

The Type 45 is a new class of eight* 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 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 Type 45 Integrated Project Team is responsible for providing the Principal Anti-Air Missile System to the warship Prime Contractor.

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 Surface Fleet Solutions and VT Shipbuilding.

The BAE Systems contract has now been amended to reflect the Investment Approvals Board Six-Ship Approval gained in August 2007. This change has introduced a staged acceptance process for each ship which commences 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.

The past year has seen significant progress in the manufacture of the six ships. All ships are now in production following the cutting of steel for the sixth ship in January 2007. The third ship (HMS Diamond) was launched November 2007 and the fourth ship (HMS Dragon) is scheduled for launch in November 2008. The First of Class (HMS Daring) has successfully completed sea trials in August 2007, with further sea trials planned in April 2008. HMS Daring Acceptance off Contract is targeted for December 2008, with an approved In-Service Date of November 2010.

* The Type 45 is a planned class of eight ships. Approval has, so far, only been given for six ships. It is on the Approval of six ships that the Major Projects Report is presented.

1b. Associated projects

Critical to Achievement of ISD		Critical to Initial Gate Requirement	
Project Title	Forecast ISD	Project Title	Forecast ISD
-	-	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
BAE Surface Fleet Solutions (BAE Systems Electronics Ltd Farnborough)	Full development and production	Target Cost Incentive Fee Shareline	Single source
EURO Principal Anti-Air Missile System	Full scale engineering development and initial production including missiles for initial use.	Fixed price	Collaborative with France and Italy
EURO Principal Anti-Air Missile System	Follow-on ships production	Fixed price for five follow-on equipments	Collaborative with France and Italy
EUROSAM & UKAMS*	Production of missiles	Fixed price	Collaborative with France and Italy through Organisation Conjointe de Coopération en matière d'ARmement

* UKAMS is a wholly owned company of MBDA

SECTION 2: PROJECT COSTS

2a. Performance against approved cost

£m (outturn prices)	Procurement Cost
Current Forecast Cost	6464
Approved Cost at Main Gate	5475
Variation	+989
In-year changes	0

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
Historic	-49	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). Reduction in cost of capital (-£9m) due to lower than expected cash expenditure in 2005/06 (closing accrual higher than estimated). Transfer to Maritime Training Systems Integrated Project Team (-£35m) and associated Cost of Capital (-£1m). Difference in variation figures due to revision of Cost of Capital Charge (-£24m). Adjustment to previous years Cost of Capital figures due to system error (+£98m).
Historic	-38	Changed Budgetary Priorities	EP07 savings measure to reduce the quantity of Principal Anti-Air Missile System missiles (-£30m). A combination of Equipment Plan Options plus internal adjustments, and Cost of Capital. 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

Date	Variation (£m)	Factor	Explanation
			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) and the associated Cost of Capital (+£12m). Correction to forecast: costs wrongly attributed to ships seven & eight (+£26m). Principal Anti-Air Missile System increased cost of Longbow mooring (+£4m). Cost of Capital associated with estimated cost growth of ship Batch 2 reported at MPR04 (+£54m). Cost of Capital relating to Principal Anti-Air Missile System increased cost (exchange rate) and re-profiling (+£10m). Savings in ships capability (performance) to bring costs back to EP05 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	+1460	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) and associated cost of capital (+£18m). Costs omitted from EP05 and MPR05 relating to increase in ship build cost (+£52m) and associated cost of capital (+£5m). Higher than expected costs for 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). Principal Anti-Air Missile System missiles

Date	Variation (£m)	Factor	Explanation
			re-instated (+£173m). Increase in Cost of Capital due to corrections to Principal Anti-Air Missile System (+£82m).
Historic	+55	Exchange Rate	Pound to Euro rate worse than originally forecast (+£47m). Principal Anti-Air Missile System exchange rate (impact of rate at EP05) (+£8m).
Historic	+36	Technical Factors	Issues arising from migrating from Skynet 4 to Skynet 5 and to implement system growth (+£3m). Increase in Cost of Capital resulting from ISD slippage (+£33m).
Historic	-475	Risk Differential	Difference between the risk allowed for in the most likely (50%) and highest acceptable (90%) estimates at Main Gate (-£506m). Increase in risk due to re-calculation of Cost of Capital (+£31m).
Net Variation	+989		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	4117

2d. Years of peak procurement expenditure

2003/2004	2004/2005

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
582	649	6	6

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	The date to which the First of Class will meet the Customer's minimum operational requirement.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	November 2010
Approved ISD at Main Gate	November 2007
Variation (Months)	+36
In-year changes	0

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
Historic	+24	Procurement Strategy	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 ISD. (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

Date	Variation (months)	Factor	Explanation
			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).
Historic	-6	Risk Differential	Difference between the risk allowed for in the most likely (50%) and the highest acceptable (90%) estimate at Main Gate (-6 months).
Net Variation	+36		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
Historic	+2	-	Additional maintenance periods required to run-on Type 42 Destroyer for 11 months*
Historic	+1	-	Additional maintenance periods required to run-on Type 42 Destroyer for 7 months.
Historic	+196	-	Additional Type 42 run-on costs due to Type 45 slippage.
Total	+199		

3e. Operational impact of ISD variation

Delay in ISD further extends the period before a capability to defeat multiple attacks by sea-skimming missiles will be available, as well as the capability for Royal Navy escorts to provide tactical control of combat aircraft.

* Relates to slippage in ISD of Type 45 First of Class only, to align with the definition of ISD at Section 3a.

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	**Principal Anti-Air Missile System**. The Type 45 shall be able to protect with a Probability of Escaping Hit of {x} all units operating within a radius of 6.5km, against up to 8 supersonic sea skimming missiles arriving randomly within {y} seconds.	Yes	-	-
02	**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	-	-
03	**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	-	-
04	**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	-	-
05	**Embarked Military Force**. The Type 45 shall be able to operate an Embarked Military Force of at least 30 deployable troops.	Yes	-	-
06	**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	-	-
07	**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	-	-
08	**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	-	-
09	**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	-	-
Percentage currently forecast to be met		100 %		
In-Year Change		0		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
August 2007	KUR 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.
August 2007	KUR 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	KUR 02	Changed Budgetary Priorities	Revised programme to achieve earliest possible ISD leads to a lower level of Combat Management System functionality at ISD.
Historic	KUR 03	Changed Budgetary Priorities	Revised programme to achieve earliest possible ISD leads to a lower level of Combat Management System functionality at ISD.
Historic	KUR 04	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 ISD only Lynx capability will have been demonstrated. Ability to operate Lynx but not Merlin will be demonstrated by Full Operating Capability ISD. Merlin will be demonstrated beyond ISD

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of 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 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 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.

5b. Cost of the Assessment Phase*

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	232	3.5%
Approved Cost at Initial Gate	213	3.2%
Variation	+19	

5c. Duration of Assessment Phase

Date of Main Gate Approval	July 2000
Date of Initial Gate Approval	July 1991†
Length of Assessment Phase [months]	108‡

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	-	5000	5475
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate	-	-	7689

* The Assessment Phase costs approved at Initial Gate did not take into account that all expenditure on the Westinghouse Rolls-Royce 21 engine was to be treated as Assessment Costs rather than Manufacturing Costs.

