Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-468

B61 Mod 12 Life Extension Program Tailkit Assembly (B61 Mod 12 LEP TKA)

As of FY 2019 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Sensitivity Originator

No originator info Available at this time.

Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President's Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name
B61 Mod 12 Life Extension Program Tailkit Assembly (B61 Mod 12 LEP TKA)

DoD Component
Air Force

Responsible Office

Col Paul Rounsavall
207 West D Ave, Bldg 349
RM 626
Eglin Air Force Base, FL 32542

paul.rounsavall@us.af.mil

Phone: 850-882-7759
Fax: 850-883-3823
DSN Phone: 872-7759
DSN Fax: 872-3823
Date Assigned: June 30, 2016

References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 14, 2012

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated December 14, 2012

Mission and Description

The B61 Mod 12 Life Extension Program (LEP) will consolidate Mods 3, 4, 7 and 10 into a single Mod (B61-12) while extending the system's service life. B61-12 is an air-delivered nuclear gravity weapon providing nuclear capability on existing legacy aircraft and dual capable aircraft. The single variant will operate in two modes, System 1 (analog/ballistic mode) and System 2 (digital/guided mode).

The B61 Mod 12 LEP Tailkit Assembly (TKA) is the enabler for realizing System 2. This is an Air Force led ACAT ID Program. The DoD responsibility is executed by the Air Force Nuclear Weapons Center (AFNWC). In accordance with the Air Force Materiel Command mission assignment memorandum (dated February 11, 2011) and the National Nuclear Security Administration (NNSA)/AFNWC Memorandum of Understanding (dated June 28, 2012), AFNWC/NDB (Eglin) is responsible for the development, acquisition, and delivery of a guided TKA and AFNWC/NTW (Kirtland) is responsible for All Up Round technical integration, system qualification, Operational Safety, Suitability, and Effectiveness and fielding of the B61-12 variant.

The DOE/NNSA is responsible for the B61-12 Bomb Assembly and all aspects of the nuclear warhead, including design, manufacture, and portions of sustainment. Funding of these activities will be shared between the DoD and DOE.

Executive Summary

Program Highlights Since Last Report

November 2012, in conjunction with the Milestone (MS) B decision, certification was made pursuant to section 2366b of title 10, United States Code. Based on program maturity, the B61 Mod 12 Life Extension Program Tailkit Assembly (B61 Mod 12 LEP TKA) was deemed ready to enter the EMD phase; however, the USD(AT&L) waived four of the 2366b provisions. In July 2014, the program satisfied two of the four waived provisions, (a)(1)(B) and (a)(1)(D) (now (a)(3)(B) and (a)(3)(D), respectively), on the basis that the program was fully funded in the FYDP associated with the FY 2015 PB. In November 2014, the program satisfied the requirement for provision, (a)(2) (now (a)(1)) following completion of the Preliminary Design Review (PDR) and post-PDR assessment (the program demonstrated a high likelihood of accomplishing its intended mission). Based on the maturity of the required technology, USD(AT&L) determined that a Technology Readiness Assessment for the B61 Mod 12 LEP TKA is not needed; however, the Assistant Secretary of Defense for Research and Engineering will conduct an independent review and assessment to satisfy the certification requirement for the fourth waived provision, (a)(3)(D) (now (a)(2)). This review will be based upon test data from a guided test flight in a relevant environment (with nuclear exposed hardware including Inertial Measurement Unit (IMU) 3.5)). The Department will continue to review the B61 Mod 12 LEP TKA program at least annually until this last certification component is satisfied.

- The ADM authorizing the purchase of long lead items and life of type buy components prior to the B61 Mod 12 LEP TKA Program's entry into Milestone C was approved in January 2017. The Milestone B ADM LRIP approved quantity was 250. The January 2017 ADM added an additional 30 Tailkits for a total of 280 TKAs prior to FRP.

- The program received Above Threshold Reprogramming of 3011 funds for long lead items and life of type buy components in April 2017.

- Successfully completed B-2 Explosive Atmosphere testing which satisfied aircraft safety requirements for flight testing and qualified the TKA for its explosive atmosphere requirements.

- Boeing delivered a Fly-Out Model (FOM) compatible with the Combat Weapons Delivery Software (CWDS), Common Component to the Joint Mission Planning System (JMPS) in April 2017. This was the final TKA deliverable required to resolve the JMPS mitigation efforts.

