

UNCLASSIFIED



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-439



Small Diameter Bomb Increment II (SDB II)

As of FY 2019 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

UNCLASSIFIED

Table of Contents

Sensitivity Originator	3
Common Acronyms and Abbreviations for MDAP Programs	4
Program Information	6
Responsible Office	6
References	7
Mission and Description	8
Executive Summary	9
Threshold Breaches	12
Schedule	13
Performance	15
Track to Budget	22
Cost and Funding	23
Low Rate Initial Production	36
Foreign Military Sales	37
Nuclear Costs	37
Unit Cost	38
Cost Variance	41
Contracts	44
Deliveries and Expenditures	47
Operating and Support Cost	48

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

Small Diameter Bomb Increment II (SDB II)

DoD Component

Air Force

Joint Participants

Department of the Navy

Responsible Office

Col Kevin Hickman
102 West D Ave
Eglin Air Force Base, FL 32542

kevin.hickman@us.af.mil

Phone: 850-883-2881

Fax: 850-882-2438

DSN Phone: 875-2881

DSN Fax: 872-2438

Date Assigned: June 16, 2014

References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated September 23, 2015

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated September 23, 2015

Mission and Description

Small Diameter Bomb Increment II (SDB II) is a joint interest Air Force (AF) and Navy ACAT IC program, with the AF as the lead service. SDB II provides the warfighter the capability to attack mobile targets from stand-off, through adverse weather. The threshold aircraft for the AF is the F-15E and the threshold aircraft for the Navy are the F-35B and F-35C. Objective aircraft include the F-16, F/A-18E/F, F-22A, F-35A, B-1B, B-2, B-52, A-10, MQ-9, and AC-130. SDB II will be compatible with the BRU-61 (Bomb Rack Unit) miniature munitions carriage, the CNU-660/E carriage system, the Common Munitions Bit and Reprogramming Equipment and the Joint Mission Planning System. The SDB II program will develop and field a single-weapon AF storage container and a dual Navy weapon storage container.

Executive Summary

Program Highlights Since Last Report

Executive Summary:

Schedule risk continues to increase on timing of Initial Operational Test and Evaluation (IOT&E) and F-15E Required Assets Available (RAA) due to delays in the completion of Government Confidence Testing (GCT). F-15E RAA is projected for the threshold date of January 2019. The final GCT flights and IOT&E will utilize Operational Flight Program (OFP) Software Maintenance Build (SWM) 3. SWM 3 was released January 12, 2018 and received flight clearance February 20, 2018. The final GCT flights have been submitted for scheduling March 2018.

In January 2017, the program exercised the 312-unit LRIP Lot 3 contract option for \$62.5M.

In February 2017, SWM 1 was released. Cueing missions were performed to gather data before restart of developmental flight test May 2017. Captive Carry Reliability Testing resumed.

In March 2017, SWM 1 was cleared for flight testing. The program was notified in December 2016 that Dow, the primary vendor for dome blanks, was closing their facility March 2017. Raytheon Missile Systems (RMS) procured dome blanks sufficient to complete Lot 5 production. Parallel efforts are underway to either establish a new dome supplier or restart production with the incumbent company. The Air Turbine Alternator (ATA) 2.0 started Design Verification Testing in preparation for Critical Design Review May 2017.

In April 2017, RMS produced the first LRIP Lot 1 All-up-Round (AUR) asset.

In May 2017, GCT resumed with three successful releases (GCT (Vehicle) V-2/11/12) of four over White Sands Missile Range against static tracked target surrogates in a high clutter environment. GCTV-3 missed its intended target because the weapon did not enter the Link 16 network precluding in-flight updates from the third-party controller (F-15E Wingman).

In June 2017, USD (AT&L) delegated MDA to the Secretary of the Air Force. RMS delivered the first 40 LRIP Lot 1 AURs. GCTV-25 missed its intended target against a static tracked target in a tree line. Analysis showed a limitation against stationary targets which has been addressed in SWM 3.

In July 2017, GCTV-21 and 27 successfully demonstrated release using U.S. Marine Corps Joint Terminal Attack Controller (JTAC) kits to provide in flight updates. RMS completed build of 50 additional LRIP Lot 1 AURs but delivery was delayed to assess impacts of issued parts bulletins on ITT Industries, Inc. (ITT) connectors and additional inspection of weapons to ensure warhead aft retaining rings were properly torqued during assembly. The first and second increments of Special Defense Acquisition Funds (SDAF) for exportability were released to the program office.