† Type 45 Destroyer is a legacy project that drew upon the concept work of Project Horizon and Future Frigate. Type 45 did not formally go through Initial Gate, but for MPR2000, the NAO agreed that EP11/91 should be equated as Initial Gate for Type 45.

‡ 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..

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	-	May 2007	November 2007
Envelope within which capability was expected to be available at Initial Gate	-	-	December 2002

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POST MAIN GATE PROJECT SUMMARY SHEET

WATCHKEEPER

Integrated Project Team Responsible:

TACTICAL UNMANNED AIR VEHICLE

Single Point of Accountability for project capability:

Director Equipment Capability (Intelligence, Surveillance, Target Acquisition & Reconnaissance)

Senior Responsible Owner for broader capability:

Assistant Chief of the Air Staff

SECTION 1: ABOUT THE PROJECT

1a. Project description, progress and key future events

Watchkeeper will provide the operational commander with a 24 hour, all weather, intelligence, surveillance, target acquisition and reconnaissance capability supplying accurate, timely and high quality imagery to support decision making. The system will consist of unmanned air vehicles, sensors, data links and ground control stations. Watchkeeper is planned to be delivered through an incremental programme to allow the system to benefit from both existing and developing sensors and air vehicle technology.

In July 2005, following an international competition, Thales (UK) was awarded the Watchkeeper Demonstration and Manufacture phase contract as prime contractor. Major project milestones completed to date include the System Design Review in December 2005, the Preliminary Design Review in July 2006 and the Critical Design Review of the air vehicle in December 2006. The System Critical Design Review was conducted in May 2007 and finalised in September 2007 with the completion of the de-icing Critical Design Review.

Key future events include the Automatic Take Off & Landing System demonstration which has been rescheduled for June 2008, taking into account the decision made to prioritise the development of the related Global Positioning Take-off & Landing System for the Hermes 450 Urgent Operational Requirement.

1b. Associated projects

Critical to Achievement of ISD		Critical to Initial Gate Requirement	
Project Title	Forecast ISD	Project Title	Forecast ISD
Bowman and Common Battlefield Application Toolset, Digitisation Battlespace Land Infrastructure and Platform Battlefield Information System Application Programme 5	2008	-	-

1c. Procurement strategy

Contractor(s)	Contract Scope	Contract Type	Procurement Route
Thales Defence Ltd, Weybridge	Demonstration to Manufacture	Firm price	International competition

SECTION 2: PROJECT COSTS

2a. Performance against approved cost.

£m (outturn prices)	Procurement Cost
Current Forecast Cost	898
Approved Cost at Main Gate	920
Variation	-22
In-year changes	-3

2b. Reasons for variation from approved cost

Date	Variation (£m)	Factor	Explanation
March 2008	-5	Accounting Adjustments and Re-definitions	Reduction in Cost of Capital figure due to re-profiling of funding as result of Options.
March 2008	+2	Changed Budgetary Priorities	Increase in Cost due to re-profiling of funding as result of Options.
Historic	-5	Accounting Adjustments and Re-definitions	Reduction in Cost of Capital figure due to a revision in accruals included within the forecast cost.
Historic	-1	Change in associated project	Delay in start date of Defence Estates tasks into 2007/08.
Historic	-13	Risk Differential	Difference between the risk allowed for in the most likely (50%) and highest acceptable (70%) estimates at Main Gate.
Net Variation	-22		

2c. Expenditure to date

Expenditure to 31 March 2008 (£m)	281

2d. Years of peak procurement expenditure

2009/2010	2010/2011

2e. Unit production cost

Unit Production Cost (£m)		Quantities Required	
at Main Gate	Current	at Main Gate	Current
-	0.943	54	54

SECTION 3: PROJECT TIMESCALE

3a. Definition of in-service date

ISD Definition:	One sub-unit trained and equipped to support a Medium Scale of Effort deployment.

3b. Performance against approved in-service date

	Date
Current Forecast ISD	December 2010
Approved ISD at Main Gate	February 2011
Variation (Months)	-2
In-year changes	+6

3c. Reasons for variation from approved ISD

Date	Variation (months)	Factor	Explanation
February 2008	-1	Procurement Strategy	Agreement to provide underpinning design data has reduced airworthiness and Release To Service risks
January 2008	-2	Technical Factors	Alternative Trials arrangements now contracted
November 2007	+9	Technical Factors	Changes to the planned trials site have caused delays to Trials and Evaluation
Historic	-8	Risk Differential	Difference between the risk allowed for in the most likely (50%) and highest acceptable (90%) estimates at Main Gate.
Net Variation	-2		

3d. Cost resulting from ISD variation

Type of Cost/Saving	Cost £m	Saving £m	Explanation
-	-	-	-

3e. Operational impact of ISD variation

-

SECTION 4: KEY USER REQUIREMENTS

4a. Performance against approved key user requirements

KUR Serial	Key Requirement	Forecast to be Met	At Risk	Not to be Met
01	Watchkeeper shall have at least a 95% probability of detecting all 5 of 5 static NATO standard tank targets within an open area of 4 km² in no more than 8 minutes.	Yes	-	-
02	In support of unit operations Watchkeeper shall have at least a 95% probability of identifying all 5 of 5 static NATO standard tank targets within a 4 km² area within 30 minutes of receipt of tasking.	Yes	-	-
03	To concurrently support two Medium Scale operations (one of 6 months duration and one enduring), Watchkeeper shall provide imagery and imagery intelligence concurrently to at least 8 Headquarters comprising a total of at least 10 Tasking Users throughout the battlespaces of 2 disparate operational theatres.	Yes	-	-
04	Watchkeeper shall satisfy its tasking, world-wide, day and night, under climatic conditions A2, A3, B1, B2, B3, C0 and C1 as defined in Defence Standard 00-35 and Defence Standard 00-970.	Yes	-	-
05	Watchkeeper shall satisfy its tasking, world-wide, day and night, on surface targets located at up to 4000m altitude Above Mean Sea Level International Standard Atmosphere.	Yes	-	-
06	Watchkeeper shall be transportable by two C130J Mk 4 to support theatre entry force operations for one Battlefield Misson.	Yes	-	-
07	Watchkeeper shall not constrain the tactical mobility of its Users.	Yes	-	-
08	Watchkeeper shall satisfy its tasking for 24 hours per day for a period of at least 14 days with an Operational Availability of at least 85%.	Yes	-	-
09	Watchkeeper shall enable training for War fighting Operations.	Yes	-	-
10	Watchkeeper shall exchange data with Bowman and dependent Battlefield Information System Applications to at least NATO interoperability level 3 (seamless sharing of data).	-	-	Yes
11	Watchkeeper shall provide the location of static targets to within an absolute targeting error not exceeding 10 m in the horizontal circular error (at 90% confidence levels).	Yes	Yes	-
Percentage currently forecast to be met		91 %		
In-Year Change		-1		

4b. Reasons for variation against approved key requirements

Date	Key Requirement	Factor	Explanation
March 2008	KUR 10	Technical Factors	The data exchange in the KUR is of a tactical nature (ie reports on tasking, intelligence, airspace etc), rather than Unmanned Air Vehicle control at NATO Interoperability level 3 which is not required or sensible and requires amendment – the revised KUR is currently on target to be met.
March 2008	KUR 11	Technical Factors	Quantities of Electro Optical/Infra-Red sensors with laser range finders require re-negotiation. Minor risk, expected to be resolved for Initial Operating Capability.