- The final F-16 & F-15E Separation Test Vehicle (STV) events were successfully conducted in March & June 2017 respectively (completes all STV events for the TKA program).

- Guided Test Vehicle (GTV) 7 was successfully conducted July 2017; supported closure of the final Milestone B exit criteria for EMD1 by satisfying the TRL waiver with the introduction of Operational Flight Program (OFP) 4.1 and radiation aged v3.5 IMU hardware.

- The first B-2 release was conducted July 2017 from Edwards AFB. The test significantly reduced the risk in B-2/B61-12 integration and allows the B-2 team to focus on PD6.7.1, which contains all the B61-12 required functionality (mostly transitioning from PD6.7's surrogate Launch Acceptability Region (LAR) to the actual LAR). Also, this is the first System 2 drop with the V2 FB2 front end.

- EMD 1 contract completed October 2017.

- The TKA program began Government Developmental Testing (DT) on August 1, 2017, three days ahead of an aggressive but executable schedule. The program has successfully completed ~43% (15 of 35) B61-12 weapon releases as of 21 February 2018.

- The Program is unable to begin procurement of long lead items and trainers without the approval of a Continuing Resolution (CR) anomaly request or the passage of the FY 2018 budget (both the Authorization and Appropriation). Without approval of the program's CR anomaly request or passage of the FY18 Budget, the program will not have the hardware

required for INSI & first production delivery requirements to NNSA. This could potentially delay IOC.

- There are no significant software-related issues with this program at this time.

History of Significant Developments Since Program Initiation

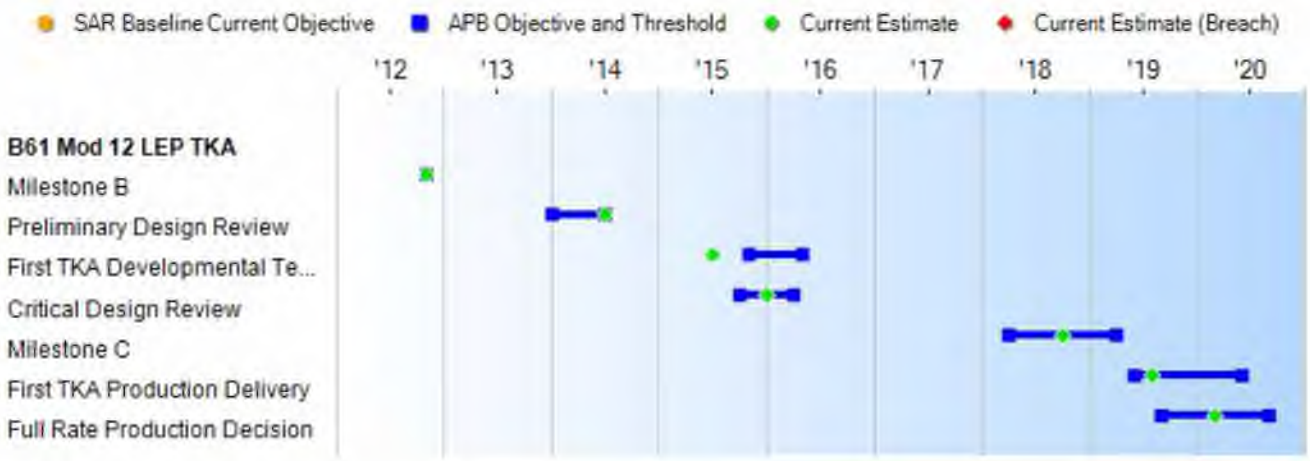
History of Significant Developments Since Program Initiation	
Date	**Significant Development Description**
November 2012	Engineering Manufacturing Development Phase 1 contract.
November 2012	Entered into Milestone (MS) B.
July 2014	Preliminary Design Review.
January 2016	Critical Design Review.
May 2016	The program conducted the B61-12 Preliminary Design Review and Acceptance Group (PDRAAG).
July 2017	Completed GTV 7 (supporting MS B Waiver against relevant environment)
August 2017	Started Developmental Testing (DT)

Threshold Breaches

APB Breaches		
Schedule		☐
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Schedule



