

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force										Date: February 2015		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0101125F I Nuclear Weapons Modernization							
COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	143.990	33.000	168.357	212.121	-	212.121	206.283	152.435	99.732	48.188	26.610	1,090.716
657007: B61 LIFE EXTENSION PROGRAM	143.990	33.000	168.357	212.121	-	212.121	206.283	152.435	99.732	48.188	26.610	1,090.716
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
Program MDAP/MAIS Code: 468												
A. Mission Description and Budget Item Justification												
The purpose of this program element is to conduct and support United States Air Force (USAF) and Joint Department of Defense (DoD)- Department of Energy (DOE) acquisition activities for the modernization of nuclear weapons.												
B61-12 Life Extension Program (LEP): The B61-12 LEP will integrate DoE efforts to extend the service life of the warhead with DOD efforts to develop a guided Tail Kit Assembly (TKA) required to maintain current B61 mission characteristics. Programmatic integration of the Air Force-led, joint DoD-DOE program is accomplished through the B61 LEP Project Officers Group (POG) and its subgroups. In accordance with Air Force Materiel Command mission assignment memo (dated 17 Feb 11) and National Nuclear Security Administration (NNSA)-Air Force Nuclear Weapons Center (AFNWC) Memorandum of Understanding (MOU dated 28 Jun 12), the USAF is responsible for development, acquisition and delivery of a guided TKA and All Up Round (AUR) technical integration, system qualification and fielding of the B61-12 variant on multiple platforms.												
This program is in Budget Activity 5, System Development and Demonstration (SDD), because it is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.												
B. Program Change Summary (\$ in Millions)				FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total				
Previous President's Budget				33.000	198.357	213.532	-	213.532				
Current President's Budget				33.000	168.357	212.121	-	212.121				
Total Adjustments				-	-30.000	-1.411	-	-1.411				
• Congressional General Reductions				-	-							
• Congressional Directed Reductions				-	-30.000							
• Congressional Rescissions				-	-							
• Congressional Adds				-	-							
• Congressional Directed Transfers				-	-							
• Reprogrammings				-	-							
• SBIR/STTR Transfer				-	-							
• Other Adjustments				-	-	-1.411	-	-1.411				

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Air Force		Date: February 2015		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 5: System Development & Demonstration (SDD)		R-1 Program Element (Number/Name) PE 0101125F I Nuclear Weapons Modernization		
Change Summary Explanation FY15: Congressional Mark of -\$30M for favorable cost variances/Forward financing. FY16: Other adjustment reduction of -\$1.411M for inflation.				
C. Accomplishments/Planned Programs (\$ in Millions)		FY 2014	FY 2015	FY 2016
Title: Engineering & Manufacturing Development Contract (B61)		17.500	97.776	87.145
Description: Prime contract to develop, test, integrate and nuclear certify a guided TKA in support of the B61-12 LEP.				
FY 2014 Accomplishments: Performed B61-12 TKA development, design, test, integration, qualification and nuclear certification activities in support of the B61-12 LEP. Supported design, integration and testing of the B61-12 system and verification of requirements and validation of TKA performance. Established B61-12 TKA program practices that ensured the following were met: requirements flow down, requirement allocation to hardware and software, requirements compliance matrix, system performance, reliability, maintainability, product assurance, testability, producibility and supportability.				
FY 2015 Plans: Continues B61-12 TKA development, design, test, integration, qualification and nuclear certification activities in support of the B61-12 LEP. Continues design, integration and testing of the B61-12 system and verification of requirements and validation of TKA performance. Continues flight testing to verify aircraft flight environments in support of weapon development. Continues B61-12 TKA program practices that ensure the following are met: requirements flow down, requirement allocation to hardware and software, requirements compliance matrix, system performance, reliability, maintainability, product assurance, testability, producibility and supportability. Conducts contractor flight tests with weapons drops in preparation for the Critical Design Review (CDR). Conducts Environmental and Separation Flight Testing. Provides support to DOE flight tests in preparation for the Baseline Design Review (BDR) for the bomb assembly (BA). Supports aircraft Operational Flight Program (OFP) development and integration to deliver the OFP test tapes for flight testing.				
FY 2016 Plans: Continues B61-12 TKA development, design, test, integration, qualification and nuclear certification activities in support of the B61-12 LEP. Continues design, integration and testing of the B61-12 system and verification of requirements and validation of TKA performance. Continues flight testing to verify aircraft flight environments in support of weapon development. Continues B61-12 TKA program practices that ensure the following are met: requirements flow down, requirement allocation to hardware and software, requirements compliance matrix, system performance, reliability, maintainability, product assurance, testability, producibility and supportability. Provides support to the DOE flight tests in support of the BDR for the BA. Provides support to aircraft OFP development and integration to deliver the OFP test tapes in support of flight testing. Continues TKA Developmental Test (DT) drops, and preparation work for FY17 System Qualification drops.				
Title: All Up Round (AUR) Technical Integration (B61)		5.769	11.858	12.512