SECTION 5: HISTORY UP TO MAIN GATE APPROVAL

5a. Description of the Assessment Phase

Watchkeeper is a consolidation of the Sender and Spectator projects. Initial Gate approval was received for Sender in November 1999 and approval for a joint Assessment Phase for both projects was given in July 2000.

The acquisition strategy has been based on selecting Unmanned Air Vehicle systems to suit a defined capability requirement rather than an air vehicle-centred approach. Through evaluation and system concept demonstration, the Assessment Phase has driven down technical and schedule risks and derived the whole life costs associated with the proposed options. User and System Requirements were identified and revalidated. Trade-off activity was undertaken, taking full account of the impact across all Lines of Development and supported by balance of investment studies.

Alternative acquisition options have been considered. PPP/PFI was not deemed appropriate for the provision of a tactical capability deployed in theatre, due to the potential risks to contractor personnel and the required levels of availability as well as legal implications. Collaboration was explored during the early stages of the Assessment Phase, but it was not possible to align requirements. There is continuing dialogue with and between allied nations on matters of requirement definition, technology, operational experience and acquisition. The need for significant system integration with the emerging Network Enabled Capability requirements led the Defence Procurement Agency and the potential contractors to adopt an incremental approach. This approach also supports the Force Readiness Cycle and provides for a phased uplift of capability at discrete intervals.

Opportunities to enhance Watchkeeper beyond the Full Operating Capability have been considered during the Assessment Phase and will inform future investment decisions.

Following a competitive process, Thales (UK) was announced as preferred bidder in July 2004. The programme completed the Assessment Phase of the acquisition cycle in July 2005, when Main Gate approval was given to proceed to the Demonstration and Manufacture phase.

5b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase cost	Proportion of total estimated procurement expenditure
Actual Cost	65	7%
Approved Cost at Initial Gate	52	6%
Variation	+13	

5c. Duration of Assessment Phase

Date of Main Gate Approval	July 2005
Date of Initial Gate Approval	November 1999
Length of Assessment Phase [months]	68

5d. Cost boundaries at Initial Gate and Main Gate Approvals

£m (outturn prices)	Lowest	Budgeted For	Highest
Cost of Demonstration and Manufacture Phase forecast at Main Gate	881	907	920
Expected envelope of costs to support Demonstration and Manufacture Phase at Initial Gate*	-	-	-

5e. ISD boundaries at Initial Gate and Main Gate Approvals

	Earliest	Budgeted For	Latest Acceptable
Forecast ISD at Main Gate	February 2010	June 2010	February 2011
Envelope within which capability was expected to be available at Initial Gate*	-	-	-

* Initial Gate forecasts are only available for the Sender element of the programme. These have been omitted as any comparison to the current programme could be misleading.

PRE MAIN GATE PROJECT SUMMARY SHEET

EAGLE

Integrated Project Team Responsible:

SENTRY

Single Point of Accountability for project capability:

Director Equipment Capability (Intelligence Surveillance Target Acquisition & Reconnaissance)

Senior Responsible Owner for broader capability:

Capability Manager (Information Superiority)

SECTION 1: ABOUT THE REQUIREMENT

The Royal Air Force's fleet of E-3D Sentry aircraft entered service in 1992 to provide an Airborne Early Warning capability, through extended surveillance for air attack and limited functions to control and direct air operations. During successive operations it was identified that an Air Warning and Control System capability (to carry out surveillance, provide communications and command and control air battles) was required. The lack of an Air Battle Management capability (including the control of defensive and offensive fighter aircraft, management of air-to-air refuelling and de-confliction and safety of friendly aircraft) and deficiencies in Electronic Support Measures (sensors for detection of electronic pulses emitted by aircraft, missiles, ground based and maritime radar systems), together with equipment obsolescence issues, were identified as barriers to providing future Defence capability. Project Eagle will upgrade the mission system by replacing the onboard computer hardware and software, and the operator consoles. The Electronic Support Measures will also be replaced along with elements of the communications systems. The project will also provide ground based simulation, mission planning and support facilities, combined with an Integrated Logistic Support package, which includes the training of operators, the provision of technical manuals, and a United Kingdom repair/replacement service.

During the concept phase, other nations' E-3 upgrade programmes were investigated to determine their suitability for providing the required capability and all were dismissed on either technical and/or financial grounds. Studies indicated that industry could provide a solution and a competitive acquisition approach was proposed in the Initial Gate Business Case.

SECTION 2: THE ASSESSMENT PHASE

Note: Actual in-service dates and costs are not set until projects reach the point in time when the main investment decision is made i.e. Main gate approval. Until this point all costs and dates are outline assumptions solely for internal planning purposes.

2a. Description of the Assessment Phase

The approval of the Initial Gate business case endorsed a competitive acquisition strategy and, in January 2005, six potential Prime Contractors were invited to submit proposals to satisfy the Eagle capability and user needs, based on a detailed set of system requirements.

In May 2005, recognising that some elements of the communications systems on the aircraft were forecast to become obsolescent, the scope of project Eagle was amended to include the replacement of those elements. This was approved by the Investment Approvals Board in August 2005.

In May 2006 the Investment Approvals Board noted the project review board's decision to down select from six to two potential Prime Contractors: Boeing and Lockheed Martin. It was intended that each of these two companies would be invited to construct a technical demonstrator for the mission system and refine their earlier proposals for the Electronic Support Measures and communication system replacements. However, in July 2006, following an MoD financial commitment review the award of contracts for the technical demonstration phase did not take place. This resulted in the cessation of any further development by Lockheed Martin, whilst Boeing was fortunate in that it was able to continue to develop its system (known as Block 40/45) as part of a separately funded requirement for the United States Air Force.

In October 2006, the Eagle project board determined that the risks associated with the acquisition of the Boeing solution were acceptable and instructed the Eagle project team to cancel the existing competition based procurement strategy and consider the acquisition of the Eagle capability, based on the Boeing solution.

In parallel, during late 2006/early 2007 two funding options were proposed by the project sponsor; one to defer the project by four years and one for two years. The four year deferral option was later withdrawn; primarily because of the adverse affect on Defence capability and the projected cost of maintaining the increasingly obsolescent legacy systems. The two year deferral option was amended to a 'de-scope' option on the basis that it would be possible to change some elements of the UK requirement to take advantage of the Boeing Block 40/45 solution, being taken forward for the United States Air Force. It was considered that this was the only way in which the necessary capability could be acquired and still maintain the planned in-service date. The Defence Management Board approved an increased and revised funding profile, in January 2007, and the argument for a single source approach was contained in a Review Note approved by the Investment Approvals Board in March 2007.

During the early part of 2008 Project Eagle was included in a MoD departmental spending review programme, that resulted in the recommendation to defer the project by two years. This recommendation was upheld and approved at ministerial level in April 2008.

As a result of the deferral it has not yet been possible to determine robust planning assumption information for the cost to complete the Assessment Phase (Section 2b below), the introduction of the capability (Section 2c, below) or the costs for the Demonstration and Manufacture phase (section 2d, below) of the project.

