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Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force	DATE: February 2011
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APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				PE 0101126F: <i>B-1B SQUADRONS</i>							
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	178.278	33.234	33.011	-	33.011	3.834	0.089	0.084	0.086	Continuing	Continuing
675344: <i>B-1B Modernization</i>	178.278	33.234	33.011	-	33.011	3.834	0.089	0.084	0.086	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program provides RDT&E AF funding for the B-1B modernization program. The modernization program addresses potential aircraft grounding issues and provides new and improved capabilities to the B-1B weapon system that require significant hardware and software development and testing. In addition, the modernization program addresses reliability and Diminishing Manufacturing Sources (DMS) deficiencies to prevent future grounding of B-1B aircraft. B-1B grounding items are addressed in the following efforts: Central Integrated Test System (CITS) upgrade, Radar Reliability and Maintainability Improvement Program (RMIP), Vertical Situational Display Upgrade (VSDU), and Inertial Navigation System (INS) upgrade. B-1B improvement efforts include, but are not limited to, the development of the Fully Integrated Data Link (FIDL), ALQ-161A Preprocessor Avionics Control Unit (PACU) software re-host/development, and Active Electronically Scanned Array (AESA) Radar study. FIDL integrates Link-16 and Beyond Line of Sight (BLOS) data links along with upgraded displays for improved connectivity to command and control authorities and for enhancements to targeting and weapons management. Upgrades to the B-1B training systems are included in the modernization program to keep the training systems current with the aircraft configuration. In addition, program funds cover engineering/planning studies, related engineering efforts, and initiatives for future weapon system enhancements, including efforts to improve weapon system operational capabilities, safety, supportability, maintainability, reliability, and total ownership cost. All B-1B development programs support planned requirements for unique identification in their production phases. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	178.278	33.234	6.273	-	6.273
Current President's Budget	178.278	33.234	33.011	-	33.011
Total Adjustments	-	-	26.738	-	26.738
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-	-	26.738	-	26.738

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 675344: *B-1B Modernization*

FY 2010	FY 2011

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>		R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>	
<u>Congressional Add Details (\$ in Millions, and Includes General Reductions)</u>		FY 2010	FY 2011
Congressional Add: <i>B1-B Modernization</i>		1.992	-
Congressional Add Subtotals for Project: 675344		1.992	-
Congressional Add Totals for all Projects		1.992	-
<u>Change Summary Explanation</u> FY 2012: Program increased by \$26.738M to support continued development of Vertical Situational Display Unit (VSDU) and other B-1B Modernization development efforts.			

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0101126F: B-1B SQUADRONS				PROJECT 675344: B-1B Modernization			
COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
675344: B-1B Modernization	178.278	33.234	33.011	-	33.011	3.834	0.089	0.084	0.086	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
<p>This program provides RDT&E AF funding for the B-1B modernization program. The modernization program addresses potential aircraft grounding issues and provides new and improved capabilities to the B-1B weapon system that require significant hardware and software development and testing. In addition, the modernization program addresses reliability and Diminishing Manufacturing Sources (DMS) deficiencies to prevent future grounding of B-1B aircraft. B-1B grounding items are addressed in the following efforts: Central Integrated Test System (CITS) upgrade, Radar Reliability and Maintainability Improvement Program (RMIP), Vertical Situational Display Upgrade (VSDU), and Inertial Navigation System (INS) upgrade. B-1B improvement efforts include, but are not limited to, the development of the Fully Integrated Data Link (FIDL), ALQ-161A Preprocessor Avionics Control Unit (PACU) software re-host/development, and Active Electronically Scanned Array (AESA) Radar study. FIDL integrates Link-16 and Beyond Line of Sight (BLOS) data links along with upgraded displays for improved connectivity to command and control authorities and for enhancements to targeting and weapons management. Upgrades to the B-1B training systems are included in the modernization program to keep the training systems current with the aircraft configuration. In addition, program funds cover engineering/planning studies, related engineering efforts, and initiatives for future weapon system enhancements, including efforts to improve weapon system operational capabilities, safety, supportability, maintainability, reliability, and total ownership cost. All B-1B development programs support planned requirements for unique identification in their production phases. This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.</p>											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: B-1B Modernization							176.286	33.234	33.011	-	33.011
Description: Continued B-1B Modernization											
FY 2010 Accomplishments:											
CITS received Milestone (MS) C approval in June 2010 following completion of the Aircraft Functional Test. Radar RMIP received MS C approval in January 2010 based on hardware qualification (A Low Rate Initial Production contract was awarded in September 2010). RMIP Flight Testing, which started in April, has continued through the year. PACU ALQ-161 software migration progressed during FY10 and will continue into FY11. INS completed ground test in Aug 2010. The flight test aircraft has been modified with the INS and Gyro Stabilization System Replacement (GSSR) hardware. FIDL qualified hardware, completed Phase I flight testing, and entered Phase II flight testing. FIDL received MS C approval in September 2010. Installation of VSDU hardware was accomplished on the flight test aircraft. Simulator/Trainers continued integration and support											

