PE NUMBER: 0305220F
PE TITLE: GLOBAL HAWK DEVELOPMENT/FIELDING

Exhibit R-2, RDT&E Budget Item Justification	DATE May 2009
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305220F GLOBAL HAWK DEVELOPMENT/FIELDING

	Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
	Total Program Element (PE) Cost	274.729	310.664	317.316	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
5144	Global Hawk	274.729	268.564	245.415	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
RTIP	MP-RTIP	0.000	42.100	71.901	0.000	0.000	0.000	0.000	0.000	0.000	0.000

FY08 funding totals do not inlcude $0.737M in supplemental funding.

(U) A. Mission Description and Budget Item Justification

The Global Hawk System provides high altitude, deep look, long endurance intelligence, surveillance, and reconnaissance (ISR) capability that compliments space and other airborne collectors during peacetime, crisis, and war-fighting scenarios.

This funding is procuring the highly capable Global Hawk System, which is comprised of aircraft, payloads, ground segment, and support segment. The aircraft is an autonomous, high altitude, long endurance, unmanned aircraft system (UAS). The RQ-4A is an imagery-intelligence (IMINT) UAS designed to employ 2000 pounds of payload. The RQ-4A has one configuration known as the Block 10. The Block 10 employs an IMINT system comprised of a synthetic aperture radar (SAR) sensor and an electro-optical (EO) / infrared (IR) sensor. These three sensors are called the integrated sensor suite (ISS). The RQ-4B UAS is designed to employ 3000 pounds of payload and enable multi-intelligence (multi-INT) collecting. The RQ-4B has three configurations: Block 20, Block 30, and Block 40. The Block 20 will employ upgraded SAR and EO/IR sensors known as the enhanced ISS (EISS) in an IMINT only configuration. The Block 30 will employ the same EISS sensors as the Block 20 and will also integrate a wide spectrum signals intelligence (SIGINT) sensor called the Advanced Signals Intelligence Program (ASIP) sensor used simultaneously to create a multi-INT platform. The Block 40 will integrate the multi-platform radar technology insertion program (MP-RTIP) radar sensor, and currently plans to only carry the MP-RTIP sensor. The user will ultimately determine the optimal mix of quantities and payloads for each aircraft configuration based on operational requirements. The ground station (GS) includes the mission control element (MCE) and the launch and recovery element (LRE). The support segment includes aerospace ground equipment, tech orders, spares, support equipment, and training to enable operation of the Global Hawk System.

The Global Hawk program went through a Title 10, Section 2433 review in 2006, due to a unit cost breach (informally known as Nunn-McCurdy breach). The Department certified the program to Congress on June 5th, 2006. As a result of the review, the Department directed a program restructure to slow development and cap the low rate initial production (LRIP) at 5 per year to reduce risk. LRIP will remain at 5 per year until successful completion of the initial operational test and evaluation (IOT&E).

When judged feasible and affordable, this program will participate in the development, testing, and implementation of international standards (to include NATO standardization agreements) to enhance joint, allied, and coalition interoperability.

The MP-RTIP Program was established to develop a family of modular, scalable next generation sensors for multiple platforms to support network centric operations with integrated Command and Control Intelligence, Surveillance and Reconnaissance (C2ISR) capability.

The E-10A Program was terminated in Feb 07 with amended direction in May 07 that authorized limited risk reduction of Battle Management Command and Control

(BMC2) Mission Execution, BMC2 Kill Chain and Wide Area Surveillance (WAS) Radar Hardware verification. The Global Hawk MP-RTIP continues under the Global Hawk PE.

Future MP-RTIP studies/development insertion-- includes concept exploration, program definition/risk reduction, sensor technology insertion/development. Also includes continued support improvement and implementation of Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR) capabilities enabling the joint air and missile defense architecture joint decisive operations and the AEF Task Force CONOPS. Conduct limited risk reduction activities on BMC2 Mission Execution and BMC2 Kill Chain, and MP-RTIP WAS Radar Hardware Verification.

MP-RTIP will also support NATO Alliance Ground Surveillance (AGS) conceptual design and early development activities under the Global Hawk PE.

This program is budget activity 7, Operational Systems Development, because it utilizes Air Force R&D to develop a highly capable operational system.

