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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force **Date:** March 2014

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)</i>	R-1 Program Element (Number/Name) PE 0605213F / <i>F-22 Modernization Increment 3.2B</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	0.000	110.432	115.000	173.647	-	173.647	141.575	73.042	1.411	1.438	24.751	641.296
654785: <i>F-22 INCREMENT 3.2B</i>	0.000	110.432	115.000	173.647	-	173.647	141.575	73.042	1.411	1.438	24.751	641.296
Quantity of RDT&E Articles	9.000	-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: 474

The FY 2015 OCO Request will be submitted at a later date.

Note

Totals include funding for PRCP Program Number, 474 F-22 Increment 3.2B.

In FY13, a separate Program Element (0605213F) was created for Increment 3.2B FY13 milestone B and beyond efforts, to provide Congress and Office of Secretary of Defense (OSD) greater technical and funding visibility into the program. All increment 3.2B efforts and associated funding prior to FY13 are included in the F-22A Squadrons (0207138F) budget documentation.

A. Mission Description and Budget Item Justification

Increment 3.2B will integrate the newest air-to-air intercept missiles (i.e., AIM-9X and AIM-120D), further improve the Electronic Protection (EP) capability over Increment 3.2A, and enhance the F-22s geolocation capability from the Increment 3.1 baseline with the addition of the Geolocation 2 candidate. Increment 3.2B will include the Enhanced Stores Management System (ESMS), as well as, Common Weapon Engagement Zone (Common WEZ), an Intra-Flight Datalink (IFDL) improvement to increase IFDL bandwidth and enable cooperative functions required to realize Increment 3.2B candidates.

In addition to the aforementioned hardware modifications and integration requirements, Increment 3.2B will develop, certify and integrate a new platform operational flight program to ensure the system interoperability and performance of all increment-level developments.

The development program includes development, studies, and analysis to enhance the air vehicle and training system to improve/enhance F-22 weapons, communications, Electronic Warfare, and Intelligence Surveillance Reconnaissance (ISR) capabilities.

BA5 - This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	140.100	131.100	137.700	-	137.700
Current President's Budget	110.432	115.000	173.647	-	173.647
Total Adjustments	-29.668	-16.100	35.947	-	35.947
• Congressional General Reductions	-0.185	-			
• Congressional Directed Reductions	-	-16.100			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-14.000	-			
• SBIR/STTR Transfer	-3.973	-			
• Other Adjustments	-11.510	-	35.947	-	35.947

Change Summary Explanation

FY13: \$29.668M reduction due to: \$11.510M sequestration higher priorities, \$3.973 SBIR, \$14.0M ATR reprogramming, and \$0.185M CGR reduction.

FY14: \$16.1M reduction due to: \$13.1M execution delays and \$3.0M program decrease.

FY15: \$35.947M add due to: \$44.800M realignment from F-22A Squadrons program (PE 0207138F) to Increment 3.2B (PE 0605213F) to support full funding of Increment 3.2B program and \$6.686M underexecution re-spread from FY15 across FY16 and FY17, and \$2.167M reduction due to non pay inflation

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
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Title: Increment 3.2B	107.377	102.177	109.097
Description: The F-22 Increment 3.2B Modernization Program consists of the studies, analysis, demonstrations, and hardware/software development necessary to provide Increment 3.2B capabilities including Intra-Flight Data Link Improvements, Electronic Protection, AIM-9X and AIM-120D integration with Common Weapon Engagement Zone, Geolocate 2.0 and Stores Management System Common Split Bus. The Enhanced Stores Management System (ESMS) program is a hardware development program required to integrate any new weapons on the F-22 beyond Increment 3.1.			
Mission Support of the F-22 Program Office: travel, computer costs, and other miscellaneous contract support.			
FY 2013 Accomplishments: (U) In FY 2013: A Preliminary Technical Review (PTR) was held February 2013, culminating the completion of the preliminary design work. Upon receiving authority to enter into Milestone B, Increment 3.2B began initial work in the Development, Code, and			