Schedule Events				
Events	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate
Milestone B	Nov 2012	Nov 2012	Nov 2012	Nov 2012
Preliminary Design Review	Jan 2014	Jan 2014	Jul 2014	Jul 2014
First TKA Developmental Test Flight	Nov 2015	Nov 2015	May 2016	Jul 2015
Critical Design Review	Oct 2015	Oct 2015	Apr 2016	Jan 2016
Milestone C	Apr 2018	Apr 2018	Apr 2019	Oct 2018
First TKA Production Delivery	Jun 2019	Jun 2019	Jun 2020	Aug 2019
Full Rate Production Decision	Sep 2019	Sep 2019	Sep 2020	Mar 2020

Change Explanations

None

Notes

Risks associated with parallel development activities being conducted by the DoD and the DOE drive threshold dates that are one year beyond objective dates for Milestone C, First TKA Production Delivery, and FRP Decision.

Delivery of the first production unit (First TKA Production Delivery) is used as a surrogate for IOC; DOE is responsible for production integration of the Bomb Assembly with the TKA and subsequent AUR deliveries to the field for IOC.

Acronyms and Abbreviations

AUR - All Up Round
CDR - Critical Design Review
DOE - Department of Energy
GTV - Guided Test Vehicle
PDR - Preliminary Design Review
TKA - Tailkit Assembly

Performance

Performance Characteristics				
SAR Baseline Development Estimate	**Current APB Development Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**
Aircraft Integration (KPP)				
B61-12 TKA, when mated to the B61-12 BA, must be integrated on the F-35A and LRS-B for System 2 guided delivery; F-16C/D (Blk 40-52), F-16 MLU, and PA-200 for System 1 ballistic delivery.	B61-12 TKA, when mated to the B61-12 BA, must be integrated on the F-35A and LRS-B for System 2 guided delivery; F-16C/D (Blk 40-52), F-16 MLU, and PA-200 for System 1 ballistic delivery.	B61-12 TKA, when mated to the B61-12 BA, must be integrated on B-2A and F-15E aircraft for System 2 guided delivery.	TBD	B61-12 TKA, when mated to the B61-12 BA, must be integrated on the B-2A, F-15E, F-35A and LRS-B for System 2 guided delivery; F-16C/D (Blk 40-52), F-16 MLU, and PA-200 for System 1 ballistic delivery.
WS3 Vault Compatibility (KPP)				
B61-12 TKA, while mated to the B61-12 BA, must permit the storage of four (4) B61-12 AURs in a single WS3 vault.	B61-12 TKA, while mated to the B61-12 BA, must permit the storage of four (4) B61-12 AURs in a single WS3 vault.	B61-12 TKA, while mated to the B61-12 BA, must permit the storage of four (4) B61-12 AURs in a single WS3 vault.	The program demonstrated the KPP Objective, "B61-12 TKA, while mated to the B61-12 BA, must permit the storage of four (4) B61-12 AURs in a single WS3 vault." The program verified this utilizing fit checks conducted at Sheppard AFB, TX on April 9, 2013.	B61-12 TKA, while mated to the B61-12 BA, must permit the storage of four (4) B61-12 AURs in a single WS3 vault.
HEMP Survivability (KSA)				
B61 TKA achieves the accuracy KPP after exposure to the HEMP environment.	B61 TKA achieves the accuracy KPP after exposure to the HEMP environment.	B61 TKA achieves the accuracy KPP after exposure to the HEMP environment.	TBD	B61 TKA achieves the accuracy KPP after exposure to the HEMP environment.

Classified Performance information is provided in the classified annex to this submission.

Requirements Reference

CDD dated September 20, 2012

Change Explanations

None

Acronyms and Abbreviations

AFB - Air Force Base
AUR - All Up Round
BA - Bomb Assembly
HEMP - High Altitude Electro-Magnetic Pulse
KSA - Key System Attribute
LRS-B - Long Range Strike-Bomber
MLU - Mid-Life Upgrade
TKA - Tailkit Assembly
WS3 - Weapon Storage and Security System

Track to Budget

RDT&E

Appn	BA	PE
Air Force	3600	05	0101125F

Project	Name
657007	B61 LEP

Procurement

Appn	BA	PE
Air Force	3011	01	0101125F

Line Item	Name
354040	B61

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2012 $M			BY 2012 $M	TY $M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	1007.6	1007.6	1108.4	784.7	1090.7	1090.7	840.0
Procurement	314.0	314.0	345.4	340.4	361.1	361.1	394.2
Flyaway	--	--	--	340.4	--	--	394.2
Recurring	--	--	--	340.4	--	--	394.2
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	0.0	--	--	0.0
Other Support	--	--	--	0.0	--	--	0.0
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	0.0	0.0	--	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	1321.6	1321.6	N/A	1125.1	1451.8	1451.8	1234.2

