

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604329F: Small Diameter Bomb (SDB) - EMD							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	593.102	133.902	143.000	115.000	-	115.000	54.000	18.000	64.000	15.675	24.006	1,160.685
655191: SDB Increment II	593.102	133.902	143.000	115.000	-	115.000	54.000	18.000	64.000	15.675	24.006	1,160.685
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
MDAP/MAIS Code(s): 439												
[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
^{##} The FY 2014 OCO Request will be submitted at a later date												
Note												
A. Mission Description and Budget Item Justification												
Small Diameter Bomb Increment II (SDB II) is a joint interest United States Air Force (USAF) and Department of Navy (DoN) ACAT ID program, with the Air Force (AF) as the lead service. SDB II provides the warfighter the capability to attack mobile targets from stand-off, through weather. SDB II addresses the following warfighter requirements: attack moving and stationary targets, adverse weather operations, multiple kills per pass, multiple ordnance carriage, precision munitions capability, reduced munitions footprint, increased weapons effectiveness, minimized potential for collateral damage, reduced susceptibility of munitions to countermeasures and provides a network enabled weapon capability via Link-16 and Ultra High Frequency (UHF) Weapon Data Link. The threshold aircraft for the AF is the F-15E, and the threshold aircraft for the DoN are the F-35B and F-35C. Objective aircraft include the F-22, F-16, F-35A, B-2, A-10, MQ-9, B-1, B-52, and the F/A-18 E/F. The AC-130 is being considered as an additional objective platform. SDB II will be compatible with the BRU-61 miniature munitions carriage, the CNU-660/E carriage system, the Common Munitions Bit and Reprogramming Equipment (CMBRE), and the Joint Mission Planning System (JMPS). The SDB II program will develop and field a single weapon storage container (USAF) and a dual weapon container (DoN).												
SDB II completed a 42-month competitive Risk Reduction phase in October 2009. Milestone B approval to enter the Engineering and Manufacturing Development (EMD) phase was received on 29 July 2010 and the subsequent Acquisition Program Baseline was signed on 08 October 2010. A Fixed Price Incentive Firm EMD contract was awarded on 09 August 2010. SDB II is a key component of the Air Force's Global Strike Task Force CONOPs and Global Precision Attack Core Function.												
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.												

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force				DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)		R-1 ITEM NOMENCLATURE PE 0604329F: Small Diameter Bomb (SDB) - EMD			
B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	132.881	143.000	115.000	-	115.000
Current President's Budget	133.902	143.000	115.000	-	115.000
Total Adjustments	1.021	0.000	0.000	-	0.000
• 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	5.028	0.000			
• SBIR/STTR Transfer	-4.007	0.000			
• Other Adjustments	0.000	0.000	0.000	-	0.000
Change Summary Explanation FY12 Reprogrammings: Rebalance of Program Management Administration (PMA)					
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2012	FY 2013
Title: Development				105.380	110.880
Description: Engineering and Manufacturing Development (EMD): Development of SDB II design that delivers the capability described in the SDB II Capability Development Document (CDD) as specified in the government approved SDB II System Performance Specification (SPS) and prepare for production, deployment, and sustainment.					
FY 2012 Accomplishments: Completed Integrated System Design (ISD) and began System Capability and Manufacturing Process Demonstration activities. Continued to mature SDB II production design to include: design verification testing and subsystems qualification testing. Continued Developmental Testing (DT) for the SDB II Normal Attack Mode. Delivered first all-up-round (AUR). Conducted first Guided Test Vehicle (GTV) flight test mission at White Sands Missile Range to demonstrate weapon performance against a moving target. Conducted two Captive Test Vehicle (CTV) flight test missions verifying guidance & control system performance in airborne environment. Completed initial Integrated Flight Simulation model to verify weapon effectiveness. Activities include, but are not limited to, designing, developing, and verifying production capability that delivers production quantities while ensuring the "as built" items conform to the EMD design and meet SPS requirements.					
FY 2013 Plans: Continue System Capability and Manufacturing Process Demonstration activity and build first production representative AUR. Transition test asset assembly to production facilities. Continue DT activities for SDB II Normal Attack Mode. Plan to execute eight GTV flight missions, three CTV flight missions, and first two Live Fire tests. Complete qualification testing of production					