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
<p>Integration and Test Phase. The Integrated Baseline Review (IBR) for the Inc 3.2B Engineering and Manufacturing Development (EMD) contract was completed.</p> <p>(U) In FY 2013: Provided Management and infrastructure activities in support of the F-22 Program Office.</p> <p>FY 2014 Plans: (U) In FY2014: Increment 3.2B will finalize system design and continue Development, Code, Integration and Flight Test.</p> <p>(U) In FY 2014: Provided Management and infrastructure activities in support of the F-22 Program Office.</p> <p>FY 2015 Plans: (U) In FY2015: Increment 3.2B will continue work in the Development, Code, and Integration and Test Phase.</p> <p>(U) In FY 2015: Provided Management and infrastructure activities in support of the F-22 Program Office.</p>				
<p>Title: Combined Test Force (CTF)</p> <p>Description: (U) The F-22 Combined Test Force (CTF), located at Edwards Air Force Base, conducts testing to assess performance and military utility of Increment 3.2B. The CTF uses operationally relevant ground and flight test scenarios to identify Increment 3.2B performance deficiencies. This funds Inc 3.2B unique test costs.</p> <p>FY 2013 Accomplishments: (U) In FY2013: The CTF accomplished early Increment 3.2B test planning. CTF began testing of AIM-9X separations for a full AIM-9X integration in Increment 3.2B.</p> <p>FY 2014 Plans: (U) In FY2014: The CTF will accomplish detailed test planning of Increment 3.2B. CTF initiate Increment 3.2B Flight Test.</p> <p>FY 2015 Plans: (U) In FY2015: The CTF will continue developmental flight test in preparation for Low Rate Initial Production (LRIP) decision (MS C).</p>		1.160	3.800	29.500
<p>Title: Lab Test & Operations</p> <p>Description: Increment 3.2B Lab Test & Operations will plan and conduct software build, integration & testing in the F-22 system integration at the laboratories: the Agile Integration Lab (AIL); the Raptor Integration Lab (RaIL); the Air Combat Simulation (ACS) Lab; the Vehicle Management System (VMS) Vehicle Integration Facility (VIF); and the Vehicle System Simulator (VSS).</p>		1.895	9.023	35.050

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
<p><i>FY 2013 Accomplishments:</i> (U) In FY2013: Increment 3.2B Lab Test & Operations planned and conducted software build, integration & testing in the F-22 system integration at the laboratories: the Agile Integration Lab (AIL); the Raptor Integration Lab (Rall); the Air Combat Simulation (ACS) Lab; the Vehicle Management System (VMS) Vehicle Integration Facility (VIF); and the Vehicle System Simulator (VSS).</p> <p><i>FY 2014 Plans:</i> (U) In FY2014: Increment 3.2B Lab Test & Operations will continue to plan and conduct software build, integration & testing in the F-22 system integration at the laboratories: the Agile Integration Lab (AIL); the Raptor Integration Lab (Rall); the Air Combat Simulation (ACS) Lab; the Vehicle Management System (VMS) Vehicle Integration Facility (VIF); and the Vehicle System Simulator (VSS).</p> <p><i>FY 2015 Plans:</i> (U) In FY2015: Increment 3.2B Lab Test & Operations will continue to plan and conduct software build, integration & testing in the F-22 system integration at the laboratories: the Agile Integration Lab (AIL); the Raptor Integration Lab (Rall); the Air Combat Simulation (ACS) Lab; the Vehicle Management System (VMS) Vehicle Integration Facility (VIF); and the Vehicle System Simulator (VSS).</p>			
Accomplishments/Planned Programs Subtotals	110.432	115.000	173.647

D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• RDT&E: BA07: PE 0207138F: <i>F-22A Squadrons, RDT&E*</i>	326.012	274.407	156.962	-	156.962	275.230	370.252	398.208	418.720	Continuing	Continuing
• APAF: BA05: Line Item # F2232B: <i>F-22 Increment 3.2B, PE 0207138F**</i>	-	-	28.500	-	28.500	70.184	79.930	146.246	13.322	20.586	358.768
• APAF: BA05: Line Item # F02200: <i>F-22A Squadrons, PE 0207138F***</i>	316.515	358.268	301.426	-	301.426	188.794	264.277	206.349	224.861	Continuing	Continuing
• APAF: BA05: PE 0207138F: <i>F-22 Increment 3.2B, Initial Spares</i>	-	-	-	-	-	3.768	3.969	7.448	-	-	15.185
• RDT&E: BA07: PE 0207163F: <i>AIM-120D, AMRAAM T&E, RDT&E****</i>	18.590	20.830	23.940	-	23.940	5.820	-	-	-	-	69.580