2b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase Cost
Forecast Cost	4*
Approved Cost at Initial Gate	17
Variation	-13

2c. Explanation of the need and boundaries of current internal planning assumptions for introduction of the capability

	Earliest	Latest
Envelope within which capability will be available	***	***

2d. Boundaries of current internal cost assumptions for Demonstration and Manufacture Phase

	Lowest	Highest
Envelope of costs to support Demonstration and Manufacture Phase	***	***

* Only includes costs up to April 2008, the point at which the deferral option was approved.

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PRE MAIN GATE PROJECT SUMMARY SHEET

FUTURE AIRCRAFT CARRIER

Integrated Project Team Responsible:

FUTURE AIRCRAFT CARRIER (CVF)

Single Point of Accountability for project capability:

Director Equipment Capability (Above Water Effect)

Senior Responsible Owner for broader capability:

Carrier Strike Senior Responsible Owner

SECTION 1: ABOUT THE REQUIREMENT

The requirement for the Future Aircraft Carrier was endorsed in the 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. 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. Future Aircraft Carrier's offensive air power will be provided primarily by the Future Joint Combat Aircraft. The Carrier Aircraft Group will also operate the Maritime Airborne Surveillance and Control system together with helicopters from all three services in a variety of roles that include anti-submarine/anti-surface warfare, attack and support.

SECTION 2: THE ASSESSMENT PHASE

Note: Actual in-service dates and costs are not set until projects reach the point in time when the main investment decision is made i.e. Main gate approval. Until this point all costs and dates are outline assumptions solely for internal planning purposes.

2a. Description of the Assessment Phase

Future Aircraft Carrier 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 will enable 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 end January 2006 at a revised total cost of £297m (following receipt of Cost Certificates from the alliance participants).

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) and £254m (at 50% confidence). The Demonstration Phase should complete in mid 2008 with total expenditure to 31st March of £252m. 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 £3.9billion 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.

2b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase Cost
Forecast Cost	297
Approved Cost at Initial Gate	118
Variation	+179

2c. Explanation of the need and boundaries of current internal planning assumptions for introduction of the capability

	Earliest	Latest
Envelope within which capability will be available	***	***
The Future Aircraft Carrier is a key enabling component of carrier strike, capable of delivering the full level of offensive air effort, at medium scale, from the sea. The two Future Aircraft Carriers will replace the current in-service Aircraft Carriers, HMSs Ark Royal and Illustrious, which have planned Out of Service Dates of 2012 and 2015 respectively. The decision to divide Demonstration and Manufacture into 2 sequential main approvals was taken to ensure that there is greater certainty on overall time and cost prior to committing to manufacture and to allow for coherency with the Defence Industrial Strategy. The Investment Approvals Board and Treasury approved the demonstration phase of the project in December 2005. Main Gate approval for manufacturing was announced by Secretary of State on 25th July 2007.		

2d. Boundaries of current internal cost assumptions for Demonstration and Manufacture Phase

	Lowest	Highest
Envelope of costs to support Demonstration and Manufacture Phase	***	***

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PRE MAIN GATE PROJECT SUMMARY SHEET

FUTURE INTEGRATED SOLDIER TECHNOLOGY

Picture not available.

Integrated Project Team Responsible:

DISMOUNTED CLOSE COMBAT

Single Point of Accountability for project capability:

Director Equipment Capability (Ground Manoeuvre)

SECTION 1: ABOUT THE REQUIREMENT

The Future Integrated Soldier Technology programme aims to integrate both current and emerging key technologies that British dismounted soldiers require for them to maintain their position in the forefront of capability. The programme will ensure the future soldier has equipment that optimises effectiveness, reduces physical and psychological load, and minimises the effects of combat stress and the risks of human error.

Historically, soldiers have been equipped in a piecemeal manner. The programme will consider the dismounted soldier as a system, and the eight-man section as a virtual platform. This 'system of systems' approach, demonstrated successfully during the Concept Phase, will fundamentally improve the capabilities of troops engaged in dismounted close combat. It will deliver an integrated suite of equipment encompassing the NATO domains of Command, Control, Communications, Computers and Information, lethality, mobility, survivability and sustainability.

SECTION 2: THE ASSESSMENT PHASE

Note: Actual in-service dates and costs are not set until projects reach the point in time when the main investment decision is made i.e Main Gate approval. Until this point all costs and dates are outline assumptions solely for internal planning purposes.

2a. Description of the Assessment Phase

Initial Gate approval was achieved in August 2001. Four companies submitted tenders for the Assessment Phase prime contract, two of whom were selected to take part in a competitive planning phase starting in August 2002. The selection of Thales UK Ltd as the Assessment Phase prime contractor was announced on 12 March 2003.

A number of factors have caused the duration of the Assessment Phase to be extended. Critical trials planned for Summer 2004 were delayed by three months due to commitment of troops to

operations overseas. Problems were encountered on a subsequent major trial held in Autumn 2005, as some systems proved to be short of the required levels of technical readiness and insufficiently robust to allow adequate data to be collected to inform the Main Gate Business Case. Consequently, more time was needed to mature our understanding of the requirement and of the final technical solution. Successful Combined Operational Effectiveness and Investment Appraisal trials followed and produced the required data. At the start of 2007/08 work on the main programme was suspended for five months (although the impact on the date of Main Gate was not commensurate) to allow Thales to deliver two Urgent Operational Requirements using technology arising out of Future Integrated Soldier Technology, which will provide an early benefit to troops engaged on current operations.

As a consequence of the problems experienced on the Autumn 2005 trials, an incremental procurement strategy has been adopted, allowing technology to be exploited as it matures, thereby de-risking the programme while not losing sight of the aim of an integrated suite of equipment. Each increment will have its own Main Gate approval, preceded by an Assessment Phase, meaning that there will be considerably more Assessment work overall in Future Integrated Soldier Technology than was forecast when only a single Main Gate was envisaged. The current Assessment Phase, now the Assessment Phase for the first increment, will include pre-Main Gate competitions at sub-system level for Surveillance and Target Acquisition and Command, Control, Communications, Computers and Intelligence, the results of which will be reflected in the Main Gate Business Cases. Thales are currently under contract until 31 December 2008. The first Main Gate Business Case, covering Surveillance and Target Acquisition, is forecast to be submitted in October 2008.

2b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase Cost
Forecast Cost	142*
Approved Cost at Initial Gate	26†
Variation	+116

2c. Explanation of the need and boundaries of current internal planning assumptions for introduction of the capability

	Earliest	Latest
Envelope within which capability will be available	***	***

The Future Integrated Soldier Technology project is intended to provide dismounted soldiers with an integrated suite of equipment that optimises their effectiveness on the battlefield. Soldiers have hitherto been equipped in a piecemeal manner, but Future Integrated Soldier Technology will regard the individual soldier as a system.

A series of Main Gate Business Cases will be submitted for approval as elements of the work currently being carried out in the Assessment Phase reach maturity. The Main Gate Business Cases will seek approval for demonstration and production of a range of equipment to deliver the required capability.

* Represents total forecast cost for Assessment Phases 1-3.

† Approval for Assessment Phase 1 only. Due to the incremental nature of this programme, this approval does not include further Assessment Phases.