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>		R-1 ITEM NOMENCLATURE PE 0604329F: <i>Small Diameter Bomb (SDB) - EMD</i>		
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
configuration. Start and complete AUR environmental qualification testing. Conduct Operational Assessment and prepare for Milestone C review. Activities include, but are not limited to, designing, developing, and verifying production capability that delivers production quantities while ensuring the "as built" items conform to the EMD design and meet SPS requirements. FY 2014 Plans: Complete System Verification Review and conduct Milestone C review. Continue DT for Normal Attack Mode and begin DT for Coordinate Attack Mode and Semi-active Laser Mode. Begin reliability testing with the Captive Carry Reliability Test (CCRT) program. Begin development of maintenance and aircrew training. Complete Common Munitions Bit/Reprogramming Equipment software development. Activities include, but are not limited to, designing, developing, and verifying production capability that delivers production quantities while ensuring the "as built" items conform to the EMD design and meet SPS requirements.				
Title: Integration and Qualification Testing Description: F-15E aircraft Integration: Aircraft integration incorporates tests and targets, Modeling and Simulation (M&S), target lethality, data link and mission planning. Develop Suite 7E Operational Flight Program (OFP) upgrade to provide the capability to program the weapon with mission planned targets, weapon data link control, and exclusion zone information prior to launch of the weapon. It also allows the aircrew to make in-flight edits of target and weapon data link programming if/when required based on employment scenarios. FY 2012 Accomplishments: Continued ground testing and flight testing on F-15E. Executed first GTV flight test mission at White Sands Missile Range. Executed two CTV flight test missions which verified critical flight parameters. Continued F-15E OFP upgrades. Delivered final release of mission planning software and continued mission planning to support DT. Continued target vehicle procurement to support testing. Completed 306 of 342 planned warhead lethality/effectiveness characterization tests. Conducted Advanced Joint Effectiveness Model (AJEM) lethality modeling and testing. Conducted sympathetic detonation testing on warhead and verified warhead detonation stability in explosive environments. Continued collaboration with National Security Agency (NSA) and Joint Interoperability Test Command (JITC) on weapon data link key managements software. Continued Aviation and Missile Research Development and Engineering Center (AMRDEC) support for modeling and simulation tasks and Verification, Validation, and Accreditation (VV&A). Continued to develop/modify Air and Space Operations Center (AOC) software application to transmit data link network tasking. Delivered final release of mission planning software and continued mission planning support to DT. FY 2013 Plans: Continue to execute ground and flight testing and target procurement to support testing. Continue DT activities for SDB II Normal Attack Mode: plan to conduct eight GTV flight missions, three CTV flight missions, and first two Live Fire tests. Conduct Operational Assessment and prepare for Milestone C review. Begin BRU-61 qualification efforts. Perform logistics demonstration. Conduct AJEM lethality modeling and testing. Continue collaboration with NSA and JITC on weapon data link key managements		26.069	28.563	42.663

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force							DATE: April 2013				
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604329F: Small Diameter Bomb (SDB) - EMD							
C. Accomplishments/Planned Programs (\$ in Millions)							FY 2012	FY 2013	FY 2014		
software. Continue AMRDEC support for modeling and simulation tasks and VV&A. Integrate SDB II with Command and Control Infrastructure, including AOC. Deliver final release of mission planning software and continue mission planning support during DT.											
FY 2014 Plans: Continue to conduct ground and flight testing and target procurement to support testing. Continue DT for Normal Attack Mode and begin flight test for Coordinate Attack Mode and Semi-active Laser Mode. Plan to conduct approximately 20 GTV and Live Fire missions. Begin OFP update and continue qualification efforts for BRU-61. Continue AJEM lethality modeling and testing. Continue collaboration with NSA and JITC on weapon data link key managements software. Continue AMRDEC support for modeling and simulation tasks and VV&A. Continue integration of SDB II with Command and Control Infrastructure, including AOC. Continue mission planning support during DT. Conduct Milestone C review.											
Title: Management							2.453	3.557	3.281		
Description: Provide support for SDB II program office to conduct operations to accomplish its mission. This includes, but is not limited to, Advisory and Assistance Support (A&AS) for technical and managerial support, and program management administration for travel and miscellaneous supplies. The SDB II Program Office at Eglin Air Force Base will act as the Single Manager for the entire life cycle of the SDB II weapon system.											
FY 2012 Accomplishments: Continued support for Program Office to conduct operations to accomplish its mission. Provide support required to obtain Milestone C approval to include development and coordination of required documentation and reviews.											
FY 2013 Plans: Continue support for Program Office to conduct operations to accomplish its mission. Provide support required to obtain Milestone C approval to include development and coordination of required documentation and reviews.											
FY 2014 Plans: Continue support for Program Office to conduct operations to accomplish its mission. Conduct Milestone C review.											
Accomplishments/Planned Programs Subtotals							133.902	143.000	115.000		
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• MPAF: BA05: Line Item #	0.000	42.000	42.347		42.347	71.353	101.961	94.770	73.458	1,434.707	1,860.596
SDB000: Small Diameter Bomb											