In August 2017, GCTV-28 successfully demonstrated release using over the shoulder launch capability. GCTV-22/26 successfully demonstrated retarget capability using a U.S. Air Force JTAC kit and complex target maneuvers. SWM 2 was released and submitted for flight clearance. ITT connector parts bulletins have been resolved with no impact to the program.

In September 2017, the Government took delivery of 50 LRIP Lot 1 AURs after resolution of the torque retaining ring concern. Integrated Engineering Change Proposal (iECP) Delivery Order (DO) 1, Crypto Modernization effort was awarded for \$46.5M as part of a \$450M (ceiling) Indefinite Delivery Indefinite Quantity (IDIQ) contract effort.

In October 2017, SWM 2 was cleared for flight testing and Laser Illuminated Attack (LIA)-2a successfully executed utilizing the SWM 2 software OFP. LIA-2a demonstrated LIA mode engagement against a moving target. Modified ATA 2.0 Group A and Group B qualifications were completed.

In November 2017, the first GCT ripple release missions, GCTV-19/20, were successfully demonstrated. ATA Group A and Group B delta qualification reports were finalized and released. The program office submitted ATA 2.0 Letter Data

Packages to Air Force System Safety and the Navy Fuze and Initiation System Technical Review Panel for review and concurrence.

In December 2017, GCTV-5/6 were executed with GCTV-6 successfully demonstrating the F/A-18E/F taking control of the weapon post release. GCTV-5 received erroneous target updates and performed nominally but did not impact the intended target. The F/A-18E/F was using a Forward Looking Infrared Radar (FLIR) pod and maneuvering to avoid clouds. During GCTV-5, the FLIR gimbaled out and lost target track ~20 seconds before impact and sent erroneous target updates to the weapon.

In January 2018, the last set of GCT ripple release missions, GCTV-17/18, were successfully demonstrated. iECP DO 2, M-Code GPS and Enhanced Anti-jam development, was awarded for \$101.5M as part of a \$450M (ceiling) IDIQ contract effort. Live Fire-10a, the first LIA mission with a live warhead, was successfully executed against a moving target.

Captive Carry Reliability Testing has flown 1,319 hours to date.

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
July 2009	JROC approved the SDB II CDD.
August 2010	DAE signed an ADM authorizing the program to enter the EMD phase and certified the program pursuant to section 2366b of title 10, U.S. Code.
October 2010	DAE signed the Milestone (MS) B APB.
January 2011	Conducted the Critical Design Review (CDR). The Office of the Deputy Assistant Secretary of Defense for Systems Engineering concluded that the CDR is complete and the SDB II Program is "well situated to continue into the System Capability and Manufacturing Process Demonstration Phase."
July 2012	First Guided Test Vehicle (GTV)-1 flight test.
November 2014	First Live Fire test.
December 2014	Test, Analyze and Fix (TAAF) testing complete, culminating over 18 months of testing that totaled 2,190 hours. TAAF demonstrated a reliability of 253 hours Mean Time Between Failure which surpassed the 250 hour requirement.
January 2015	JROC approved use of SDB II CDD in lieu of CPD for production Milestone C. They also formally added the AC-130 as an objective aircraft.
April 2015	Systems Verification Review.
June 2015	DAE signed the Milestone C ADM authorizing entrance into LRIP.
June 2015	Lot 1 Production contract award for the first 144 weapons.
September 2015	DAE signed the Milestone C APB. The APB included updated F-15E Required Asset Available dates to account for previous program delays and to allow sufficient time for the remaining Developmental Testing and the upcoming Operational Testing.

Threshold Breaches

APB Breaches

Schedule		<input type="checkbox"/>
Performance		<input type="checkbox"/>
Cost	RDT&E	<input type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
O&S Cost		<input type="checkbox"/>
Unit Cost	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