(U) B. Program Change Summary ($ in Millions)

		FY 2008	FY 2009	FY 2010
(U)	Previous President's Budget	275.479	284.292	243.947
(U)	Current PBR/President's Budget	274.729	310.664	317.316
(U)	Total Adjustments	-0.750	26.372	
(U)	Congressional Program Reductions		-15.000	
	Congressional Rescissions		-0.843	
	Congressional Increases		42.215	
	Reprogrammings	-0.750		
	SBIR/STTR Transfer			

(U) Significant Program Changes:

In FY08, $0.737M was added as a GWOT supplemental for imagery and shading fixes. Additionally the program office initiated Below Threshold Reprogrammings for ASIP Flight Test Extension ($9.2M) and Army Sentinel Radar ($.750M)

In FY09, the program received a Congressional reduction of $15M and $42.215M was transferred from the E-10 Line to the Global Hawk PE.

In FY2010 $25.79M was added by the Air Force for MP-RTIP Depot, MP-RTIP program office support, and the re-architecture of the RQ-4 ground station as part of the FY10 POM. Additionally, Program Decision Memorandums added $76M for MP-RTIP Mode development and integration and transferred $20M from the Global Hawk PE to the DoD UAS Airspace Integration RDT&E line for Sense and Avoid.

Exhibit R-2a, RDT&E Project Justification			DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305220F GLOBAL HAWK DEVELOPMENT/FIELDING	PROJECT NUMBER AND TITLE: 5144 Global Hawk	

Cost ($ in Millions)		FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
5144	Global Hawk	274.729	268.564	245.415	0.000	0.000	0.000	0.000	0.000	Continuing	TBD
	Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

FY08 funding total includes $0.737M in supplemental funding.

(U) A. Mission Description and Budget Item Justification

The Global Hawk System provides high altitude, deep look, long endurance intelligence, surveillance, and reconnaissance (ISR) capability that compliments space and other airborne collectors during peacetime, crisis, and war-fighting scenarios.

This funding is procuring the highly capable Global Hawk System, which is comprised of aircraft, payloads, ground segment, and support segment. The aircraft is an autonomous, high altitude, long endurance, unmanned aircraft system (UAS). The RQ-4A is an imagery-intelligence (IMINT) UAS designed to employ 2000 pounds of payload. The RQ-4A has one configuration known as the Block 10. The Block 10 employs an IMINT system comprised of a synthetic aperture radar (SAR) sensor and an electro-optical (EO) / infrared (IR) sensor. These three sensors are called the integrated sensor suite (ISS). The RQ-4B UAS is designed to employ 3000 pounds of payload and enable multi-intelligence (multi-INT) collecting. The RQ-4B has three configurations: Block 20, Block 30, and Block 40. The Block 20 will employ upgraded SAR and EO/IR sensors known as the enhanced ISS (EISS) in an IMINT only configuration. The Block 30 will employ the same EISS sensors as the Block 20 and will also integrate a wide spectrum signals intelligence (SIGINT) sensor called the Advanced Signals Intelligence Program (ASIP) sensor used simultaneously to create a multi-INT platform. The Block 40 will integrate the multi-platform radar technology insertion program (MP-RTIP) radar sensor, and currently plans to only carry the MP-RTIP sensor. The user will ultimately determine the optimal mix of quantities and payloads for each aircraft configuration based on operational requirements. The ground station (GS) includes the mission control element (MCE) and the launch and recovery element (LRE). The support segment includes aerospace ground equipment, tech orders, spares, support equipment, and training to enable operation of the Global Hawk System. Automatic Test System will develop the capability of the Versatile Automatic Test System (VDATS) for Global Hawk application. The Integrated Life Cycle Management (ILCM) executive agent for Automatic Test Systems (ATS) is focused on reducing weapon system unique ATS through replacement with a Common Versatile ATS tester that can perform similar test across multiple weapons platforms.

The Global Hawk program went through a Title 10, Section 2433 review in 2006, due to a unit cost breach (informally known as Nunn-McCurdy breach). The Department certified the program to Congress on June 5th, 2006. As a result of the review, the Department directed a program restructure to slow development and cap the low rate initial production (LRIP) at 5 per year to reduce risk. LRIP will remain at 5 per year until successful completion of the initial operational test and evaluation (IOT&E).