# UNCLASSIFIED

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0101125F / <i>Nuclear Weapons Modernization</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
<b>Description:</b> Covers all system engineering tasks in support of AUR technical integration, qualification & fielding, including program support to the B61 LEP POG.				
<b>FY 2014 Accomplishments:</b> Performed B61-12 system qualification plan, warhead component qualification, TKA qualifications, and B61-12 AUR integration activities. Provided support to maintain technical and programmatic schedules and program documents that support the AUR technical integration. Developed warhead-to-TKA interface requirements and design. Provided technical expertise to maintain B61-12 aircraft compatibility with delivery platforms through completion of the test and evaluation program. Developed Compatibility Test Units (CTU) to support early integration efforts at the aircraft system integration laboratories. Conducted B61-12 AUR technical and programmatic reviews, including design reviews, systems reviews, technical interchange meetings, and test reviews. Conducted test assessments to validate model & simulation results in support of system qualification; configuration management of B61-12 AUR drawings, interface control documents, and system specifications; and development of trainers and other USAF configurations.				
<b>FY 2015 Plans:</b> Continues B61-12 system qualification plan, warhead component qualification, TKA qualifications, and B61-12 AUR integration activities. Continues support to maintain technical and programmatic schedules and program documents that support the AUR technical integration. Continues to develop warhead-to-TKA interface requirements and design. Continues to provide technical expertise to maintain B61-12 aircraft compatibility with platforms through completion of the test and evaluation program. Continues to develop Compatibility Test Units (CTUs) to support early integration efforts at the aircraft system integration laboratories. Includes B61-12 AUR technical and programmatic reviews, including design reviews, systems reviews, technical interchange meetings, and test reviews. Also includes test assessments to validate modeling and simulation results in support of system qualification; configuration management of B61-12 AUR drawings, interface control documents, and system specifications; and development of trainers and other USAF configurations. Provides AUR integration support to the DOE flight tests in support of the BDR for the BA.				
<b>FY 2016 Plans:</b> Continues B61-12 system qualification plan, warhead component qualification, TKA qualifications, and B61-12 AUR integration activities. Continues support to maintain technical and programmatic schedules and program documents that support the AUR technical integration. Continues to develop warhead-to-TKA interface requirements and design. Continues to provide technical expertise to maintain B61-12 aircraft compatibility with platforms through completion of the test and evaluation program. Continues to develop CTUs to support integration efforts at the aircraft system integration laboratories. Includes B61-12 AUR technical and programmatic reviews, including design reviews, systems reviews, technical interchange meetings, and test reviews. Also includes test assessments to validate modeling and simulation results in support of system qualification; configuration				

