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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0604327F: Hardened Target Munitions							
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	28.310	20.891	22.389	0.000	22.389	42.640	1.720	0.000	0.000	Continuing	Continuing
645341: Direct Strike Penetrator Systems	28.310	20.891	22.389	0.000	22.389	42.640	1.720	0.000	0.000	20.101	157.050
Note FY09 OMNIBUS reprogramming funding of \$28.310M is a new start effort in support of the Massive Ordnance Penetrator (MOP) program.											
A. Mission Description and Budget Item Justification Hard Target Munitions program is an effort to hold at risk those highest priority assets essential to enemy's war with multiple layers of reinforced concrete, rock rubble, and/or earth overburden. Other hardened targets include operations within caves, tunnels, and mountains built using rapidly improving construction equipment exported by allies and adversaries on a large scale. (Examples include enemy command and control facilities, air defense facilities, facilities for production, storage, and deployment of weapons including weapons of mass destruction, surface to surface missile launch sites, aircraft storage sites, artillery sites.) Potential solutions include (but are not limited to) Special Forces, conventional short or long range ballistic missiles (land or sea launched), cruise missiles, direct attack munitions, and standoff weapons. Direct Strike Penetrator Systems project includes development of Massive Ordnance Penetrator (MOP), an advanced precision guided penetrator munition that will provide the Air Force with an improved capability using air-to-surface conventional munitions to attack HDBTs, such as bunker and tunnel facilities, with fewer weapons and number of missions necessary to defeat targets and increase overall survivability. The system will hold at risk those highest priority assets essential to the enemy's warfighting ability, which are heavily defended and protected, providing a critical global strike capability not currently met by inventory conventional weapons. This program is in Budget Activity 4 , Advanced Component Development and Prototypes because RDT&E includes advanced component development activities.											

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3600: Research, Development, Test & Evaluation, Air Force		PE 0604327F: Hardened Target Munitions			
BA 4: Advanced Component Development & Prototypes (ACD&P)					
B. Program Change Summary (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	0.000	20.891	0.000	0.000	0.000
Current President's Budget	28.310	20.891	22.389	0.000	22.389
Total Adjustments	28.310	0.000	22.389	0.000	22.389
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	28.310	0.000	22.389	0.000	22.389
Change Summary Explanation					
Funds requested in FY09 OMNIBUS to start the MOP program. Request for funds and new start was approved. Additional changes to the program that are not shown above include \$21.0M FY08 funds added via the same OMNIBUS request, and a \$4.9M FY08 below threshold request (BTR).					
The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner.					

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APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0604327F: Hardened Target Munitions				PROJECT 645341: Direct Strike Penetrator Systems			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
645341: Direct Strike Penetrator Systems	28.310	20.891	22.389	0.000	22.389	42.640	1.720	0.000	0.000	20.101	157.050
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification											
Direct Strike Penetrator Systems project includes development of Massive Ordnance Penetrator (MOP), an advanced precision guided penetrator munition that will provide the Air Force with an improved capability using air-to-surface conventional munitions to attack HDBTs, such as bunker and tunnel facilities, with fewer weapons and number of missions necessary to defeat targets and increase overall survivability. The system will hold at risk those highest priority assets essential to the enemy's warfighting ability, which are heavily defended and protected, providing a critical global strike capability not currently met by inventory conventional weapons. The MOP, which was developed by the Defense Threat Reduction Agency (DTRA) as a technology demonstration, will be further developed, tested, and integrated onto the B-2 bomber for a Direct Strike Penetrator capability in a high threat environment.											
B. Accomplishments/Planned Program (\$ in Millions)											
							FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
MAJOR THRUST: Massive Ordnance Penetrator (MOP) Weapon Development. Make changes to the B-52 Technology Demonstration design to allow integration of the MOP onto the B-2A.							16.600	11.491	10.740	0.000	10.740
FY 2009 Accomplishments: In FY 2009: Completed the MOP weapon Operational Flight Program (OFP) for integration with the B-2. Completed design of the MOP carriage and release equipment (CARE), CARE ground support equipment and MOP loading adapter (MLA). Initiated Technical Order documentation. Completed preliminary mission planning aircraft weapon equipment (AWE) software build. Established systems engineering requirements baseline and risk management process											

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: In FY 2010: Analyze and update the MOP system design against the MOP Quick Reaction Capability (QRC) Systems Requirements Document (SRD) and the B-2A Interface Control Documents (ICDs) to ensure weapon-to-aircraft compatibility and weapon performance in the operating environment.					
FY 2011 Base Plans: In FY 2011: Complete analysis and provide data/documentation required to support B-2A design, integration, and weapon system effectiveness (e.g. navigation, guidance, control, flight characteristics, system performance, A/W/E). Finalize system performance specification, which documents the weapon performance based on ground and flight tests. Update design to reflect changes needed to meet the weapon system performance objectives.					
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.					
MAJOR THRUST: Qualification Testing. MOP system qualification testing to allow weapon certification onto the B-2A.	4.700	2.300	0.000	0.000	0.000
FY 2009 Accomplishments: In FY 2009: Qualification planning and testing.					
FY 2010 Plans: In FY 2010: Fabricate hardware and plan/execute test. Qualification testing will include, but not be limited to, the delta qualification tests of the tailkit, HERO certification of the weapon, and certification of the carriage equipment.					
FY 2011 Base Plans: In FY2011: Not Applicable					