This program is budget activity 7, Operational Systems Development, because it utilizes Air Force R&D to develop a highly capable operational system.

When judged feasible and affordable, this program will participate in the development, testing, and implementation of international standards (to include NATO standardization agreements) to enhance joint, allied, and coalition interoperability. Activities will also include studies and analysis to support both current program planning and execution and future program planning.

Exhibit R-2a, RDT&E Project Justification		DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305220F GLOBAL HAWK DEVELOPMENT/FIELDING	PROJECT NUMBER AND TITLE: 5144 Global Hawk

	B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010
(U)	Continue modernization and related tasks, to satisfy Capabilities Description Document requirements.			
(U)	Aircraft	23.704	14.417	8.855
(U)	Payloads	56.731	33.239	56.163
(U)	Ground Segment	18.897	27.453	26.127
(U)	Communications	14.298	24.312	10.318
(U)	Support Segment	47.753	39.460	49.539
(U)	Block Load (System Engineering, Program Management, Flight test support, and software maintenance)	76.590	98.400	72.544
(U)	AFFTC	11.823	13.826	10.546
(U)	Other Government Costs & Mission Support	20.680	17.457	11.323
(U)	Fielding Strategy Acceleration	4.253		
(U)	Automatic Test System Development			
(U)	Total Cost	274.729	268.564	245.415

(U) C. Other Program Funding Summary ($ in Millions)

		FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total Cost
(U)	* Airborne SIGINT Enterprise, AF RDT&E (PE 34260F)	10.817	41.803	29.099						Continuing	TBD
(U)	Joint Tactical Radio System, AF RDT&E (PE 27423F)	4.122	1.307	19.534						Continuing	TBD
(U)	AF MILCON			31.300							
(U)	AF O&M	108.445	62.199	89.084						Continuing	TBD
(U)	AF MILPERS	47.799	54.530	81.620						Continuing	TBD
(U)	Aircraft Procurement, APPN 10 AF (HAE UAV)	576.823	710.004	667.824						Continuing	TBD
(U)	Aircraft Procurement, APPN 11 AF (HAE UAV)	25.756	103.657	134.864						Continuing	TBD
(U)	Other Procurement, 3080 (HAE UAV)	0.697	0.297								
(U)	Weapons System Initial Spares	6.953									

Exhibit R-2a, RDT&E Project Justification		DATE May 2009
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0305220F GLOBAL HAWK DEVELOPMENT/FIELDING**	PROJECT NUMBER AND TITLE **5144 Global Hawk**

(U) D. Acquisition Strategy

The Global Hawk program uses a modernization strategy to provide the warfighter with a near-term, combat capability with increased, time-phased capability improvements as technology and risk achieve satisfactory levels.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: May 2009