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0101126F: B-1B SQUADRONS			PROJECT 675344: B-1B Modernization				
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
efforts. General development related support for the flight test effort continued. Pre-contract award activities have been completed for the Congressional Add directing an AESA Radar study. FY 2011 Plans: PACU software migration will conclude in FY11. Radar RMIP will conclude flight test, Functional Configuration Audit/Physical Configuration Audit (FCA/PCA) and development effort in FY11. INS received Milestone C approval in Oct 2010. INS will conclude its flight test program, FCA/PCA and development effort. FIDL will complete Phase II of flight test and FCA/PCA and conclude development effort in FY11. VSDU will enter flight test. Simulator/Trainer development/support will continue. General development related support for the flight test effort will continue. FY 2012 Base Plans: VSDU will complete flight test and address any software or hardware issues that resulted from flight testing. VSDU will also complete FCA and modify test aircraft 0068. Simulator and training upgrades will require both software and hardware development and testing to support fielding of VSDU, CITS, and FIDL efforts. General development related to support of follow-on flight testing of major efforts. FY 2012 OCO Plans:											
Accomplishments/Planned Programs Subtotals							176.286	33.234	33.011	-	33.011
							FY 2010	FY 2011			
Congressional Add: B1-B Modernization FY 2010 Accomplishments: Execute a trade study to establish physical & functional interface requirements for potential B-1B Active Electronically Scanned Array (AESA) integration. FY 2011 Plans: Not Applicable.							1.992	-			
Congressional Adds Subtotals							1.992	-			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0101126F: Aircraft Procurement BP11, Mods	98.424	199.694	197.706	0.000	197.706	172.709	118.892	79.319	107.161	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0101126F: B-1B SQUADRONS				PROJECT 675344: B-1B Modernization			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PE 0809731F: Aircraft Procurement BP11, Mods	0.392	0.396	0.301	0.000	0.301	0.351	0.417	0.425	0.433	Continuing	Continuing
• PE 0207446F: Aircraft Procurement BP11, Mods	0.000	0.000	0.000	0.000	0.000	0.000	1.317	1.317	1.107	Continuing	Continuing
• PE 0101126F (3): B-1B, Aircraft Procurement BP16, Initial Spares	5.753	12.533	12.270	0.000	12.270	18.145	23.103	16.943	13.168	Continuing	Continuing
• PE 0101126F (4): B-1B, Aircraft Procurement BP12, Common Support Equipment	2.663	10.272	0.787	0.000	0.787	7.729	3.226	2.017	2.026	Continuing	Continuing
• PE 0101126F (5): B-1B, Aircraft Procurement BP13, Post Production Charges	3.917	6.791	4.743	0.000	4.743	0.965	0.422	0.000	0.000	Continuing	Continuing
D. Acquisition Strategy											
(U) Key elements of the overall B-1B Modernization acquisition strategy include: use of sole source contract with a prime/integrating contractor (Boeing); installed performance responsibility; use of cost plus incentive fee (CPIF) development contracts; and combining developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime and differences in fielded configurations.											
E. 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 2012 Air Force											DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0101126F: B-1B SQUADRONS				PROJECT 675344: B-1B Modernization						
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Central Integrated Test System (CITS)	SS/CPIF	Boeing:Long Beach, CA	5.201	0.231	Nov 2010	-		-		-	0.000	5.432	0.000	
Vertical Situation Display Upgrade (VSDU)	SS/CPFF	Boeing:Long Beach, CA	39.120	7.456	Nov 2010	22.911	Oct 2011	-		22.911	0.000	69.487	0.000	
Radar Reliability and Maintainability Improvement Program (RMIP)	SS/CPIF	Boeing:Long Beach, CA	32.225	6.532	Nov 2010	-		-		-	0.000	38.757	0.000	
Inertial Navigation System (INS)	SS/CPIF	Boeing:Long Beach, CA	37.218	3.910	Dec 2010	-		-		-	0.000	41.128	0.000	
Fully Integrated Data Link (FIDL)	SS/CPIF	Boeing:Long Beach, CA	50.210	11.034	Oct 2010	-		-		-	0.000	61.244	0.000	
ALQ-161A Preprocessor Avionics Control Unit (PACU)	SS/CPFF	Robins AFB:, GA	5.204	1.015	Oct 2010	-		-		-	0.000	6.219	0.000	
Active Electronically Scanned Array (AESA) Radar	SS/TBD	Boeing:Long Beach, CA	1.992	-		-		-		-	0.000	1.992	0.000	
Subtotal			171.170	30.178		22.911		-		22.911	0.000	224.259	0.000	
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Studies & Analyses	Various	Various:Various,	-	-		0.600	Apr 2012	-		0.600	0.170	0.770	0.000	
Simulator/Trainer	Various	Various:Various,	0.479	0.300	Oct 2010	6.500	Oct 2011	-		6.500	0.000	7.279	0.000	
Subtotal			0.479	0.300		7.100		-		7.100	0.170	8.049	0.000	
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
AFFTC	PO	Not specified.:	1.459	1.000	Jan 2011	1.500	Oct 2011	-		1.500	0.089	4.048	0.000	
Subtotal			1.459	1.000		1.500		-		1.500	0.089	4.048	0.000	