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.					
MAJOR THRUST: System Test and Evaluation. Conduct ground and flight tests of the MOP weapon system in order to demonstrate weapon effectiveness and suitability. FY 2009 Accomplishments: In FY 2009: Began system test planning and target construction. FY 2010 Plans: In FY 2010: Complete test and integration functions necessary to employ the MOP onto the B-2A. Included are safe separation analysis, software design updates, ground / flight worthiness testing, and safe separation flight tests. FY 2011 Base Plans: In FY 2011: Complete multiple live and inert flight tests. Analyze data and evaluate the demonstrated weapon capability against the performance specification. FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.	2.200	2.600	5.400	0.000	5.400
MAJOR THRUST: Flight Test Asset Fabrication. Fabricate all hardware (weapons, loading adapters, and carriage equipment) needed to execute flight testing FY 2009 Accomplishments: In FY 2009: Fabricated MOP warhead cases to be filled and assembled for B-2 integration flight test. Fabricated MLAs to support weapon loading during test. Fabricated CARE and CARE GSE to support flight testing.	3.100	2.800	4.604	0.000	4.604

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: In FY 2010: Build MOP all up rounds (AURs) to support two safe separation tests and four developmental tests.					
FY 2011 Base Plans: In FY 2011: Build residual flight test assets to support more developmental tests and potential operational testing.					
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.					
MAJOR THRUST: Program Office Support. Provide government oversight of MOP weapon development.	1.710	1.700	1.645	0.000	1.645
FY 2009 Accomplishments: In FY 2009: Conducted technical reviews of the design. Reviewed the establishment of the earned value baseline. Directed planning activities for qualification test, ground test, and flight test. Reviewed technical order source data development.					
FY 2010 Plans: In FY 2010: Support weapon development activities such as design reviews and ground/flight test planning and execution.					
FY 2011 Base Plans: In FY 2011: Execute MOP flight test program and provide weapon performance capability to the user.					
FY 2011 OCO Plans: In FY 2011 OCO: Not Applicable.					
Accomplishments/Planned Programs Subtotals	28.310	20.891	22.389	0.000	22.389

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<p>C. Other Program Funding Summary (\$ in Millions)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 20%;">Line Item</th> <th style="text-align: right; width: 10%;">FY 2009</th> <th style="text-align: right; width: 10%;">FY 2010</th> <th style="text-align: right; width: 10%;">FY 2011 Base</th> <th style="text-align: right; width: 10%;">FY 2011 OCO</th> <th style="text-align: right; width: 10%;">FY 2011 Total</th> <th style="text-align: right; width: 10%;">FY 2012</th> <th style="text-align: right; width: 10%;">FY 2013</th> <th style="text-align: right; width: 10%;">FY 2014</th> <th style="text-align: right; width: 10%;">FY 2015</th> <th style="text-align: right; width: 10%;">Cost To Complete</th> <th style="text-align: right; width: 10%;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>• PE 0604240F: <i>B-2 Advanced Technology Bomber</i></td> <td style="text-align: right;">41.022</td> <td style="text-align: right;">15.903</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>• PE 0101127F: <i>B-2 Squadrons</i></td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">11.690</td> <td style="text-align: right;">12.978</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">12.978</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>• PE 0208030F: <i>BPAC 353020 General Purpose Bombs</i></td> <td style="text-align: right;">20.200</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> </tbody> </table> <p>D. Acquisition Strategy Quick reaction capability with a sole source cost plus incentive fee contract to a single contractor.</p> <p>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.</p>												Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost	• PE 0604240F: <i>B-2 Advanced Technology Bomber</i>	41.022	15.903	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	• PE 0101127F: <i>B-2 Squadrons</i>	0.000	11.690	12.978	0.000	12.978	0.000	0.000	0.000	0.000	0.000	0.000	• PE 0208030F: <i>BPAC 353020 General Purpose Bombs</i>	20.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost																																																
• PE 0604240F: <i>B-2 Advanced Technology Bomber</i>	41.022	15.903	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000																																																
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0604327F: <i>Hardened Target Munitions</i>				PROJECT 645341: <i>Direct Strike Penetrator Systems</i>					
Product Development (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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
Weapon Development	SS/CPIF	Boeing (St Louis)	42.500	11.491	Jan 2010	10.740	Dec 2010	0.000		10.740	36.699	101.430	101.430
Qualification Testing	SS/CPIF	Boeing (St Louis)	4.700	2.300	Jan 2010	0.000		0.000		0.000	0.000	7.000	7.000
Subtotal			47.200	13.791		10.740		0.000		10.740	36.699	108.430	108.430
Remarks													
Test and Evaluation (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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
System Test & Evaluation	TBD/TBD	Eglin AFB FL	2.200	2.600	Feb 2010	5.400	Dec 2010	0.000		5.400	3.156	13.356	13.356
Flight Test Assets Fabrication	SS/CPIF	Boeing (St Louis)	3.100	2.800	Feb 2010	4.604	Dec 2010	0.000		4.604	0.000	10.504	10.504
Subtotal			5.300	5.400		10.004		0.000		10.004	3.156	23.860	23.860
Remarks													