BUDGET ACTIVITY: 07 Operational System Development

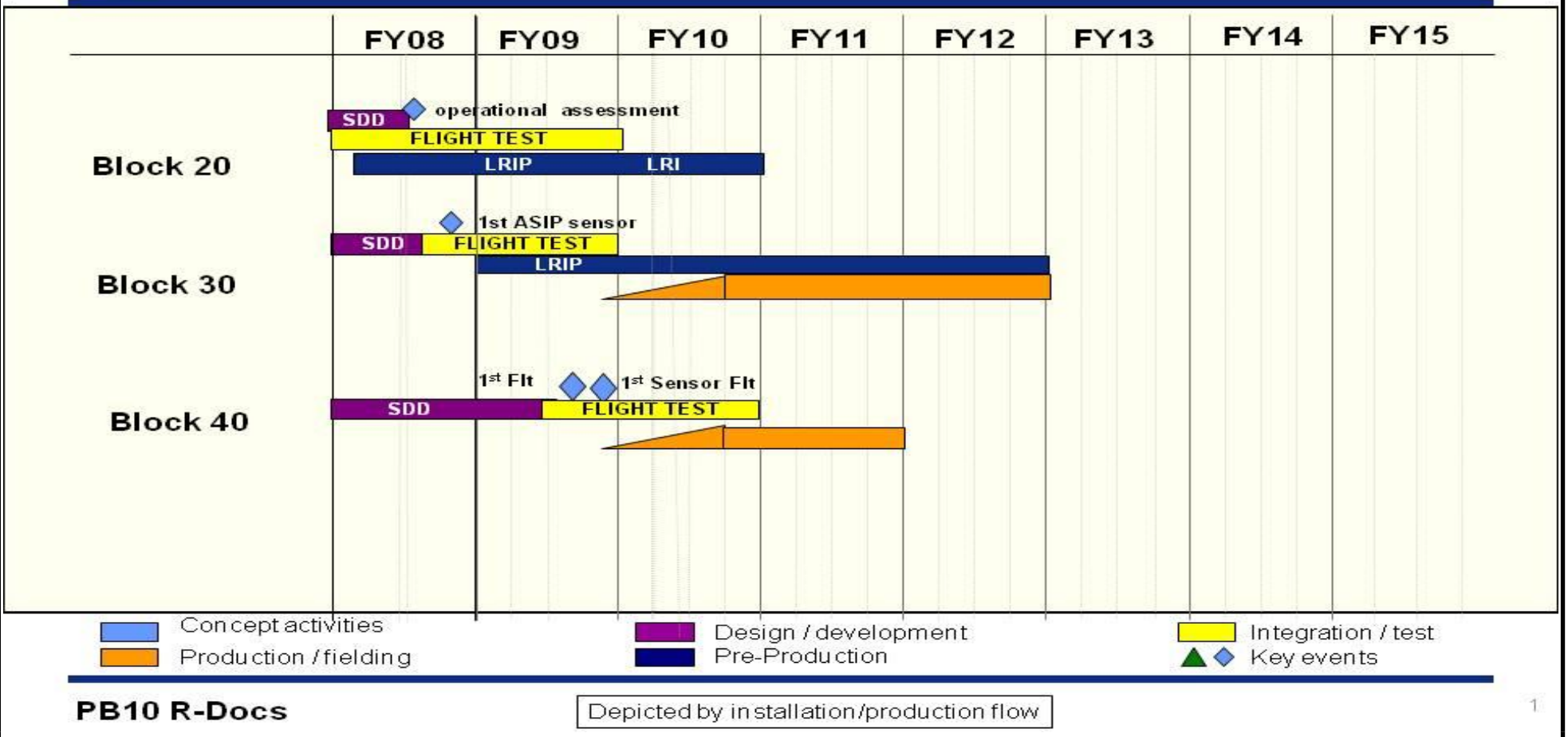
PE NUMBER AND TITLE: 0305220F GLOBAL HAWK DEVELOPMENT/FIELDING

PROJECT NUMBER AND TITLE: 5144 Global Hawk

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
EMD	SS/CPAF	Northrop Grumman Integrated Systems, San Diego, CA	645.763	235.063	Feb-08	231.219	Feb-09	214.908	Feb-10	Continuing	TBD	TBD
											0.000	
Subtotal Product Development			645.763	235.063		231.219		214.908		Continuing	TBD	TBD
Remarks:												
(U) Support												
Contractor Program Support	SS/CPFF	Northrop Grumman Integrated Systems, San Diego, CA	9.751	6.071	Jan-08	5.418	Jan-09	6.966	Jan-10	Continuing	TBD	TBD
Government Program Support	Various	Various Government Orgs.	14.201	9.683	Dec-07	5.965	Dec-08	5.097	Dec-09	Continuing	TBD	TBD
Subtotal Support			23.952	15.754		11.383		12.063		Continuing	TBD	TBD
Remarks:												
(U) Test & Evaluation												
Flight Test & Evaluation	PO	AFFTC, Edwards	29.612	11.818	Jan-08	14.383	Jan-09	10.936	Jan-10	Continuing	TBD	TBD
Subtotal Test & Evaluation			29.612	11.818		14.383		10.936		Continuing	TBD	TBD
Remarks:												
(U) Management												
A&AS	PR	Various Contractors, Dayton, OH	21.421	10.276	Nov-07	9.502	Nov-08	6.427	Nov-09	Continuing	TBD	TBD
											0.000	
Other Government Organizations	Various	Various, Dayton, OH	10.471	1.818		2.077		1.081		Continuing	TBD	TBD
Subtotal Management			31.892	12.094		11.579		7.508		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			731.219	274.729		268.564		245.415		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile		DATE May 2009
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305220F GLOBAL HAWK DEVELOPMENT/FIELDING	PROJECT NUMBER AND TITLE 5144 Global Hawk