Cost Notes

In accordance with Section 842 of the National Defense Authorization Act for FY 2017, which amended title 10 U.S.C. § 2334, the Director of Cost Assessment and Program Evaluation, and the Secretary of the military department concerned or the head of the Defense Agency concerned, must issue guidance requiring a discussion of risk, the potential impacts of risk on program costs, and approaches to mitigate risk in cost estimates for MDAPs and major subprograms. The information required by the guidance is to be reported in each SAR. This guidance is not yet available; therefore, the information on cost risk is not contained in this SAR.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	77	77	77
Procurement	813	813	813
Total	890	890	890

Quantity Notes

Change in quantity profile aligned to the January 13, 2017 ADM. (The Milestone B ADM LRIP approved quantity was 250. The January 2017 ADM added an additional 30 Tailkits for a total of 280 TKAs prior to FRP.)

Cost and Funding

Funding Summary

Appropriation Summary FY 2019 President's Budget / December 2017 SAR (TY$ M)									
Appropriation	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
RDT&E	620.7	91.2	91.9	36.2	0.0	0.0	0.0	0.0	840.0
Procurement	15.1	88.3	162.0	110.1	18.7	0.0	0.0	0.0	394.2
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2019 Total	635.8	179.5	253.9	146.3	18.7	0.0	0.0	0.0	1234.2
PB 2018 Total	627.6	179.5	230.7	200.5	18.9	0.0	0.0	0.0	1257.2
Delta	8.2	0.0	23.2	-54.2	-0.2	0.0	0.0	0.0	-23.0

Quantity Summary FY 2019 President's Budget / December 2017 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	To Complete	Total
Development	77	0	0	0	0	0	0	0	0	77
Production	0	0	30	250	533	0	0	0	0	813
PB 2019 Total	77	0	30	250	533	0	0	0	0	890
PB 2018 Total	77	0	30	250	533	0	0	0	0	890
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding 3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2012	--	--	--	--	--	--	81.6
2013	--	--	--	--	--	--	62.4
2014	--	--	--	--	--	--	33.0
2015	--	--	--	--	--	--	108.3
2016	--	--	--	--	--	--	204.3
2017	--	--	--	--	--	--	131.1
2018	--	--	--	--	--	--	91.2
2019	--	--	--	--	--	--	91.9
2020	--	--	--	--	--	--	36.2
Subtotal	77	--	--	--	--	--	840.0

Annual Funding 3600 | RDT&E | Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 2012 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2012	--	--	--	--	--	--	80.8
2013	--	--	--	--	--	--	60.8
2014	--	--	--	--	--	--	31.7
2015	--	--	--	--	--	--	103.0
2016	--	--	--	--	--	--	191.6
2017	--	--	--	--	--	--	120.8
2018	--	--	--	--	--	--	82.6
2019	--	--	--	--	--	--	81.8
2020	--	--	--	--	--	--	31.6
Subtotal	77	--	--	--	--	--	784.7

Annual Funding 3011 | Procurement | Procurement of Ammunition, Air Force							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2016	--	--	15.1	--	15.1	--	15.1
2017	--	--	--	--	--	--	--
2018	30	88.3	--	--	88.3	--	88.3
2019	250	162.0	--	--	162.0	--	162.0
2020	533	110.1	--	--	110.1	--	110.1
2021	--	--	18.7	--	18.7	--	18.7
Subtotal	813	360.4	33.8	--	394.2	--	394.2

Annual Funding 3011 | Procurement | Procurement of Ammunition, Air Force							
Fiscal Year	Quantity	BY 2012 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2016	--	--	13.8	--	13.8	--	13.8
2017	--	--	--	--	--	--	--
2018	30	77.8	--	--	77.8	--	77.8
2019	250	140.0	--	--	140.0	--	140.0
2020	533	93.3	--	--	93.3	--	93.3
2021	--	--	15.5	--	15.5	--	15.5
Subtotal	813	311.1	29.3	--	340.4	--	340.4

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	11/19/2012	1/13/2017
Approved Quantity	250	280
Reference	Milestone B ADM	Advanced Procurement ADM
Start Year	2018	2018
End Year	2020	2020

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the low production run and the need to sychronize DoD deliveries with the Department of Energy B61-12 Bomb Assembly program.