Nunn-McCurdy Breaches

Current UCR Baseline

PAUC	None
APUC	None

Original UCR Baseline

PAUC	None
APUC	None

Schedule



Schedule Events				
Events	SAR Baseline Production Estimate	Current APB Production Objective/Threshold	Current Estimate	Current Estimate
Milestone B Approval	Aug 2010	Aug 2010	Aug 2010	Jul 2010
Milestone C Approval	May 2015	May 2015	May 2015	May 2015
RAA for SDB II-Threshold Aircraft F-15E	Jan 2018	Jan 2018	Jan 2019	Jan 2019
F-35B Initial Fielding	Jan 2022	Jan 2022	Jan 2023	Sep 2022
F-35C Initial Fielding	Jan 2022	Jan 2022	Jan 2023	Sep 2022
Full Rate Production	Apr 2022	Apr 2022	Apr 2023	Sep 2022

Change Explanations

None

Notes

RAA for SDB II Threshold Aircraft F-15E is defined as the capability to arm twelve F-15Es with two fully-loaded BRU-61 carriage systems for 1.5 sorties, which equates to 144 weapons. RAA includes associated spares, support equipment (including load crew trainers), initial training, mission planning capability, and verified technical orders. The ACC Commander, or applicable Major Command Commander (if first operational unit is not within ACC) will declare IOC for the Air Force at the first designated SDB II capable wing based on the wing or group commander's recommendations. The weapon configuration delivered to meet the F-15E RAA will include fully qualified hardware functionality for all required employment modes.

RAA for SDB II Threshold Aircraft F-15E is one year beyond the objective date due to the fluidity of the GCT schedule and the magnitude of OT which remains to be completed.

The threshold dates for FRP, F-35B Initial Fielding, and F-35C Initial Fielding are one year beyond the objective dates due to the fluidity of the F-35 program schedule.

In FY 2013, the Navy adjusted the platform integration strategy by inclusion of F/A-18E/F to deliver the multi-mode moving

target capability to the warfighter ahead of the F-35. This strategy was approved and supported by OSD. The first Navy unit equipped will be an F/A-18E/F squadron aircraft. The quantity of SDB II weapons required for Navy Initial Fielding is 90 weapons.

Acronyms and Abbreviations

ACC - Air Combat Command
BRU - Bomb Rack Units
GCT - Government Confidence Testing
OT - Operational Test
RAA - Required Assets Available

Performance

Performance Characteristics				
SAR Baseline Production Estimate	Current APB Production Objective/Threshold	Demonstrated Performance	Current Estimate	
Scenario Weapon Effectiveness (WE)				
Given SDB II weapon delivery from an objective platform employing self targeting or an SDB II weapon delivery from a threshold or objective aircraft with third party targeting via an objective airborne platform (Paragraph 6.2.3.1.2 of CDD for SDB II dated July 28, 2009), the SDB II weapon will achieve a minimum PSSK of (OB-1) when averaged over all the target types contained in Table 6-1 of CDD for SDB II dated July 28, 2009. The Joint JROC reviewed the CDD in lieu of the CPD on November 18, 2014; the JROC subsequently signed the memorandum on January 13, 2015.	Given SDB II weapon delivery from an objective platform employing self targeting or an SDB II weapon delivery from a threshold or objective aircraft with third party targeting via an objective airborne platform (Paragraph 6.2.3.1.2 of CDD for SDB II dated July 28, 2009), the SDB II weapon will achieve a minimum PSSK of (OB-1) when averaged over all the target types contained in Table 6-1 of CDD for SDB II dated July 28, 2009. The Joint JROC reviewed the CDD in lieu of the CPD on November 18, 2014; the JROC subsequently signed the memorandum on January 13, 2015.	Given SDB II weapon delivery from a threshold aircraft employing self targeting or a threshold aircraft delivering SDB II with third party targeting via a JTAC, the SDB II weapon will achieve a minimum PSSK of (T-1) when averaged over all the target types contained in Table 6-1 of CDD for SDB II dated July 28, 2009. The JROC reviewed the CDD in lieu of the CPD on November 18, 2014; the JROC subsequently signed the memorandum on January 13, 2015.	Demonstrated Performance data will be collected and displayed when SDB II enters OT.	Given SDB II weapon delivery from a threshold aircraft employing self-targeting or a threshold aircraft delivering SDB II with third party targeting via a JTAC, the SDB II weapon will achieve a minimum PSSK of (T-1) when averaged over all the target types contained in Table 6-1 of CDD for SDB II dated July 28, 2009. 1. The JROC reviewed the CDD in lieu of the CPD on November 18, 2014; the JROC subsequently signed the memorandum on January 13, 2015.
Weapon Loadout				
Four SDB II weapons integrated onto the BRU-61/A. Aircraft will be able to carry and employ both SDB I and II weapons loaded on separate BRU-61/As during the same mission.	Four SDB II weapons integrated onto the BRU-61/A. Aircraft will be able to carry and employ both SDB I and II weapons loaded on separate BRU-61/As during the same mission.	(T=O) Four SDB II weapons integrated onto the BRU-61/A. Aircraft will be able to carry and employ both SDB I and II weapons loaded on separate BRU-61/As during the same mission.	Demonstrated performance data will be collected and displayed when SDB II enters OT.	Four SDB II weapons integrated onto the BRU-61/A. Aircraft will be able to carry and employ both SDB I and SDB II weapons loaded on separate BRU-61/As during the same mission.
Carrier Operability (Navy Unique Requirement)				