Integrated Block Program Schedule



PB10 R-Docs

Depicted by installation/production flow

Exhibit R-4a, RDT&E Schedule Detail		DATE May 2009
BUDGET ACTIVITY **07 Operational System Development**	PE NUMBER AND TITLE **0305220F GLOBAL HAWK DEVELOPMENT/FIELDING**	PROJECT NUMBER AND TITLE **5144 Global Hawk**

(U) Schedule Profile	FY 2008	FY 2009	FY 2010
(U) Block 20 Operational Assessment	3Q		
(U) Block 30 ASIP development test flights begin	4Q		
(U) Block 40 First Flight		3Q	
(U) Block 40 First Sensor Flight		4Q	

Exhibit R-2a, RDT&E Project Justification

DATE: May 2009

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0305220F GLOBAL HAWK DEVELOPMENT/FIELDING

PROJECT NUMBER AND TITLE: RTIP MP-RTIP

Cost ($ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total
RTIP MP-RTIP	0.000	42.100	71.901	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

PE27450 (MP-RTIP) funded FY07 and FY08 MP-RTIP RDTE. FY09 funding was transferred to PE35220F (RQ-4) and in FY09 this funding was moved into this BPAC.

(U) A. Mission Description and Budget Item Justification

The MP-RTIP sensor is designed to provide next generation capabilities to support network centric operations with integrated Command and Control Intelligence, Surveillance and Reconnaissance (C2ISR) capability.

The funding supports all MP-RTIP design, development, and integration onto the Global Hawk Block 40. Future MP-RTIP studies and development include maritime modes, airborne modes, electronic protection, and other advanced capabilities. The funding also improves and implements Command and Control, Intelligence, Surveillance and Reconnaissance (C2ISR) capabilities enabling AEF Task Force CONOPS. This effort also provides for funding of limited risk reduction activities on BMC2 Mission Execution and BMC2 Kill Chain. Other activities will include studies and analysis to support both current program planning and execution and future program planning.

Global Hawk Block 40 carrying MP-RTIP will also support NATO Alliance Ground Surveillance (AGS) conceptual design and early development activities.

This program is budget activity 7, Operational Systems Development, because it utilizes Air Force R&D to develop a highly capable operational system.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2008	FY 2009	FY 2010
(U) Payloads (MP-RTIP)		31.793	62.901
(U) Other Government Costs and Support		10.307	9.000
(U) Total Cost	0.000	42.100	71.901

(U) C. Other Program Funding Summary ($ in Millions)

	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost to Complete	Total Cost
(U) none										

(U) D. Acquisition Strategy

The MP-RTIP program supports the acquisition of Global Hawk by providing sensors for the Global Hawk Block 40 platforms.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: May 2009