Foreign Military Sales

None

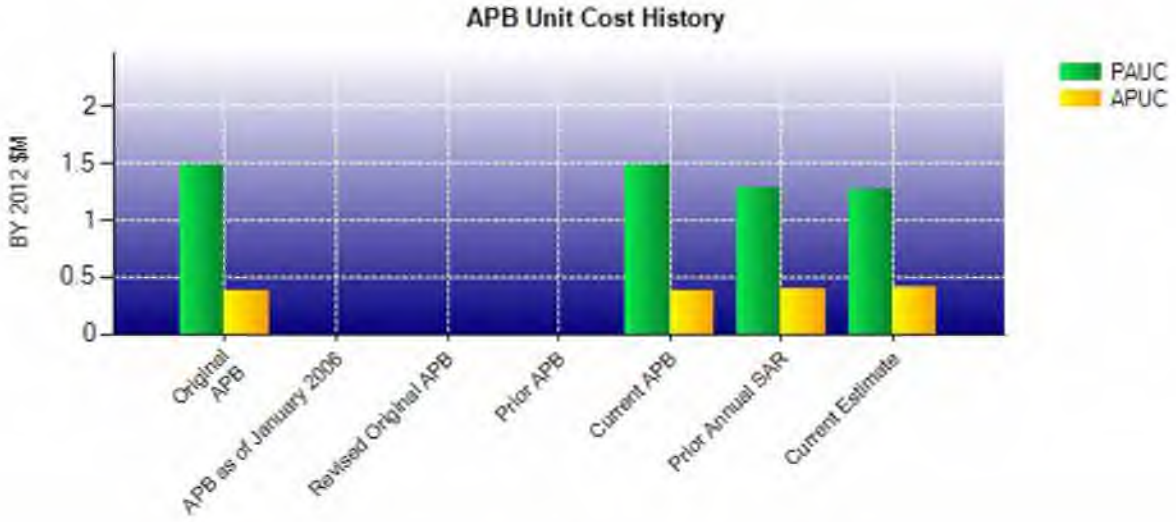
Nuclear Costs

Nuclear costs related to the B61-12 TKA program are captured in the Department of Energy Bomb Assembly SAR.

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2012 $M Current UCR Baseline (Dec 2012 APB)	BY 2012 $M Current Estimate (Dec 2017 SAR)	% Change
Program Acquisition Unit Cost			
Cost	1321.6	1125.1	
Quantity	890	890	
Unit Cost	1.485	1.264	-14.88
Average Procurement Unit Cost			
Cost	314.0	340.4	
Quantity	813	813	
Unit Cost	0.386	0.419	+8.55

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2012 $M Original UCR Baseline (Dec 2012 APB)	BY 2012 $M Current Estimate (Dec 2017 SAR)	% Change
Program Acquisition Unit Cost			
Cost	1321.6	1125.1	
Quantity	890	890	
Unit Cost	1.485	1.264	-14.88
Average Procurement Unit Cost			
Cost	314.0	340.4	
Quantity	813	813	
Unit Cost	0.386	0.419	+8.55



APB Unit Cost History					
Item	Date	BY 2012 $M		TY $M	
		PAUC	APUC	PAUC	APUC
Original APB	Dec 2012	1.485	0.386	1.631	0.444
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	N/A	N/A	N/A	N/A	N/A
Current APB	Dec 2012	1.485	0.386	1.631	0.444
Prior Annual SAR	Dec 2016	1.280	0.400	1.413	0.469
Current Estimate	Dec 2017	1.264	0.419	1.387	0.485

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)									
PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
1.631	-0.016	0.000	-0.077	0.000	-0.151	0.000	0.000	-0.244	1.387

Current SAR Baseline to Current Estimate (TY $M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.444	0.000	0.000	0.000	0.000	0.041	0.000	0.000	0.041	0.485

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone A	N/A	N/A	N/A	N/A
Milestone B	N/A	Nov 2012	N/A	Nov 2012
Milestone C	N/A	Apr 2018	N/A	Oct 2018
IOC	N/A	N/A	N/A	N/A
Total Cost (TY $M)	N/A	1451.8	N/A	1234.2
Total Quantity	N/A	890	N/A	890
PAUC	N/A	1.631	N/A	1.387

First Tailkit Assembly (TKA) Production Delivery is used as a surrogate for IOC; the Department of Energy is responsible for production integration of the Bomb Assembly/TKA and subsequent All Up Round deliveries to the field for IOC.