# UNCLASSIFIED

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force		<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 5: System Development &amp; Demonstration (SDD)</i>		<b>R-1 Program Element (Number/Name)</b> PE 0101125F / <i>Nuclear Weapons Modernization</i>		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
management of B61-12 AUR drawings, interface control documents, and system specifications; and development of trainers and other USAF configurations. Provides AUR integration support to the DOE flight tests in support of the BDR Review for the BA. Provides AUR integration support to the DOE in preparation for System Qualification drops.				
<b>Title:</b> Aircraft Integration (B61)  <b>Description:</b> B61-12 integration with aircraft, including mission planning system upgrades to accommodate the new weapon variant and weapon design compatibility with objective aircraft.  <b>FY 2014 Accomplishments:</b> Provided meeting participation/membership and fit checks with aircraft. Continued test tapes development and demonstration/validation of the OFP. Continued mission planning upgrades for aircraft and design compatibility with objective aircraft.  <b>FY 2015 Plans:</b> Continues meeting participation/membership and integration activities with aircraft. Continues test tapes development and demonstration/validation of the OFP. Continues mission planning upgrades for aircraft and design compatibility with objective aircraft. Conducting aircraft OFP development and integration to deliver the OFP test tapes in support of flight testing.  <b>FY 2016 Plans:</b> Continues meeting participation/membership and integration activities for aircraft. Continues test tapes development and demonstration/validation of the OFP. Continues design compatibility with aircraft. Continues mission planning upgrades. Continues OFP development and integration to deliver the OFP test tapes in support of flight testing.		6.652	45.557	62.111
<b>Title:</b> Test Support (B61)  <b>Description:</b> Test activities and support for TKA design validation & verification and nuclear certification, as well as B61-12 AUR system qualification (includes design and operational certification activities).  <b>FY 2014 Accomplishments:</b> Test planning and execution activities to support B61-12 weapon development, AUR technical integration and aircraft integration were conducted. Conducted ground test activities to verify warhead-to-tailkit integration to include wind tunnel testing. Conducted aircraft and support equipment fit check activities. Continued flight testing to verify aircraft flight environments in support of weapon development, and AUR design verification. Continued development and delivery of necessary BAs to accomplish TKA test and trainer activities.  <b>FY 2015 Plans:</b> Continues test planning and execution activities to support B61-12 weapon development, AUR technical integration and aircraft integration. Continues flight testing to verify aircraft flight environments and TKA and AUR design verification, including		3.079	13.166	50.353

# UNCLASSIFIED

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2016 Air Force										<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>					<b>R-1 Program Element (Number/Name)</b> PE 0101125F / <i>Nuclear Weapons Modernization</i>							
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>										<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>
environmental and separation flight testing, initial autopilot and contractor flight tests with weapons drops in preparation for the CDR. Continues development and delivery of necessary BAs to accomplish TKA test and trainer activities. Provides support to the DOE flight tests in support of the BDR for the BA. Supports aircraft OFP development and integration to deliver the OFP test tapes in support of flight testing.												
<b>FY 2016 Plans:</b> Continues test planning and execution activities to support B61-12 weapon development, AUR technical integration and aircraft integration. Continues flight testing to verify aircraft flight environments and TKA and AUR design verification, including initial TKA DT drops and preparation for AUR System Qualification drops. Continues development and delivery of necessary BAs to accomplish TKA test and trainer activities. Provides support to the DOE flight tests in support of the BDR for the bomb assembly. Supports aircraft development and integration to deliver the OFP test tapes in support of flight testing.												
<b>Accomplishments/Planned Programs Subtotals</b>										33.000	168.357	212.121
<b>D. Other Program Funding Summary (\$ in Millions)</b>												
<b>Line Item</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016 Base</b>	<b>FY 2016 OCO</b>	<b>FY 2016 Total</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
• PAAF: BA01 Line Item # 354040: B61	-	-	-	-	-	-	146.575	208.615	2.478	-	357.668	
<b>Remarks</b>												
<b>E. Acquisition Strategy</b> Full and open competition as approved by the MDA. Per the MDA the Engineering Manufacturing and Development (EMD) phase consists of EMD phase 1 and EMD phase 2.												
<b>F. Performance Metrics</b> 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**