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force									DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604329F: Small Diameter Bomb (SDB) - EMD							
D. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• RDT&E: BA05: PE 0604329N: Small Diameter Bomb	17.906	17.792	27.265		27.265	33.023	45.360	63.750	68.846	126.064	478.129
• WPN: BA05: Line Item # 223800: Small Diameter Bomb	0.000	0.000	0.000		0.000	0.000	0.000	25.543	98.502	565.105	689.150
Remarks											
Navy RDT&E funds include F-35B and F-35C Integration and Support Cost											
E. Acquisition Strategy											
The SDB II Engineering and Manufacturing Development (EMD) contract was awarded using competitive procedures. At the completion of the 42-month Risk Reduction phase in October 2009, one contractor was selected in April 2010 and awarded the EMD contract in August 2010. The EMD contract is a Fixed-Price Incentive Firm (FPIF) contract with priced production options for the first five production lots. SDB II production Lots 1-3 are FPIF. Production Lots 4-5 are fixed price not-to-exceed pricing with an economic price adjustment clause for labor and materials. The Government is buying the SDB II based on the contractor System Performance Specification (SPS). The contractor is accountable for system performance as defined in the SPS and a system warranty as defined in the EMD contract. Accordingly, the contractor is accountable to the Government for the design of the weapon system, as well as the planning and execution of the Development Test & Evaluation (DT&E) program to verify system performance. The Government formally arranges and funds the use of Government flight test support for DT&E.											
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.											

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE				PROJECT					
3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)						PE 0604329F: Small Diameter Bomb (SDB) - EMD				655191: SDB Increment II					
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Risk Reduction Contract 1	C/CPFF	Boeing:St. Louis, MO	151.922	0.000		0.000		0.000		-		0.000	0.000	151.922	151.922
Risk Reduction Contract 2	C/CPFF	Raytheon:Tucson, AZ	150.800	0.000		0.000		0.000		-		0.000	0.000	150.800	149.780
EMD Contract	C/FPIF	Raytheon:Tucson, AZ	176.425	103.614	Oct 2011	95.147	Oct 2012	50.792	Oct 2013	-		50.792	56.595	482.573	403.582
Technical Support Contract	SS/ Various	Raytheon:Tucson, AZ	0.324	1.746	Mar 2012	4.217	Nov 2012	7.750	Dec 2013	-		7.750	12.331	26.368	26.368
MPACT High Pressure Air Compressor System	SS/FFP	Boeing:St. Charles, MO	3.175	0.000		0.000		0.000		-		0.000	0.000	3.175	3.175
F-15E Integration and Test Support	SS/ Various	Boeing:St. Louis, MO	30.351	4.755	Jan 2012	7.299	Jan 2013	6.535	Jan 2014	-		6.535	4.109	53.049	53.049
BRU-61/A Integration and Test Support	SS/ Various	Boeing:St. Charles, MO	3.901	0.874	Mar 2012	1.501	Mar 2013	4.144	Mar 2014	-		4.144	5.570	15.990	15.990
Mission Planning	Various	Various:Various,	4.124	0.734	Nov 2011	0.239	Dec 2012	0.601	Dec 2013	-		0.601	1.208	6.906	6.906
Data Link Integration & Support	Various	Various:Various,	1.954	0.342	Dec 2011	0.608	Dec 2012	2.874	Dec 2013	-		2.874	3.189	8.967	8.967
System Performance & Lethality	Various	Various:Various,	20.757	7.568	Nov 2011	3.624	Nov 2012	4.931	Nov 2013	-		4.931	5.060	41.940	41.940
Other Product Development	Various	Various:Various,	5.406	2.144	Mar 2012	5.979	Nov 2012	4.128	Nov 2013	-		4.128	56.294	73.951	73.951
Subtotal			549.139	121.777		118.614		81.755		0.000		81.755	144.356	1,015.641	935.630
Remarks															
None.															
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Costs	Various	Various:Various,	1.114	0.583	Apr 2012	0.779	Apr 2013	0.808	Apr 2014	-		0.808	0.981	4.265	4.265
Subtotal			1.114	0.583		0.779		0.808		0.000		0.808	0.981	4.265	4.265