Cost Variance

Summary TY $M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	1090.7	361.1	--	1451.8
Previous Changes				
Economic	-11.6	+2.9	--	-8.7
Quantity	--	--	--	--
Schedule	-68.4	--	--	-68.4
Engineering	--	--	--	--
Estimating	-134.9	+17.4	--	-117.5
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-214.9	+20.3	--	-194.6
Current Changes				
Economic	-2.3	-3.2	--	-5.5
Quantity	--	--	--	--
Schedule	--	+0.2	--	+0.2
Engineering	--	--	--	--
Estimating	-33.5	+15.8	--	-17.7
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-35.8	+12.8	--	-23.0
Total Changes	-250.7	+33.1	--	-217.6
CE - Cost Variance	840.0	394.2	--	1234.2
CE - Cost & Funding	840.0	394.2	--	1234.2

Summary BY 2012 $M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Development Estimate)	1007.6	314.0	--	1321.6
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	-62.9	--	--	-62.9
Engineering	--	--	--	--
Estimating	-130.0	+10.9	--	-119.1
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-192.9	+10.9	--	-182.0
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+1.0	--	+1.0
Engineering	--	--	--	--
Estimating	-30.0	+14.5	--	-15.5
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-30.0	+15.5	--	-14.5
Total Changes	-222.9	+26.4	--	-196.5
CE - Cost Variance	784.7	340.4	--	1125.1
CE - Cost & Funding	784.7	340.4	--	1125.1

Previous Estimate: December 2016

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-2.3
Realignment of FY 2017 funding to LRSO for urgent test support requirement. (Estimating)	-1.8	-2.0
Revised estimate due to FY 2017 reduction for Small Business Innovation Research. (Estimating)	-4.5	-4.8
Revised estimate funding realigned to B-2 A/C Integration to support the Radar Aided Targeting System. (Estimating)	-38.0	-42.7
Revised estimate to support three additional Joint Test Assembly assets for Global Strike Command. (Estimating)	+13.3	+14.9
Adjustment for current and prior escalation. (Estimating)	+1.0	+1.1
RDT&E Subtotal	-30.0	-35.8

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-3.2
Revised estimate in FY 2016 to support all-up-round trainers. (Estimating)	+13.9	+15.1
Additional Schedule variance due to re-phased funding from FY 2020 to FY 2019 to support Advance Procurement for Lot 2. (Schedule)	+1.0	+0.2
Adjustment for current and prior escalation. (Estimating)	+0.6	+0.7
Procurement Subtotal	+15.5	+12.8

Contracts

Contract Identification

Appropriation: RDT&E
Contract Name: B61-12 TKA EMD Phase 1
Contractor: Boeing
Contractor Location: 2600 N 3rd Street
St. Charles, MO 63301
Contract Number: FA2103-13-C-0006
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: November 27, 2012
Definitization Date: November 27, 2012

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
178.6	N/A	N/A	196.6	N/A	N/A	194.4	197.7

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to additional modifications post initial contract award.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (10/31/2017)	-7.6	0.0
Previous Cumulative Variances	-7.4	-1.0
Net Change	-0.2	+1.0

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to increases experienced in the areas of: Actuators, Mission Computer, and Program Management.

The favorable net change in the schedule variance is due to contract closeout.

Notes

EMD 1 contract completed as of October 2017; cost and schedule variances are as of October 31, 2017. Boeing declared an Over Target Schedule (OTS) for EMD Phase 1 in October 2015. An Integrated Baseline Review was completed and all action items were closed out in April 2016. The EMD Phase 1 Performance Measurement Baseline was rebaselined as a result of the OTS.

This contract is more than 90% complete; therefore, this is the final report for this contract.