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D. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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Remarks

NOTES:

*F-22A Squadrons, RDT&E/PE 0207138F includes F-22A Squadrons modernization and development. Both PEs 0207138F and 0605213F share lab and infrastructure support costs across the F-22 enterprise.

**F-22 Increment 3.2B, APAF/PE 0207138F, F2232B includes BP11 (Aircraft Modifications) for Increment 3.2B only.

***F-22A Squadrons, APAF/PE 0207138F, F02200 includes BPs 11 (Aircraft Modifications), 13 (Post-Production Support), 16 (Initial Spares), and 19 (Depot Activation) for F-22 Squadrons only.

****AIM-120D, AMRAAM RDT&E/PE 0207163F, funding provides for the AIM-120 development as a part of the F-22 Increment 3.2B effort.

E. Acquisition Strategy

The Raptor Enhancement Development & Integration (REDI) contract is an Indefinite Delivery/Indefinite Quantity Ordering contract that maximizes flexibility to start, stop, accelerate and decelerate projects as required. The REDI contract was established to be more responsive to evolving war fighter requirements. The REDI contract allows the issuance of orders for the highest priority war fighter capabilities in operationally meaningful capability increments, requirements analysis, contractor cost estimates and studies, development and demonstration of capability enhancements, and unanticipated future war fighter requirements. Each increment is broken into phases to initiate requirements analysis, the design phase and the development, integration and verification phase of a specific incremental development effort. The REDI II contract is a follow-on Indefinite Delivery/Indefinite Quantity contract to the initial REDI contract. REDI II provides maximum flexibility to manage various modernization projects. The REDI II contract allows for the issuance of orders for efforts associated with the planning, analysis, design, development, qualification, test and documentation of F-22 weapon system performance enhancements, life-cycle improvements, Operational Flight Program (OFP) upgrades, and associated efforts essential to accomplishing the F-22 mission.

F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force **Date:** March 2014

Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605213F / F-22 Modernization Increment 3.2B	Project (Number/Name) 654785 / F-22 INCREMENT 3.2B
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Increment 3.2B	Various	Various : Various,	0.000	107.377	Oct 2012	102.177	Nov 2013	109.097	Oct 2014	-		109.097	152.207	470.858	-
Subtotal			0.000	107.377		102.177		109.097		-		109.097	152.207	470.858	-

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Combined Test Force	Various	Various : Various,	0.000	1.160	Oct 2012	3.800	Nov 2013	29.500	Oct 2014	-		29.500	48.600	83.060	-
Laboratory Test Operations	SS/ Various	Lockheed Martin : Fort Worth, TX	0.000	1.895	Jan 2013	9.023	Jan 2014	35.050	Oct 2014	-		35.050	41.410	87.378	-
Subtotal			0.000	3.055		12.823		64.550		-		64.550	90.010	170.438	-

Remarks
 FY12 and prior year costs for Increment 3.2B are shown under PE 0207138F. FY13 and later are shown under PE 0605213F. The Combined Test Force and Laboratory Test & Operations costs appear to increase significantly FY2013-2015 due Increment 3.2B test costs. The corresponding decrease in test costs are captured in PE 0207138F documentation.

Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

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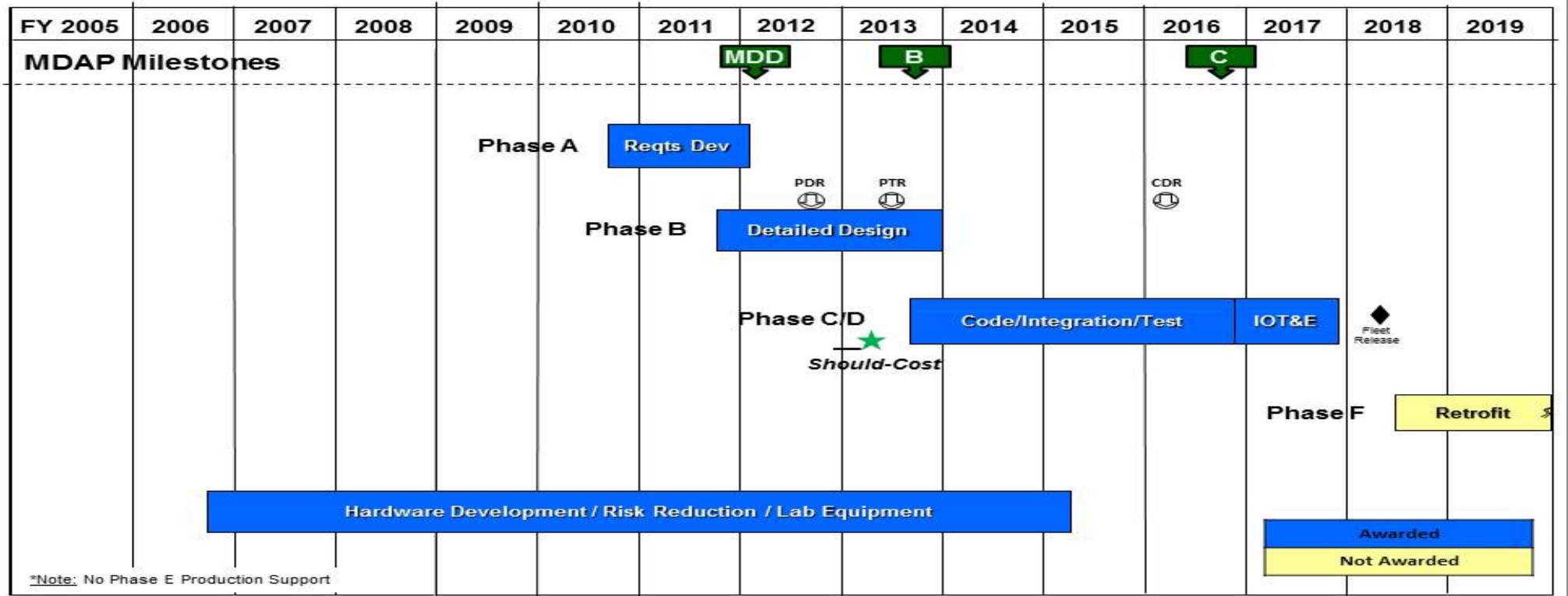
Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force							Date: March 2014						
Appropriation/Budget Activity 3600 / 5				R-1 Program Element (Number/Name) PE 0605213F / <i>F-22 Modernization Increment 3.2B</i>			Project (Number/Name) 654785 / <i>F-22 INCREMENT 3.2B</i>						
	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	110.432		115.000		173.647		-		173.647	242.217	641.296	-

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605213F / F-22 Modernization Increment 3.2B	Project (Number/Name) 654785 / F-22 INCREMENT 3.2B

F-22 Increment 3.2B Program Schedule Summary



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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force		Date: March 2014
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605213F / <i>F-22 Modernization Increment 3.2B</i>	Project (Number/Name) 654785 / <i>F-22 INCREMENT 3.2B</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment 3.2B HW Development/Risk Reduction/Lab Equipment**	1	2013	2	2015
Preliminary Technical Review (PTR)	2	2013	2	2013
Increment 3.2B Milestone B	3	2013	3	2013
Increment 3.2B Code, Integration, and Test	3	2013	4	2016
Increment 3.2B Critical Design Review (CDR)	1	2016	1	2016
Increment 3.2B Milestone C	4	2016	4	2016
Increment 3.2B Initial Operational Test & Evaluation (IOT&E)	3	2016	3	2017
Increment 3.2B Fleet Release	2	2018	2	2018
Increment 3.2B Retrofit***	2	2018	4	2019