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>						R-1 ITEM NOMENCLATURE PE 0604329F: <i>Small Diameter Bomb (SDB)</i> - EMD						PROJECT 655191: <i>SDB Increment II</i>			
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks None.															
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
DT&E: 96th Test Wing	PO	96th Test Wing:Eglin AFB, FL	5.377	3.476	Dec 2011	10.256	Nov 2012	7.601	Nov 2013	-		7.601	14.058	40.768	40.768
DT&E: UTTR, WSMR	Various	Various:Various,	2.389	1.333	Apr 2012	2.350	Nov 2012	12.625	Nov 2013	-		12.625	7.463	26.160	26.160
Targets	PO	Various:Various,	13.842	2.959	Jan 2012	5.771	Jan 2013	7.342	Jan 2014	-		7.342	0.380	30.294	30.294
Other Test Support	Various	Various:Various,	1.388	1.321	Dec 2011	1.673	Dec 2012	1.589	Dec 2013	-		1.589	2.886	8.857	8.857
Subtotal			22.996	9.089		20.050		29.157		0.000		29.157	24.787	106.079	106.079
Remarks None.															
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Technical Acquisition Management Support (TAMS)	Various	COLSA Corp:Eglin AFB, FL	0.706	0.231	Mar 2012	0.494	Feb 2013	0.443	Feb 2014	-		0.443	0.688	2.562	2.562
Technical and Engineering Acquisition Support (TEAS)	Various	Jacobs Technology:Eglin AFB, FL	13.442	0.677	Dec 2011	0.966	Dec 2012	0.919	Dec 2013	-		0.919	1.503	17.507	17.507
Program Management Administration (PMA)	Various	Various:Eglin AFB, FL	5.705	1.545	Oct 2011	2.097	Oct 2012	1.918	Oct 2013	-		1.918	3.366	14.631	14.631
Subtotal			19.853	2.453		3.557		3.280		0.000		3.280	5.557	34.700	34.700