Contract Identification

Appropriation: RDT&E
Contract Name: B61-12 TKA EMD Phase 2
Contractor: Boeing
Contractor Location: Boeing Defense, Space and Security - Weapons and Missile
St. Charles, MO 63301
Contract Number: FA2103-16-C-0061
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: December 17, 2015
Definitization Date: December 17, 2015

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
99.7	N/A	0	122.8	N/A	N/A	131.0	130.6

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to additional scope added to the contract.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/21/2017)	+2.5	-3.2
Previous Cumulative Variances	+1.6	-1.7
Net Change	+0.9	-1.5

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to efficiencies experienced in the areas of: Developmental Test and Evaluation, Launch System Integration, Assembly, Test, and Checkout, Nuclear Certification, Radiation testing, and Actuators.

The unfavorable net change in the schedule variance is due to increases associated with: Actuators, Environmental testing, Inertial Measurement Unit, Housing and Chassis, and Mission Computer.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	0	0	77	0.00%
Production	0	0	813	0.00%
Total Program Quantity Delivered	0	0	890	0.00%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	1234.2	Years Appropriated	7
Expended to Date	520.9	Percent Years Appropriated	70.00%
Percent Expended	42.21%	Appropriated to Date	815.3
Total Funding Years	10	Percent Appropriated	66.06%

The above data is current as of February 12, 2018.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	October 19, 2012
Source of Estimate:	SCP
Quantity to Sustain:	824
Unit of Measure:	Tailkit Assembly (TKA)
Service Life per Unit:	20.00 Years
Fiscal Years in Service:	FY 2019 - FY 2040

- Unit of Measure = Tailkit Assembly (TKA)
- Total Quantity = 824
  -- Production quantity: 813
  -- Development Trainers: 11
- 77 test assets in RDT&E are expended; not sustained. The 11 development trainers are not included in this number.
- Estimate assumes wooden round -- Production Lifetime Sparing Concept
- Contractor services retained for failure analysis, test support, logistical support, destructive testing, etc.
- Projected contractor labor rates are through FY 2040
  -- Used 4% increase in base pay rate to account for differences in contractor inflation versus OSD published inflation
- Continental United States (CONUS) shipping costs for Weapon System Evaluation Program assets paid by the Department of Energy
- Personnel Outside of the CONUS locations exist solely to support this weapon

Sustainment Strategy

B61-12 TKA Sustainment Strategy is based on system reliability requirements/projections. Planned Material Availability is sustained through a 20-year service life spares buy that is included in the TKA production quantities. Air Force Materiel Command (AFMC) has determined no organic depot level repair requirements at this time. Organizational/Intermediate level maintenance is limited to replacement, inspection, disassembly/reassembly of TKA from All Up Round (B61-12 All Up Round). A TKA Business Case Analysis (BCA) was conducted in 2016 to evaluate cost effectiveness of selecting an optional warranty, organic, or Contractor Logistics Support (CLS) based on final reliability projections, test set design, support equipment, and engineering requirements. The results and recommendations of this analysis will be reflected in the next Life Cycle Sustainment Plan (LCSP) at MS C.

Antecedent Information

No Antecedent

Annual O&S Costs BY2012 $M		
Cost Element	**B61 Mod 12 LEP TKA Average Annual Cost Per Tailkit Assembly (TKA)**	**No Antecedent (Antecedent)**
Unit-Level Manpower	0.069	--
Unit Operations	0.001	--
Maintenance	0.005	--
Sustaining Support	0.015	--
Continuing System Improvements	0.000	--
Indirect Support	0.042	--
Other	0.000	--
Total	0.132	--

Item	Total O&S Cost $M			
	B61 Mod 12 LEP TKA			No Antecedent (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	2283.3	2511.6	2283.3	N/A
Then Year	2887.3	N/A	2887.3	0.0

Equation to Translate Annual Cost to Total Cost

Average Annual Unitized Cost = (Total O&S Cost/Quantity)/(Service Life plus trainer lead-in time) = ($2283.3M/824)/(20+1)=$0.132M/TKA/year

O&S Cost Variance		
Category	**BY 2012 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2016 SAR	2283.3	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	0.0	
Current Estimate	2283.3	

Disposal Estimate Details

Date of Estimate: October 19, 2012

Source of Estimate: SCP

Disposal/Demilitarization Total Cost (BY 2012 $M): Total costs for disposal of all Tailkit Assembly (TKA) are 0.1

$0.190M in TY dollars