SDB II will be compatible with carrier operations without degrading other naval operations. Compatibility includes being capable of at least fifty catapult launches and forty-nine arrested landings; able to be transported, handled, stored, prepared, uploaded, and downloaded; and capable of operating in EMI, EMC, container immersion/washdown, salt fog/salt spray, explosive atmosphere, mechanical shock (i.e., near-miss, catapult launches/arrested landings, and handling shock), acoustic noise, vibration, fluid contamination, corrosive atmosphere, fungus, humidity, ice, and rain environments of aircraft carrier and replenishment ship operations.	SDB II will be compatible with carrier operations without degrading other naval operations. Compatibility includes being capable of at least fifty catapult launches and forty-nine arrested landings; able to be transported, handled, stored, prepared, uploaded, and downloaded; and capable of operating in EMI, EMC, container immersion/washdown, salt fog/salt spray, explosive atmosphere, mechanical shock (i.e., near-miss, catapult launches/arrested landings, and handling shock), acoustic noise, vibration, fluid contamination, corrosive atmosphere, fungus, humidity, ice, and rain environments of aircraft carrier and replenishment ship operations.	(T=O) SDB II will be compatible with carrier operations without degrading other naval operations. Compatibility includes being capable of at least fifty catapult launches and forty-nine arrested landings; able to be transported, handled, stored, prepared, uploaded, and downloaded; and capable of operating in EMI, EMC, container immersion/washdown, salt fog/salt spray, explosive atmosphere, mechanical shock (i.e., near-miss, catapult launches/arrested landings, and handling shock), acoustic noise, vibration, fluid contamination, corrosive atmosphere, fungus, humidity, ice, and rain environments of aircraft carrier and replenishment ship operations.	Demonstrated Performance data will be collected and displayed when SDB II enters F -35C OT.	SDB II will be compatible with carrier operations without degrading other naval operations. Compatibility includes being capable of at least fifty catapult launches and forty-nine arrested landings; able to be transported, handled, stored, prepared, uploaded, and downloaded; and capable of operating in EMI, EMC, container immersion/washdown, salt fog/salt spray, explosive atmosphere, mechanical shock (i.e., near-miss, catapult launches/arrested landings, and handling shock), acoustic noise, vibration, fluid contamination, corrosive atmosphere, fungus, humidity, ice, and rain environments of aircraft carrier and replenishment ship operations.
Materiel Availability				
Once 3,000 SDB II weapons are in the inventory, the Materiel Availability for SDB II will be no less than .95.	Once 3,000 SDB II weapons are in the inventory, the Materiel Availability for SDB II will be no less than .95.	The Materiel Availability for SDB II will follow this graduated scale: Greater than 500 weapons in inventory - no less than .75 Greater than 1,000 weapons in inventory - no less than .80 Greater than	Demonstrated performance data will be collected and displayed when 500 weapons are placed in inventory.	The Materiel Availability for SDB II will follow this graduated scale: Greater than 500 weapons in inventory - no less than .75 Greater than 1000