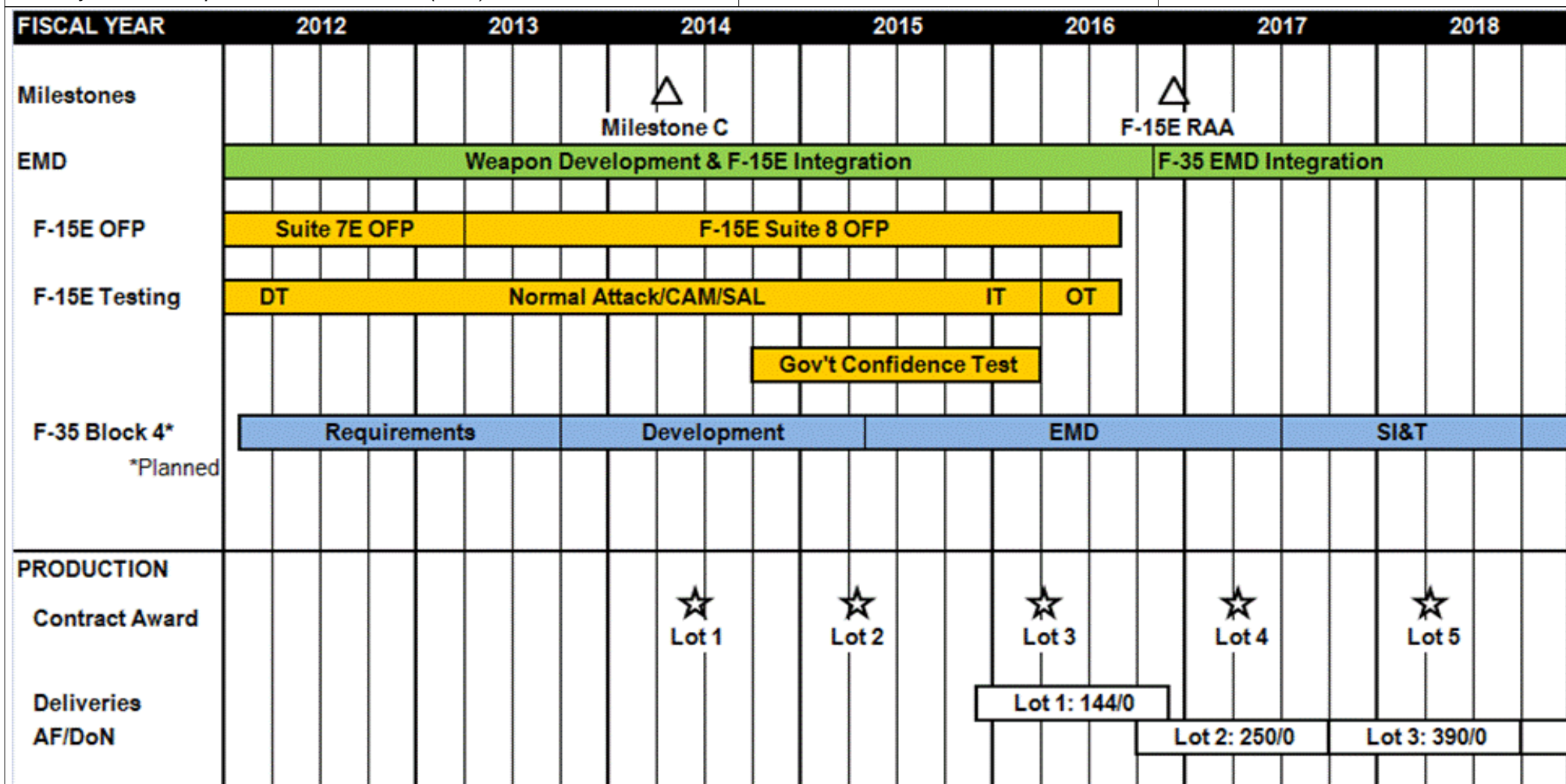
UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force										DATE: April 2013					
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)						R-1 ITEM NOMENCLATURE PE 0604329F: Small Diameter Bomb (SDB) - EMD				PROJECT 655191: SDB Increment II					
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks None.															
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			593.102	133.902		143.000		115.000		0.000		115.000	175.681	1,160.685	1,080.674
Remarks The EMD contract budget and Target Value differ due to: 1) EMD contract is budgeted to the contract ceiling price. 2) EMD contract budget includes funding for 32 additional developmental test assets (28 tests plus 4 spares) identified during Milestone B. The addition of the test assets requires a modification to the contract and thus is not included in the current Target Value. The EMD Target Value includes AF funding only. The target value for the contract, including Navy funding, is \$450.827. UTTR: Utah Test and Training Range WSMR: White Sands Missile Range															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force	DATE: April 2013
---	-------------------------

APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 5: System Development & Demonstration (SDD)	R-1 ITEM NOMENCLATURE PE 0604329F: Small Diameter Bomb (SDB) - EMD	PROJECT 655191: SDB Increment II
---	---	--



UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Air Force			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 5: <i>System Development & Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604329F: <i>Small Diameter Bomb (SDB)</i> - EMD	PROJECT 655191: <i>SDB Increment II</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
F-15 Integration Developmental/Operational Testing	1	2012	4	2016
Milestone C	2	2014	2	2014