2d. Boundaries of current internal cost assumptions for Demonstration and Manufacture Phase

	Lowest	Highest
Envelope of costs to support Demonstration and Manufacture Phase	***	***

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PRE MAIN GATE PROJECT SUMMARY SHEET

FUTURE RAPID EFFECT SYSTEM

Picture not available.

Integrated Project Team Responsible:

FUTURE RAPID EFFECT SYSTEM

Single Point of Accountability for project capability:

Director Equipment Capability (Ground Manoeuvre)

Senior Responsible Owner for broader capability:

Capability Manager (Battlespace Manoeuvre)

SECTION 1: ABOUT THE REQUIREMENT

The MoD has outlined a two track approach to meeting its armoured fighting vehicle requirement. In the short term it has an urgent need to upgrade the current fleet. In the longer term it needs to equip United Kingdom Armed Forces with a medium weight capability that would be able to project power world-wide rapidly. Future Rapid Effect System is the response to this longer term requirement.

Future Rapid Effect System will deliver a new, medium weight armoured vehicle fleet with higher levels of deployability and survivability than the current fleet, with the potential to grow its capability as new technology becomes available. The current planning assumption is to deliver over 3,000 vehicles. The original requirement was for 1,757 vehicles but this was increased in 2004 under an equipment programme option when the Total Fleet Requirement had been established.

Future Rapid Effect System will be part of a balanced force consisting of Heavy, Medium and Light brigades giving the ability to deploy forces rapidly with higher levels of firepower, protection and mobility than Light Forces can achieve, but with deployability and agility that cannot be achieved by Heavy Forces. The current threat on operations, particularly from rocket propelled grenades, heavy machine guns and mines/improvised explosive devices, has reinforced the need for adequately protected armoured vehicles.

Future Rapid Effect System will replace the Army's obsolescent Saxon, FV 430 and Combat Vehicle Reconnaissance (Tracked) vehicles.

SECTION 2: THE ASSESSMENT PHASE

Note: Actual in-service dates and costs are not set until projects reach the point in time when the main investment decision is made i.e Main Gate approval. Until this point all costs and dates are outline assumptions solely for internal planning purposes.

2a. Description of the Assessment Phase

The Future Rapid Effect System fleet will encompass 16 roles. The total capability is expected to comprise five families of vehicles; Utility, Reconnaissance, Medium Armour, Manoeuvre Support and Basic Capability Utility. An incremental approach to capability delivery is envisaged with an Initial Operating Capability comprising the first elements of the Utility fleet followed by a phased approach to delivering the full capability in planned increments thereafter. The initial Assessment Phase was approved in April 2004 and has focused primarily on those roles that will make up the Initial Operating Capability. The Assessment Phase has involved analysing the options for meeting the requirement, managing the programme of technical risk reduction work and developing the acquisition strategy for future phases.

Options for meeting the Utility Vehicle requirement included solutions currently available Off The Shelf, existing development programmes and new start options. Vehicles currently available off the shelf were assessed to be unable, now or in the future, to carry the weight necessary to meet the Future Rapid Effect System protection requirements. New start options were considered too long and too costly and therefore both Off The Shelf and new start options were discounted. An assessment of platforms currently in development indicated that they have the potential to operate at the weight necessary to provide adequate protection. The potential of current development vehicles to meet the Future Rapid Effect System requirement has therefore been the basis of our more detailed assessment of the candidate designs in 2007.

The Acquisition Strategy has been approved. The approved approach is to establish an alliance led by the Department, who will be supported by a strong and independent industrial player acting in the role of System of Systems Integrator. The strategy includes a strong competitive element with the Utility Vehicle Design, the System of Systems Integrator and the Utility Vehicle Integrator to be selected by competition.

The competition to select the Utility Vehicle Design was formally launched in January 2007 when the Department invited expressions of interest from industry. This invitation represented a single point of entry into both the Utility Vehicle Design and Utility Vehicle Integrator competitions. Following a pre-qualification process, three designs (Boxer designed by ARTEC, Vehicule Blinde de Combat d'Infantrie designed by Nexter and Piranha designed by Mowag and offered by General Dynamics (UK) Ltd) were selected to go forward into the formal Utility Vehicle Trials, held during the Summer of 2007. The Trials included a demonstration of current performance, an assessment of how the designs could best be exploited to meet the needs of the Future Rapid Effect System programme; and a review of commercial aspects of the designs. In November 2007, MoD announced the completion of the Trials and that a recommendation, based primarily on technical design considerations, had been made. Further work was then undertaken to consider the commercial implications of the three competing designs. This work was completed in December 2007 and the original recommendation was unchanged. The MoD announced on 8 May 2008 that PIRANHA V had been selected as the provisional preferred Utility Vehicle design.

The competition to select the System of Systems Integrator was launched in March 2007 when the Department invited expressions of interest from industry. On completion of the assessment of responses to the pre-qualification questionnaire, the team of Thales and Boeing was announced as the preferred bidder in October 2007. On successful completion of contract negotiations, the initial contract was awarded in January 2008.

The competition to select the Utility Vehicle Integrator progressed to the pre-qualification stage with the release to industry of a questionnaire in October 2007. Responses are now being

considered by the Department. Preparation for the Assessment Phase for the Reconnaissance, Medium Armour and Manoeuvre Support families has commenced and initial scoping study contracts have been awarded to industry. A two stage approach to the main investment decision is envisaged. Stage 1 will be prior to the launch of the Demonstration Phase with Stage 2 releasing funding for the Manufacture Phase.

2b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase Cost
Forecast Cost	319*
Approved Cost at Initial Gate	113†
Variation	+206

2c. Explanation of the need and boundaries of current internal planning assumptions for introduction of capability

	Earliest	Latest
Envelope within which capability will be available	***	***
Future Rapid Effect System will deliver a new, medium weight armoured vehicle fleet with higher levels of deployability and survivability than the current fleet, with the potential to grow its capability as new technology becomes available. The detailed analysis of the candidate current development platforms will enable the performance, cost, schedule and risks of these candidate solutions to be fully understood and will inform the main investment decision. The In-Service Date covers only the Initial Operating Capability.		

2d. Boundaries of future Demonstration and Manufacture phase costs

	Lowest	Highest
Envelope of costs to support Demonstration and Manufacture Phase‡	***	***

* Includes the costs of the Assessment Phase for the Initial Operating Capability roles and also the Assessment Phase for the Specialist roles.

† Specifically only included approval for the initial Assessment Phase for the Initial Operating Capability roles.

‡ Future Demonstration and Manufacture Phase Costs highly sensitive to vehicle numbers, which will be agreed at the main investment decision when affordability will need to be established.

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PRE MAIN GATE PROJECT SUMMARY SHEET

FUTURE STRATEGIC TANKER AIRCRAFT

Integrated Project Team Responsible:

FUTURE STRATEGIC TANKER AIRCRAFT

Single Point of Accountability for project capability:

Director Equipment Capability (Expeditionary Logistics & Support)

Senior Responsible Owner for broader capability:

Capability Manager (Information Superiority)

SECTION 1: ABOUT THE REQUIREMENT

The Future Strategic Tanker Aircraft is planned to replace the Air to Air Refuelling and some elements of 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.

SECTION 2: THE ASSESSMENT PHASE

Note: Actual in-service dates and costs are not set until projects reach the point in time when the main investment decision is made i.e Main Gate approval. Until this point all costs and dates are outline assumptions solely for internal planning purposes.