		3,000 weapons in inventory - no less than .90.		weapons in inventory - no less than .80 Greater than 3000 weapons in inventory - no less than .90.
Net Ready				
<p>I) Support net-centric military operations: A) Mission: Positive weapon control during engagement of mobile (moving and stationary) targets enabled by digital communications as planned and/or event-driven. 1) Measure: Receipt of weapon control directives = less than or equal to 12 seconds (Link 16); Transmission of situation awareness messages = less than or equal to 30 seconds UHF. 2) Conditions: Secure and available communications (DoD Chief Information Officer net-centric attribute). B) Mission Activities: Enable target acquisition; Target tracking. 1) Measure: Link 16 Target location accuracy** = 60 meters TLE90 and UHF** = 100 meters TLE90. 2) Conditions: SWE and WE conditions. II) Enter and be managed in the network: A) Link 16 tactical data link network. 1) Measure: Time to fine synchronization = less than or equal to 60 seconds; Terminal performance = 99% availability; Messaging = MER of less than or equal to 1%. 2) Conditions: Operational network; Type 1</p>	<p>I) Support net-centric military operations: A) Mission: Positive weapon control during engagement of mobile (moving and stationary) targets enabled by digital communications as planned and/or event-driven. 1) Measure: Receipt of weapon control directives = less than or equal to 12 seconds (Link 16); Transmission of situation awareness messages = less than or equal to 30 seconds UHF. 2) Conditions: Secure and available communications (DoD Chief Information Officer net-centric attribute). B) Mission Activities: Enable target acquisition; Target tracking. 1) Measure: Link 16 Target location accuracy** = 60 meters TLE90 and UHF** = 100 meters TLE90. 2) Conditions: SWE and WE conditions. II) Enter and be managed in the network: A) Link 16 tactical data link network. 1) Measure: Time to fine synchronization = less than or equal to 60 seconds; Terminal performance = 99% availability; Messaging = MER of less than or equal to 1%. 2) Conditions: Operational network; Type 1</p>	<p>(T=O) I) Support net-centric military operations: A) Mission: Positive weapon control during engagement of mobile (moving and stationary) targets enabled by digital communications as planned and/or event-driven. 1) Measure: Receipt of weapon control directives = less than or equal to 12 seconds (Link 16); Transmission of situation awareness messages = less than or equal to 30 seconds UHF. 2) Conditions: Secure and available communications (DoD Chief Information Officer net-centric attribute). B) Mission Activities: Enable target acquisition; Target tracking. 1) Measure: Link 16 Target location accuracy** = 60 meters TLE90 and UHF** = 100 meters TLE90. 2) Conditions: SWE and WE conditions. II) Enter and be managed in the network: A) Link 16 tactical data link network. 1) Measure: Time to fine synchronization = less than or equal to 60 seconds; Terminal performance = 99% availability; Messaging = MER of less than or equal to 1%. 2) Conditions: Operational</p>	<p>Demonstrated performance data will be collected and displayed when SDB II enters OT.</p>	<p>I) Support net-centric military operations: A) Mission: Positive weapon control during engagement of mobile (moving and stationary) targets enabled by digital communications as planned and/or event-driven. 1) Measure: Receipt of weapon control directives = less than or equal to 12 seconds (Link 16); Transmission of situation awareness messages = less than or equal to 30 seconds UHF. 2) Conditions: Secure and available communications (DoD Chief Information Officer net-centric attribute). B) Mission Activities: Enable target acquisition; Target tracking. 1) Measure: Link 16 Target location accuracy = 60 meters TLE90 and UHF = 100 meters TLE90. 2) Conditions: SWE and WE conditions. II) Enter</p>

encryption; Spectrum availability. B) Line-of-sight UHF tactical data link network. 1) Measure: Time to fine synchronization = less than or equal to 60 seconds; Terminal Performance = 99% availability; Messaging = MER less than or equal to 1%. 2) Conditions: Operational network; Type 1 encryption; spectrum availability. III) Exchange Information: A) Link 16 weapon control: 1) Measure: Periodicity*** = less than or equal to 12 seconds; Timeliness**** = less than or equal to 3 seconds; Throughput***** = 53.76 kilobits per second; Size***** = 0.56 kilobits. 2) Conditions: Operational network; Type I encryption; Required spectrum is available. B) UHF weapon control JTAC2: 1) Measure: Periodicity***** = less than or equal to 30 seconds; Timeliness***** = less than or equal to 6 seconds; Throughput***** = 16 kilobits per second; Size***** = 1.12 kilobits. 2) Conditions: Operational network; Type I encryption; Required spectrum is available. C) Link 16 precise participant location and identification TDL 1: 1) Measure: Periodicity***** = less than or equal to 12 seconds; Timeliness***** =