<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2016 Air Force</b>												<b>Date: February 2015</b>			
<b>Appropriation/Budget Activity</b> 3600 / 5						<b>R-1 Program Element (Number/Name)</b> PE 0101125F / <i>Nuclear Weapons Modernization</i>						<b>Project (Number/Name)</b> 657007 / <i>B61 LIFE EXTENSION PROGRAM</i>			
<b>Product Development (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
B61 LEP EMD Contract	C/CPIF	Boeing : St Charles, MO	91.861	15.059	Nov 2013	91.974	Nov 2014	80.805	Nov 2015	-		80.805	167.822	447.521	185.000
<b>Subtotal</b>			91.861	15.059		91.974		80.805		-		80.805	167.822	447.521	185.000
<b>Support (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
AUR Technical Integration	MIPR	Various : various,	11.234	5.769	Apr 2014	11.858	Oct 2014	12.512	Oct 2015	-		12.512	37.357	78.730	-
Aircraft Integration	MIPR	Various : various,	17.540	6.652	Oct 2014	45.557	Oct 2014	62.111	Oct 2015	-		62.111	120.459	252.319	-
<b>Subtotal</b>			28.774	12.421		57.415		74.623		-		74.623	157.816	331.049	-
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Test Support for B61 LEP Development	MIPR	96 TW : Eglin, FL	12.042	3.079	Jun 2014	13.166	Oct 2014	50.353	Oct 2015	-		50.353	161.848	240.488	-
<b>Subtotal</b>			12.042	3.079		13.166		50.353		-		50.353	161.848	240.488	-
<b>Management Services (\$ in Millions)</b>				<b>FY 2014</b>		<b>FY 2015</b>		<b>FY 2016 Base</b>		<b>FY 2016 OCO</b>		<b>FY 2016 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
PMA	Various	various : various,	11.313	2.441	Oct 2013	5.802	Oct 2014	6.340	Oct 2015	-		6.340	19.152	45.048	-
<b>Subtotal</b>			11.313	2.441		5.802		6.340		-		6.340	19.152	45.048	-
<b>Project Cost Totals</b>			143.990	33.000		168.357		212.121		-		212.121	506.638	1,064.106	-

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2016 Air Force							Date: February 2015			
Appropriation/Budget Activity 3600 / 5				R-1 Program Element (Number/Name) PE 0101125F / Nuclear Weapons Modernization		Project (Number/Name) 657007 / B61 LIFE EXTENSION PROGRAM				
	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	Cost To Complete	Total Cost	Target Value of Contract	
Remarks										

**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2016 Air Force			<b>Date:</b> February 2015		
<b>Appropriation/Budget Activity</b> 3600 / 5		<b>R-1 Program Element (Number/Name)</b> PE 0101125F / <i>Nuclear Weapons Modernization</i>			<b>Project (Number/Name)</b> 657007 / <i>B61 LIFE EXTENSION PROGRAM</i>

	FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				FY 2020			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Engineering & Manufacturing Development Phase 1 & 2																												
Engineering & Manufacturing Development Phase 2 option																												
All-Up-Round Integraton Test																												
Ground Test/WTT/Flight Test																												
F-15E Integration																												
PDR																												
CDR																												
F-16 Integration																												
B-2A Integration																												
PA-200 Integration																												
F-35 Integration																												
Milestone C Decision																												
Production																												



**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2016 Air Force			<b>Date:</b> February 2015
<b>Appropriation/Budget Activity</b> 3600 / 5	<b>R-1 Program Element (Number/Name)</b> PE 0101125F / <i>Nuclear Weapons Modernization</i>	<b>Project (Number/Name)</b> 657007 / <i>B61 LIFE EXTENSION PROGRAM</i>	

**Schedule Details**

<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Engineering & Manufacturing Development Phase 1 & 2	1	2014	4	2020
Engineering & Manufacturing Development Phase 2 option	1	2016	1	2016
All-Up-Round Integraton Test	1	2014	4	2018
Ground Test/WTT/Flight Test	1	2014	4	2019
F-15E Integration	1	2014	4	2018
PDR	4	2014	4	2014
CDR	1	2016	1	2016
F-16 Integration	1	2015	4	2018
B-2A Integration	2	2015	4	2018
PA-200 Integration	3	2015	4	2017
F-35 Integration	3	2015	4	2018
Milestone C Decision	3	2018	3	2018
Production	3	2018	4	2020