2a. Description of the Assessment Phase

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

The Assessment Phase has confirmed industry's ability to meet the service requirement, programme timescales and costs and determined that the inclusion of Air Transport capability in the contract will represent value for money. It has also clarified the manning and personnel implications. Ministers announced on 6 June 2007 that it had been decided to proceed towards financial and contractual close which was achieved on 27 March 2008.

2b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase Cost
Forecast Cost	38
Approved Cost at Initial Gate	13
Variation	+25

2c. Explanation of the need and boundaries of current internal planning assumptions for introduction of the capability

	Earliest	Latest
Envelope within which capability will be available	***	***
After a competition and several years of complex Private Finance Initiative negotiations, AirTanker Ltd, a consortium comprising EADS, Rolls Royce, Cobham, and Thales were judged to offer the best prospective PFI solution. VT Group joined the consortium shortly after. Following subsequent resolution of key commercial terms, Secretary of State announced on 28 February 2005 that AirTanker Ltd had been selected as Preferred Bidder for Future Strategic Tanker Aircraft. Ministers announced on 6 June 2007 that it had been decided to proceed towards financial and contractual close on the Future Strategic Tanker Aircraft PFI. Following Airtanker Ltd's successful completion of the fund raising process, financial and contractual close was achieved on 27 March 2008.		

2d. Boundaries of current internal cost assumptions for Demonstration and Manufacture Phase

	Lowest	Highest
Envelope of costs to support Demonstration and Manufacture Phase	***	***

PRE MAIN GATE PROJECT SUMMARY SHEET

INDIRECT FIRE PRECISION ATTACK

Picture not available.

Integrated Project Team Responsible:

ARTILLERY SYSTEMS

Single Point of Accountability for project capability:

Director Equipment Capability (Deep Target Attack)

SECTION 1: ABOUT THE REQUIREMENT

Indirect Fire Precision Attack will provide, by incremental acquisition, a suite of munitions for indirect precision attack of static, mobile, and manoeuvring targets, extending to ranges in excess of 150 kilometres.

The capability required under Indirect Fire Precision Attack will be delivered through a structured programme of Assessment, Demonstration and Manufacture phases. In light of the incremental nature of the programme, a revised approach to the overall Indirect Fire Precision Attack strategy has been agreed with approval for a continuing Assessment Phase leading to the procurement of individual components via a series of Main Gate Business Cases. A Main Gate Business Case for the first component, a 155mm Ballistic Sensor Fused Munition, was approved in July 2007, with a target In Service Date of September 2011. The second component will be the Loitering Munition (see Section 2c below).

The Assessment Phase is indicating that the Indirect Fire Precision Attack capability is expected to be achieved by a mixture of guided rockets, enhanced artillery shells and Loitering Munitions, using a variety of different payloads (Loitering Munitions are unmanned airborne vehicles with a warhead, designed to fly in a holding pattern after launching until deployed, with a man-in-the-loop controller, to a target). Indirect Fire Precision Attack munitions will be used by the Multiple Launch Rocket System, the AS90 self-propelled howitzer [the future Lightweight Mobile Artillery Weapon System Rocket Launcher] and in the case of Loitering Munitions possibly as a stand-alone platform. The mix of munitions procured under the programme will have a range of In-Service Dates: this multi-solution approach will be managed through an incrementally based procurement strategy.

SECTION 2: THE ASSESSMENT PHASE

Note: Actual in-service dates and costs are not set until projects reach the point in time when the main investment decision is made i.e Main Gate approval. Until this point all costs and dates are outline assumptions solely for internal planning purposes.

2a. Description of the Assessment Phase

The Initial Gate Business Case for Indirect Fire Precision Attack was approved in May 2001. Following competition using a Capability Based Questionnaire, an Assessment Phase contract was awarded in May 2002 to a consortium of companies led by BAE Systems Strategic Capability Solutions (BAE Systems Future Systems). This first Assessment Phase was designed to provide, and iteratively update, a 'Route Map' to achieving the full Indirect Fire Precision Attack capability with recommendations about the type, quantities and mix of munitions.

In line with the approved Indirect Fire Precision Attack strategy for an incremental programme, a series of Assessment Phases will be conducted, each being approved by a separate Review Note. A contract for the second Assessment Phase was placed with the BAE Systems Strategic Capability Solutions (BAE Systems Future Systems) led consortium in January 2007. This included the Loitering Munition Capability Demonstration programme, which is due to complete in late 2008.

In light of the incremental procurement strategy, procurement of components will be approved via a series of Main Gate Business Cases. After each component receives Main Gate approval, it is split out as a separate programme in its own right. However, each capability will continue to be included in the ongoing operational analysis work, so that the overall mix and quantity of munitions to be procured can be refined as the programme progresses. In the case of Loitering Munitions, further Assessment Phase work is required in the short term which will be delivered as part of the Complex Weapons Assessment Phase. This was submitted for approval to the Investment Approvals Board early in Financial Year 2008/09.

A contract for the Demonstration and Manufacture of the first component, Ballistic Sensor Fuzed Munition, was placed with Gesellschaft für Intelligente Wirksysteme mbH in September 2007.

2b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase Cost
Forecast Cost	212*
Approved Cost at Initial Gate	24†
Variation	+188

* Includes costs for Assessment Phase 2, Loitering Munition Capability Demonstration of £49m which was approved in June 2006 review note, and costs resulting from the Complex Weapon Assessment Phase.

† Covers approval of Assessment Phase 1. Due to the incremental nature of the programme, this approval does not include other assessment phase activities.

2c. Explanation of the need and boundaries of current internal planning assumptions for introduction of the capability

	Earliest	Latest
Envelope within which capability will be available	***	***
This project will provide the MoD with an indirect fire precision attack capability, to be acquired on an incremental basis. The above dates relate to the current planning assumptions for the second increment of the Indirect Fire Precision Attack programme, that is the introduction into service (initial operating capability) of the Loitering Munition. The assumption has changed from MPR07 due to Ballistic Sensor Fuzed Munition achieving Main Gate and becoming a programme in its own right.		

2d. Boundaries of current internal cost assumptions for Demonstration and Manufacture Phase

	Lowest	Highest
Envelope of costs to support Demonstration and Manufacture Phase	***	***

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PRE MAIN GATE PROJECT SUMMARY SHEET

MARITIME, AIRBORNE, SURVEILLANCE AND CONTROL

Integrated Project Team Responsible:

FUTURE AIRCRAFT CARRIER

Single Point of Accountability for project capability:

Director Equipment Capability (Intelligence Surveillance Target Acquisition & Reconnaissance)

Senior Responsible Owner for broader capability:

Carrier Strike Senior Responsible Owner.

SECTION 1: ABOUT THE REQUIREMENT

The requirement is to continue the provision of airborne surveillance and battle management capability for Carrier Strike (delivery of full offensive air effort, at medium scale, from the sea) as currently achieved by the Sea King Mk7 Airborne Surveillance and Control variant. This capability will support naval operations and shipping, especially the Future Aircraft Carrier; and land operations in littoral regions, e.g. amphibious landings. The system will conduct surveillance of air and surface targets, with the concurrent battle management capability allowing the command of assigned assets such as future UK Joint Combat Aircraft. This capability enables the protection of UK assets from attack and enhances the ability to conduct offensive operations.