BUDGET ACTIVITY: 07 Operational System Development

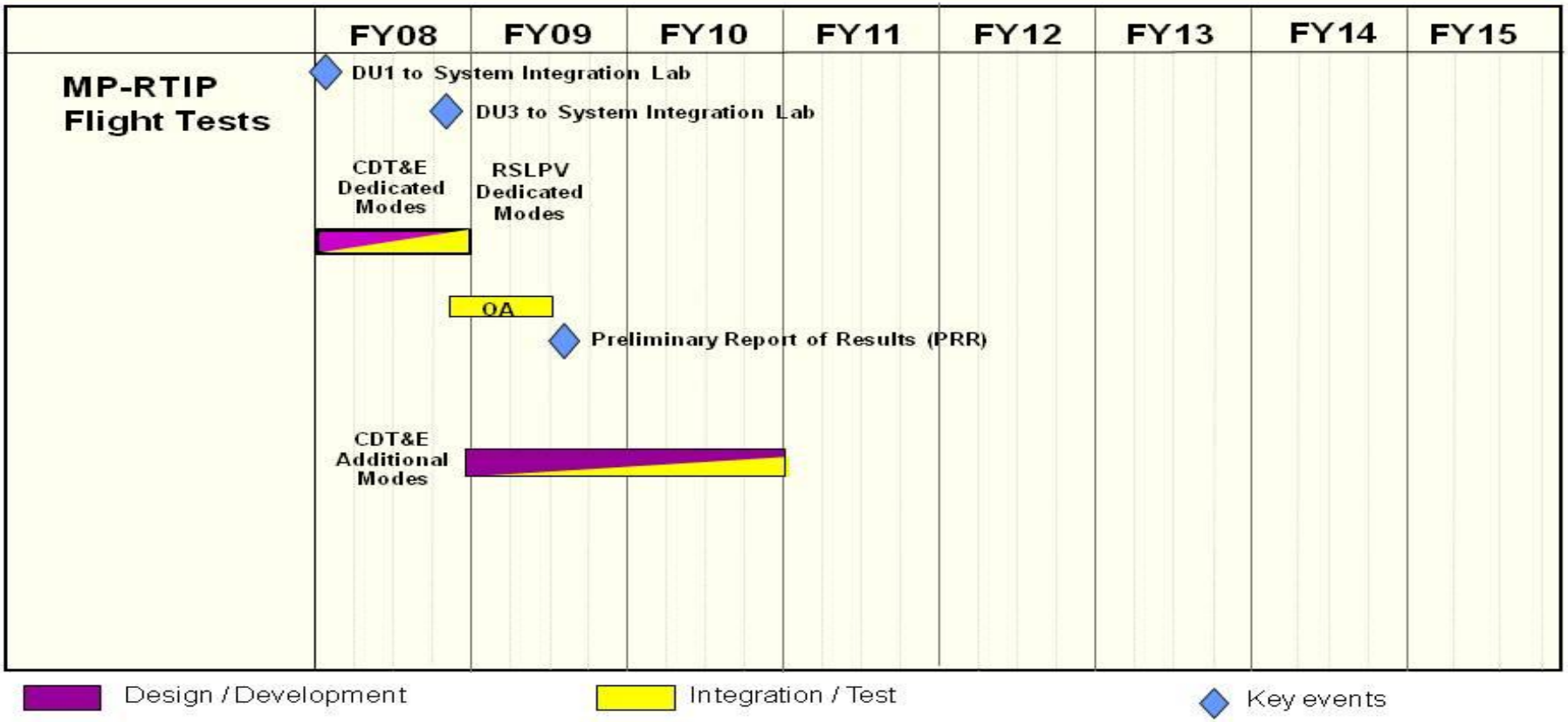
PE NUMBER AND TITLE: 0305220F GLOBAL HAWK DEVELOPMENT/FIELDING

PROJECT NUMBER AND TITLE: RTIP MP-RTIP

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2008 Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
MP-RTIP	SS/CPAF	Northrop Grumman Integrated Systems, San Diego, CA				31.793		62.901	Nov-09	Continuing	TBD	TBD
Subtotal Product Development			0.000	0.000		31.793		62.901		Continuing	TBD	TBD
Remarks:												
(U) Support											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Test & Evaluation												
	MIPR	Edwards, CA				2.555				Continuing	TBD	TBD
Subtotal Test & Evaluation			0.000	0.000		2.555		0.000		Continuing	TBD	TBD
Remarks:												
(U) Management												
A&AS	PR	Various Contractors, Boston MA				7.051		3.000		Continuing	TBD	TBD
Other Gov't Support	Various	Various, Boston MA				0.701		6.000			6.701	
Subtotal Management			0.000	0.000		7.752		9.000		Continuing	TBD	TBD
Remarks:												
(U) Total Cost			0.000	0.000		42.100		71.901		Continuing	TBD	TBD

Exhibit R-4, RDT&E Schedule Profile		DATE May 2009
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0305220F GLOBAL HAWK DEVELOPMENT/FIELDING	PROJECT NUMBER AND TITLE RTIP MP-RTIP

MP-RTIP Schedule



PB10 R-Docs

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Exhibit R-4a, RDT&E Schedule Detail		DATE: May 2009
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0305220F GLOBAL HAWK DEVELOPMENT/FIELDING	PROJECT NUMBER AND TITLE: RTIP MP-RTIP

(U) Schedule Profile	FY 2008	FY 2009	FY 2010
(U) MP-RTIP GH DU#1 to System Integration Lab (SIL)	1Q		
(U) MP-RTIP GH DU#3 to System Integration Lab (SIL)	4Q		
(U) Operational Assessment	4Q	3Q	
(U) Preliminary Reports of Results (PRR)		3Q	
(U) CDT&E Additional Modes		1-4Q	1-4Q