encryption; Spectrum availability. B) Line-of-sight UHF tactical data link network. 1) Measure: Time to fine synchronization = less than or equal to 60 seconds; Terminal Performance = 99% availability; Messaging = MER less than or equal to 1%. 2) Conditions: Operational network; Type 1 encryption; spectrum availability. III) Exchange Information: A) Link 16 weapon control: 1) Measure: Periodicity*** = less than or equal to 12 seconds; Timeliness**** = less than or equal to 3 seconds; Throughput***** = 53.76 kilobits per second; Size***** = 0.56 kilobits. 2) Conditions: Operational network; Type I encryption; Required spectrum is available. B) UHF weapon control JTAC2: 1) Measure: Periodicity***** = less than or equal to 30 seconds; Timeliness***** = less than or equal to 6 seconds; Throughput***** = 16 kilobits per second; Size***** = 1.12 kilobits. 2) Conditions: Operational network; Type I encryption; Required spectrum is available. C) Link 16 precise participant location and identification TDL 1: 1) Measure: Periodicity***** = less than or equal to 12 seconds; Timeliness***** =

network; Type 1 encryption; Spectrum availability. B) Line-of-sight UHF tactical data link network. 1) Measure: Time to fine synchronization = less than or equal to 60 seconds; Terminal Performance = 99% availability; Messaging = MER less than or equal to 1%. 2) Conditions: Operational network; Type 1 encryption; spectrum availability. III) Exchange Information: A) Link 16 weapon control: 1) Measure: Periodicity*** = less than or equal to 12 seconds; Timeliness**** = less than or equal to 3 seconds; Throughput***** = 53.76 kilobits per second; Size***** = 0.56 kilobits. 2) Conditions: Operational network; Type I encryption; Required spectrum is available. B) UHF weapon control JTAC2: 1) Measure: Periodicity***** = less than or equal to 30 seconds; Timeliness***** = less than or equal to 6 seconds; Throughput***** = 16 kilobits per second; Size***** = 1.12 kilobits. 2) Conditions: Operational network; Type I encryption; Required spectrum is available. C) Link 16 precise participant location and identification (TDL 1): 1) Measure: Periodicity***** = less than or equal to 12 seconds;

and be managed in the network: A) Link 16 tactical data link network. 1) Measure: Time to fine synchronization = less than or equal to 60 seconds; Terminal performance = 99% availability; Messaging = MER of less than or equal to 1%. 2) Conditions: Operational network; Type 1 encryption; Spectrum availability. B) Line-of-sight UHF tactical data link network. 1) Measure: Time to fine 2) Conditions: Operational network; Type 1 encryption; spectrum availability. III) Exchange Information: A) Link 16 weapon control: 1) Measure: Periodicity = less than or equal to 12 seconds; Timeliness = less than or equal to 3 seconds; Throughput = 53.76 kilobits per second; Size = 0.56 kilobits. 2) Conditions: Operational network; Type I encryption; Required spectrum is available. B) UHF weapon control JTAC2: 1)

less than or equal to 3 seconds; Throughput***** = 53.76 kilobits per second; Size***** = 0.315 kilobits. 2) Conditions: Operational network; Type I encryption; Required spectrum is available.	less than or equal to 3 seconds; Throughput***** = 53.76 kilobits per second; Size***** = 0.315 kilobits. 2) Conditions: Operational network; Type I encryption; Required spectrum is available.	Timeliness***** = less than or equal to 3 seconds; Throughput***** = 53.76 kilobits per second; Size***** = 0.315 kilobits. 2) Conditions: Operational network; Type I encryption; Required spectrum is available.	Measure Periodicity = less than or equal to 30 seconds; Timeliness = less than or equal to 6 seconds; Throughput = 16 kilobits per second; Size = 1.12 kilobits. 2) Conditions: Operational network; Type 1 encryption; Required spectrum is available. C) Link 16 precise participant location and identification TDL 1: 1) Measure: Periodicity = less than or equal to 12 seconds; Timeliness = less than or equal to 3 seconds; Throughput = 53.76 kilobits per second; Size = 0.315 kilobits. 2) Conditions: Operational network; Type 1 encryption; Required spectrum is available.
--	--	--	--