The Initial Gate submitted in 2005 sought approval for Stage 1 of the Assessment Phase only. This stage completed in 2007 and a Review Note is being developed which will confirm the way forward for the programme.

SECTION 2: THE ASSESSMENT PHASE

Note: Actual in-service dates and costs are not set until projects reach the point in time when the main investment decision is made i.e. Main gate approval. Until this point all costs and dates are outline assumptions solely for internal planning purposes.

2a. Description of the Assessment Phase

Assessment Phase Stage 1 studied a focused set of solutions having deselected a number at Initial Gate. It helped develop a comprehensive understanding of the technical risk issues associated with each solution and how these impact on the ability to deliver the capability, an understanding of the relative costs and effectiveness of the solutions in meeting the capability and a programme for the remainder of the Assessment Phase. This work also considered the ability to deliver this capability within the wider context of Ministry of Defence's investment in surveillance platforms and infrastructure, and explored opportunities for cost effective delivery through an incremental approach to acquisition. This included an assessment of extending the service of the current Sea King Mk7 aircraft coupled with a later adoption of a new airframe and mission system combination, as opposed to the previous programme assumption for the transfer of the Sea King Mk7 mission system to a new build rotary wing airframe.

Stage 1 was approved at an expected cost of £10m and a Not To Exceed cost of £13m. The risks associated with the Not To Exceed costs have not occurred resulting in a variation of -£3m. A further variation of -£2m is due to an innovative contracting structure that has allowed studies to be conducted more cost effectively. The remaining variation of -£1m is as a result of revaluing Assessment Phase 1.

2b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase Cost
Forecast Cost	7
Approved Cost at Initial Gate	13
Variation	-6

2c. Explanation of the need and boundaries of current internal planning assumptions for introduction of the capability

	Earliest	Latest
Envelope within which capability will be available	***	***
The MASC initial operating capability is to provide a minimum deployable force capable of providing 24 hour surveillance cover to protect the Future Aircraft Carrier Task group. The date entries are nominal, pending definition of the final In-service date at the point of commitment to the Development and Manufacture stage.		

2d. Boundaries of current internal cost assumptions for Demonstration and Manufacture Phase

	Lowest	Highest
Envelope of costs to support Demonstration and Manufacture Phase	***	***

PRE MAIN GATE PROJECT SUMMARY SHEET

MILITARY AFLOAT REACH AND SUSTAINABILITY

Integrated Project Team Responsible:

MILITARY AFLOAT REACH AND SUSTAINABILITY

Single Point of Accountability for project capability:

Director Equipment Capability (Expeditionary Logistics & Support)

SECTION 1: ABOUT THE REQUIREMENT

The Military Afloat Reach and Sustainability system 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, as ships enter and leave service respectively.

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-ship or ship-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.

An early decision was taken to base the system solution on three classes of ship:

Fleet Tanker - Bulk consumables and Forward Aviation Support for all task groups. Limited non-bulk consumables capacity to support the small Maritime Security groups.

Fleet Solid Support Ship - Non-bulk consumables and Forward Aviation Support, optimised for the Carrier Strike group.

Joint Sea-Based Logistics Ship - Non-bulk consumables and Forward Aviation Support, optimised for the Littoral Manoeuvre group.

The Military Afloat Reach and Sustainability system will be in service until around 2047 and as such the solution will be designed to accommodate the requirements of current and known future force structures, including, Type 45, The Queen Elizabeth and The Prince of Wales Future Aircraft Carriers, Joint Strike Fighter and Future Surface Combatant .

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 Fleet Tankers which are urgently required in order to comply with International Maritime environmental standards.

SECTION 2: THE ASSESSMENT PHASE

Note: Actual in-service dates and costs are not set until projects reach the point in time when the main investment decision is made i.e. Main Gate approval. Until this point all costs and dates are outline assumptions solely for internal planning purposes.

2a. Description of the Assessment Phase

The Military Afloat Reach and Sustainability project received formal approval to enter its Assessment Phase in July 2005.

Between March and September 2007, the Military Afloat Reach and Sustainability procurement strategy was reviewed, with Ministerial agreement, to reflect the urgent need to procure the Fleet Tanker element of the programme. The previous Alliance strategy was terminated in May 2007 resulting in the termination of the competition to choose an Integrator. Fleet Solid Support and Joint Sea Based Logistics ships will now form part of a separate strategy to be considered with wider UK industrial interests. The new strategy, which received Ministerial approval in December 2007, is a 'Competitive and Adaptive' approach in which open competition will be used to generate costed and de-risked proposals for a Fleet Tanker Main Gate Business Case approval in early 2009. Affordability of the programme is being addressed through normal Assessment Phase work to create an affordable Main Gate business case based on taut realistic cost estimates and taking account of options resulting from Planning Round 2008.

The Military Afloat Reach and Sustainability Assessment Phase will cover generic assessment and design activity for the whole programme and the initial design for the Fleet Tankers.

As well as approving the new procurement strategy, in December 2007, the Minister approved the designation and delegation of the Heavy Replenishment at Sea project as a separate Category D project.

All data following is based on the revised procurement strategy.

The 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 Fleet Solid Support and Joint Sea Based Logistics vessels *** (Fleet Tanker ***, Fleet Solid Support, ***and Joint Sea Based Logistics, ***). This is reduced from *** due to the review of the procurement strategy which took place in 2007.

Due to the planned phased nature of the project, support and oversight for Fleet Tankers and further design work on subsequent classes will take place after the Fleet Tanker main investment decision, and the current total forecast is ***, ***for Fleet Tankers, *** for Fleet Solid Support and *** for Joint Sea Based Logistics vessels) bringing the total expected cost of Assessment work and later design for future classes to ***.

2b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase Cost
Forecast Cost	***
Approved Cost at Initial Gate	44
Variation	***

2c. Explanation of the need and boundaries of current internal planning assumptions for introduction of the capability

	Earliest	Latest
Envelope within which 1st of Class Fleet Tanker capability will be available	***	***
The capability is essential for the effective deployment of the Royal Navy and replaces existing ships that will be otherwise operating outwith Maritime Pollution regulations at ages well beyond their design life. The capability envelope given above is for the Fleet Tanker element of the programme only. The target Planned Assumption of Sevice Entry date for the first of Class Fleet Tanker is ***. Earliest and latest dates for the introduction of the Fleet Solid Support and Joint Sea Based Logistics capability will be determined later in the programme.		

2d. Boundaries of current internal cost assumptions for Demonstration and Manufacture Phase

	Lowest	Highest
Envelope of costs to support Demonstration and Manufacture Phase	***	***

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PRE MAIN GATE PROJECT SUMMARY SHEET

SEARCH AND RESCUE HELICOPTER

Integrated Project Team Responsible:

SEARCH AND RESCUE - HELICOPTER

Single Point of Accountability for project capability:

Director Equipment Capability (Air and Littoral Manoeuvre)

Senior Responsible Owner for broader capability:

Capability Manager (Battlespace Manoeuvre)

SECTION 1: ABOUT THE REQUIREMENT

Search and Rescue - Helicopter is a joint Ministry of Defence and Maritime and Coastguard Agency (an Agency of the Department for Transport) programme. It seeks to replace the current Search and Rescue capability, provided around the UK (and potentially the Falkland Islands) by the Royal Air Force and the Royal Navy, using Sea King helicopters, and through the Maritime and Coastguard Agency service contract.