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Management Services (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
A&AS	Various	Various:Various,	5.170	1.756	Nov 2010	1.500	Oct 2011	-		1.500	0.000	8.426	0.000
Subtotal			5.170	1.756		1.500		-		1.500	0.000	8.426	0.000
Project Cost Totals			178.278	33.234		33.011		-		33.011	0.259	244.782	0.000

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>	PROJECT 675344: <i>B-1B Modernization</i>

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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0101126F: <i>B-1B SQUADRONS</i>	PROJECT 675344: <i>B-1B Modernization</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Central Integrated Test System (CITS) Upgrade Milestone (MS) C	3	2010	3	2010
CITS Contract Award (CA)	2	2011	2	2011
Vertical Situation Display Upgrade (VSDU) MS C	4	2011	4	2011
VSDU Development Testing (DT)	2	2011	1	2012
VSDU Full Rate Production (FRP) Decision Review (DR)	2	2012	2	2012
VSDU Critical Kit Item CA	2	2011	2	2011
Radar Reliability & Maintainability Improvement Program (RMIP) MS C	2	2010	2	2010
RMIP DT	3	2010	2	2011
RMIP FRP DR	3	2011	3	2011
Inertial Navigation System (INS) MS C	1	2011	1	2011
INS FRP DR	2	2011	2	2011
INS DT	1	2011	2	2011
INS CA	2	2011	2	2011
Fully Integrated Data Link (FIDL) MS C	4	2010	4	2010
FIDL FRP DR	1	2012	1	2012
FIDL DT	2	2011	4	2011
FIDL Low Rate Initial Production (LRIP) CA	2	2011	2	2011
ALQ-161 Preprocessor Avionics Control Unit (PACU) Software Migration Fielding Decision	4	2011	4	2011
Training Systems Upgrades Preliminary Design Review CA	1	2012	1	2012
Training Systems Upgrades Preliminary Design Review PDR	4	2012	4	2012
Studies CA	1	2012	1	2012
Studies Report	4	2012	4	2012

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