Weapon Effectiveness

Given meeting the threshold of WE the SDB II will achieve a minimum PSSK of (O-3), when averaged over various environmental/threat condition cases listed in Appendix F of CDD for SDB II dated July 28, 2009. The JROC reviewed the CDD in lieu of the CPD on November	Given meeting the threshold of WE the SDB II will achieve a minimum PSSK of (O-3), when averaged over various environmental/threat condition cases listed in Appendix F of CDD for SDB II dated July 28, 2009. The JROC reviewed the CDD in lieu of the CPD on November	SDB II will achieve a minimum PSSK of (T-3) for each target type (Table 6-1 of CDD for SDB II dated July 28, 2009) in each environmental/threat condition case listed in Appendix F of CDD for SDB II dated July 28, 2009. The JROC reviewed the CDD in lieu	Demonstrated performance data will be collected and displayed when SDB II enters OT.	SDB II will achieve a minimum PSSK of (T-3) for each target type (Table 6-1 of CDD for SDB II dated July 28, 2009) in each environmental/threat condition case listed in Appendix F of CDD for SDB II
---	---	--	--	---

18, 2014, the JROC subsequently signed the memorandum on January 13, 2015.	18, 2014, the JROC subsequently signed the memorandum on January 13, 2015.	of the CPD on November 18, 2014, the JROC subsequently signed the memorandum on January 13, 2015.	dated July 28, 2009. The JROC reviewed the CDD in lieu of the CPD on November 18, 2014; the JROC subsequently signed the memorandum on January 13, 2015.
--	--	---	--

Requirements Reference

Miniature Munitions Capability ORD dated April 8, 2005, CDD dated July 28, 2009, and JROC Memorandum dated January 13, 2015

Change Explanations

None

Notes

Threshold aircraft is defined as F-15E for the Air Force and F-35B and F-35C for the Navy. Program schedule for the Air Force will not be delayed due to availability of the F-35B and F-35C. Both targeting methods (threshold aircraft or JTAC) must be employed in any combination to achieve an average over the target set.

Acronyms and Abbreviations

BRU - Bomb Rack Unit
CNR - Combat-Net Radio
EMC - Electromagnetic Compatibility
EMI - Electromagnetic Interference
IEA - Information Enterprise Architecture
IFTU - In Flight Target Update
IP - Internet Protocol
JTAC - Joint Terminal Attack Controller
MER - Message Error Rate
NPG - Network Participation Group
O - Objective
OB - Objective
OT - Operational Test
PPLI - Precise Participant Location Information
PSSK - Probability of Single Shot Kill
SWE - Scenario Weapon Effectiveness
T - Threshold
TDL - Tactical Data Link
TLE - Target Location Error
UHF - Ultra High Frequency
WE - Weapon Effectiveness

Track to Budget

RDT&E

Appn	BA	PE	
Navy	1319	05	0604329N
	Project	Name	
	3072	Small Diameter Bomb (Shared)	
Air Force	3600	05	0604329F
	Project	Name	
	655191	Small Diameter Bomb Increment II	

Procurement

Appn	BA	PE	
Navy	1507	02	0204162N
	Line Item	Name	
	2238	Small Diameter Bomb II	
Air Force	3020	02	0207327F
	Line Item	Name	
	SDB000	Small Diameter Bomb (Shared)	
	Notes:	Until FY 2018	
	SDB002	Small Diameter Bomb II	
	Notes:	FY 2019 on	

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2015 \$M			BY 2015 \$M	TY \$M		
	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	SAR Baseline Production Estimate	Current APB Production Objective	Current Estimate
RDT&E	1678.1	1678.1	1845.9	1818.8	1648.9	1648.9	1804.5
Procurement	2376.8	2376.8	2614.5	2430.2	2792.0	2792.0	2820.8
Flyaway	--	--	--	2137.3	--	--	2487.6
Recurring	--	--	--	2137.3	--	--	2487.6
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	292.9	--	--	333.2
Other Support	--	--	--	292.9	--	--	333.2
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	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
Total	4054.9	4054.9	N/A	4249.0	4440.9	4440.9	4625.3

Current APB Cost Estimate Reference

Joint Air Force / Navy Service Cost Position dated April 29, 2015

Cost Notes

The APB covers the SDB II weapon system which consists of the Guided Bomb Unit (GBU)-53/B munition, mission planning and logistics system, and associated containers.

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 Production Estimate	Current APB Production	Current Estimate
RDT&E	163	163	163
Procurement	17000	17000	17000
Total	17163	17163	17163

Quantity Notes

Funding was added in FY 2017 in order to increase the quantity by 63 weapons in Lot 4.

Funding was added in FY 2019 in order to increase the quantity by 210 weapons in Lot 5.