It is planned to introduce the new service progressively in the next decade, when the Maritime and Coastguard Agency contract expires and the Sea Kings come to the end of their planned lives. Following Ministry of Defence and Department for Transport Ministerial approvals to enter Assessment Phase 2, a competition under the Private Finance Initiative, was launched in May 2006 under European Union procurement regulations using the competitive dialogue process.

SECTION 2: THE ASSESSMENT PHASE

Note: Actual in service dates and costs are not set until projects reach the point in time when the main investment decision is made i.e Main gate approval. Until this point all costs and dates are outline assumptions solely for internal planning purposes.

2a. Description of the Assessment Phase

The Search and Rescue - Helicopter Assessment Phase was approved in 2 Phases – Assessment Phase 1 and Assessment Phase 2. Assesment Phase 1 considered the range of procurement options as outlined in the Search and Rescue - Helicopter Initial Gate approval, resulting in a recommendation for a joint Ministry of Defence/Maritime and Coastguard Agency competitive

Private Finance Initiative procurement strategy.

Ministry of Defence Ministerial approval for Assessment Phase 2 to implement the joint Ministry of Defence/Maritime and Coastguard Agency competitive Private Finance Initiative procurement strategy was gained via the Future Rotorcraft Capability Initial Gate Business Case and followed by Department for Transport Minister approval of a parallel Business Case.

A joint Ministerial announcement of the Private Finance Initiative Procurement Strategy was made in May 2006 and the competition was launched through the Official Journal of the European Union. Four consortia were down selected following assessment of their Pre Qualification Questionnaires in November 2006: AgustaWestland; CHC Scotia Ltd/Thales UK Ltd (now known as "Soteria"); AIRKNIGHTTEAM (Lockheed Martin UK Ltd/VT Group Ltd/British International Helicopters Ltd); and UK Air Rescue (Bristow Helicopters Ltd/FBH Ltd/Serco Ltd). The Competitive Dialogue with industry formally commenced in February 2007. In October 2007 Augusta Westland withdrew as an independent participant from the competition. Westland Helicopters Ltd was subsequently admitted to the UK Air Rescue consortium in January 2008 following the submission of a Pre Qualification Questionnaire addendum . Industry's costed solutions for the first round of bidding were submitted in January 2008. Evaluation is ongoing. It is anticipated that Assessment Phase 2 will conclude with the recommendation of a preferred bidder.

The combined Ministry of Defence/Maritime and Coastguard Agency forecast cost of the Assessment Phase is £14m and the total cost of the project is estimated to be between £3bn and £5bn (Figures at tables 2b and 2d relate to Ministry of Defence costs only).

2b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase Cost
Forecast Cost	11*
Approved Cost at Initial Gate	1†
Variation	+10

2c. Explanation of the need and boundaries of current internal planning assumptions for introduction of the capability

	Earliest	Latest
Envelope within which capability will be available	***	***
Represents the planned commencement of the service at the first Ministry of Defence location.		

2d. Boundaries of current internal cost assumptions for Demonstration and Manufacture Phase

	Lowest	Highest
Envelope of costs to support Demonstration and Manufacture Phase	***	***
Represents the Ministry of Defence Equipment Plan contribution to the Private Finance Initiative unitary charge.		

* Represents total forecast cost for Assessment Phase 1 and Assessment Phase 2. Assessment Phase 1 approval £1.3m, Assessment Phase 1 actual spend £0.4m. Assessment Phase 2 Approval £9.9m, total forecast spend £10.8m.

† Approval for Assessment Phase 1 only.

PRE MAIN GATE PROJECT SUMMARY SHEET

UNITED KINGDOM MILITARY FLYING TRAINING SYSTEM

Picture not available.

Integrated Project Team Responsible:

UNITED KINGDOM MILITARY FLYING TRAINING SYSTEM

Single Point of Accountability for project capability:

Director Equipment Capability (Theatre Airspace)

Senior Responsible Owner for broader capability:

Capability Manager (Precision Attack)

SECTION 1: ABOUT THE REQUIREMENT

United Kingdom Military Flying Training System will deliver a coherent, flexible and integrated flying training capability catering for the needs of the Royal Navy, the Royal Air Force and the Army Air Corps. The flying training system takes aircrew from initial training through elementary, basic and advanced flying training phases to their arrival at their designated operational aircraft. The current system is at risk of being unable to deliver the required quantity and quality of aircrew to meet the input standard for the Operational Conversion Units. The existing training platforms are approaching the end of their useful lives and include outdated systems that are unable to prepare trainees for current and future front line aircraft. The current system is based on a number of separate contractual arrangements for the provision of equipment and support. Consequently the system is piecemeal, difficult to manage and inefficient. It also introduces significant delays due to lengthy training programmes and gaps between courses.

The focus for United Kingdom Military Flying Training System is to achieve a holistic system based on capability and service delivery; it is not solely about the provision of aircraft platforms. It also offers an opportunity to modernise the flying training processes for all three Services, realise efficiencies and, since training is currently spread across several organisations, take advantage of potential economies of scale.

SECTION 2: THE ASSESSMENT PHASE

Note: Actual in service dates and costs are not set until projects reach the point in time when the main investment decision is made i.e. Main Gate approval. Until this point all costs and dates are outline assumptions solely for internal planning purposes.

2a. Description of the Assessment Phase

Four possible procurement options were identified at Initial Gate. The Do-nothing option was discounted. The Do Minimum option would not deliver the required quality and quantity of students in the correct timescales. The remaining options, Public Private Partnership/Private Finance Initiative and Smart Conventional, were tested in a Convergence Phase which concluded that the adoption of a Public Private Partnership Contractual Partnering model would best harness the collective skills of MoD and industry by utilising a mix of Private Finance Initiative and conventional procurement to deliver a coherent and flexible system of systems.

This option envisaged the appointment of a Training System Partner to work with the MoD over the life of the project to deliver incrementally the total aircrew training requirement. The strategy was approved by Investment Approvals Board in February 2005. An Invitation To Negotiate was issued to three consortia in March 2005; the bids were received in August 2005. The Main Gate Business Case (Stage 1) was approved by Investment Approvals Board and Ascent was announced as Preferred Bidder in November 2006. Final contractual negotiations are underway. Main Gate (Stage 2) submission in the form of an Information Note was submitted in December 2007. This was approved by Minister (Defence Equipment and Support) and Treasury in February 2008.

Additional assessment work will be required post-Main Gate for the different training platforms that will be acquired incrementally. These increments will be subject to further approvals.

2b. Cost of the Assessment Phase

£m (outturn prices)	Assessment Phase Cost
Forecast Cost	32
Approved Cost at Initial Gate	39
Variation	-7

2c. Explanation of the need and boundaries of current internal planning assumptions for introduction of the capability

	Earliest	Latest
Envelope within which capability will be available	***	***
This project will provide the MoD with a coherent, tri-service training capability, to be acquired incrementally, replacing the current disjointed contractual arrangements.		

2d. Boundaries of current internal cost assumptions for Demonstration and Manufacture Phase

	Lowest	Highest
Envelope of costs to support Demonstration and Manufacture Phase	***	***