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Management Services (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 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
AAC	TBD/TBD	Eglin AFB FL	1.710	1.700		1.645		0.000		1.645	4.505	9.560	9.560
Subtotal			1.710	1.700		1.645		0.000		1.645	4.505	9.560	9.560
Remarks													
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			54.210	20.891		22.389		0.000		22.389	44.360	141.850	141.850
Remarks Total Prior Years Cost may include only FY 2009 data.													

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Air Force

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

3600: Research, Development, Test & Evaluation, Air Force
BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0604327F: Hardened Target Munitions

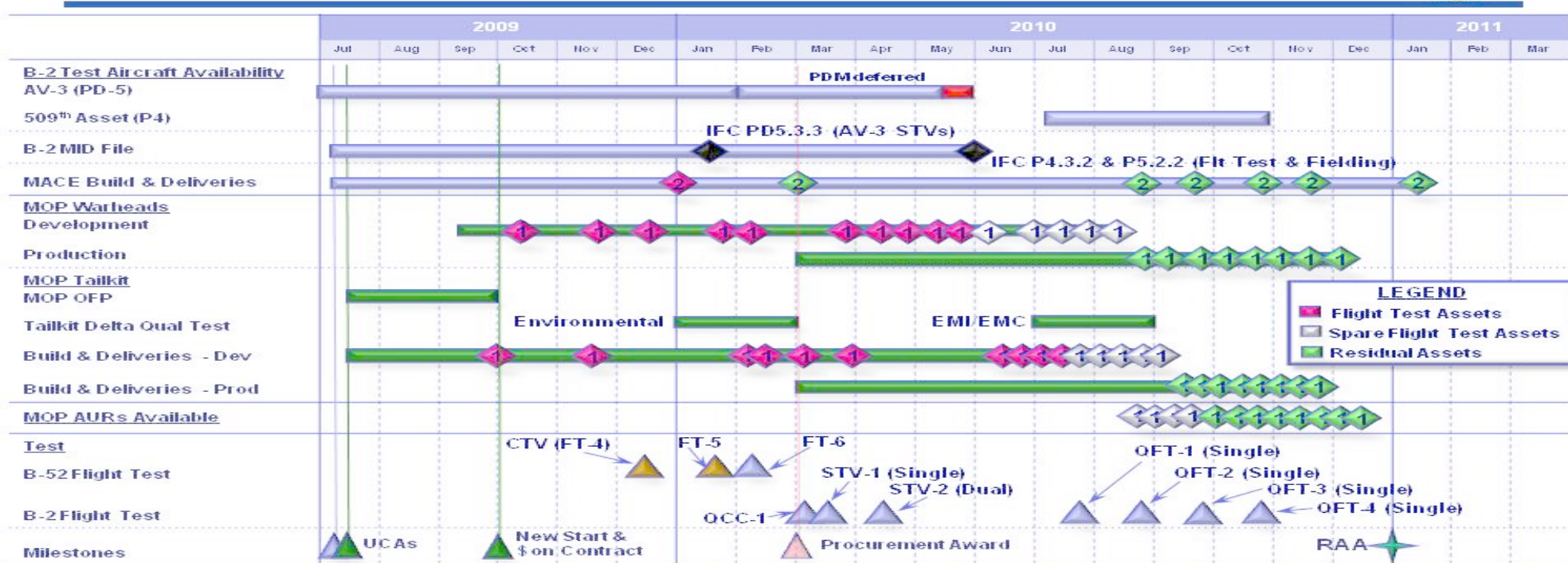
PROJECT

645341: Direct Strike Penetrator Systems

Limited Distribution D / Export Controlled



MOP QRC Schedule



Based on Boeing Version 4 & test matrix as of 2 Nov 09

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Air Force			DATE: February 2010
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Design Modification & Qualification Testing	4	2009	4	2010
Fuze & Ground Testing	3	2010	4	2010
Test Article Fabrication	4	2009	4	2010
Flight Test	2	2010	1	2011

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