Funding was added to FY 2020 in order to increase the quantity by 435 weapons in Lot 6.

Funding was add in FY 2023 in order to increase the quantity 114 weapons in Lot 9.

The total quantity of 822 was removed from the final lot in FY 2025 to maintain a total of 12,000 units for the Air Force.

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	1304.1	96.6	145.8	104.7	76.2	45.8	31.3	0.0	1804.5
Procurement	201.5	103.9	192.2	331.0	448.2	425.1	441.5	677.4	2820.8
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	1505.6	200.5	338.0	435.7	524.4	470.9	472.8	677.4	4625.3
PB 2018 Total	1497.7	200.5	311.1	367.9	527.9	477.0	423.0	774.6	4579.7
Delta	7.9	0.0	26.9	67.8	-3.5	-6.1	49.8	-97.2	45.6

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	163	0	0	0	0	0	0	0	0	163
Production	0	769	550	1260	1925	2910	2718	2832	4036	17000
PB 2019 Total	163	769	550	1260	1925	2910	2718	2832	4036	17163
PB 2018 Total	163	706	550	1050	1490	2910	2718	2718	4858	17163
Delta	0	63	0	210	435	0	0	114	-822	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
2006	--	--	--	--	--	--	24.7
2007	--	--	--	--	--	--	92.0
2008	--	--	--	--	--	--	139.6
2009	--	--	--	--	--	--	107.1
2010	--	--	--	--	--	--	126.5
2011	--	--	--	--	--	--	100.0
2012	--	--	--	--	--	--	138.8
2013	--	--	--	--	--	--	125.1
2014	--	--	--	--	--	--	109.6
2015	--	--	--	--	--	--	65.9
2016	--	--	--	--	--	--	28.0
2017	--	--	--	--	--	--	39.0
2018	--	--	--	--	--	--	39.0
2019	--	--	--	--	--	--	73.2
2020	--	--	--	--	--	--	31.2
2021	--	--	--	--	--	--	17.3
2022	--	--	--	--	--	--	27.4
2023	--	--	--	--	--	--	27.9
Subtotal	136	--	--	--	--	--	1312.3

Annual Funding							
3600 RDT&E Research, Development, Test, and Evaluation, Air Force							
Fiscal Year	Quantity	BY 2015 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2006	--	--	--	--	--	--	28.4
2007	--	--	--	--	--	--	103.0
2008	--	--	--	--	--	--	153.2
2009	--	--	--	--	--	--	116.0
2010	--	--	--	--	--	--	135.3
2011	--	--	--	--	--	--	105.0
2012	--	--	--	--	--	--	143.2
2013	--	--	--	--	--	--	126.9
2014	--	--	--	--	--	--	109.7
2015	--	--	--	--	--	--	65.3
2016	--	--	--	--	--	--	27.4
2017	--	--	--	--	--	--	37.4
2018	--	--	--	--	--	--	36.8
2019	--	--	--	--	--	--	67.9
2020	--	--	--	--	--	--	28.4
2021	--	--	--	--	--	--	15.4
2022	--	--	--	--	--	--	23.9
2023	--	--	--	--	--	--	23.9
Subtotal	136	--	--	--	--	--	1347.1

The FY 2019 PB reduced each year of the FYDP (FY 19 - FY 23) by an adjustment for inflation.
FY 2023 received a baseline extension of \$27.9M

Annual Funding								
1319 RDT&E Research, Development, Test, and Evaluation, Navy								
Fiscal Year	Quantity	TY \$M						
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program	
2005	--	--	--	--	--	--	--	8.8
2006	--	--	--	--	--	--	--	11.7
2007	--	--	--	--	--	--	--	9.7
2008	--	--	--	--	--	--	--	11.1
2009	--	--	--	--	--	--	--	15.8
2010	--	--	--	--	--	--	--	7.6
2011	--	--	--	--	--	--	--	13.4
2012	--	--	--	--	--	--	--	17.9
2013	--	--	--	--	--	--	--	16.6
2014	--	--	--	--	--	--	--	18.0
2015	--	--	--	--	--	--	--	11.2
2016	--	--	--	--	--	--	--	28.4
2017	--	--	--	--	--	--	--	37.6
2018	--	--	--	--	--	--	--	57.6
2019	--	--	--	--	--	--	--	72.6
2020	--	--	--	--	--	--	--	73.5
2021	--	--	--	--	--	--	--	58.9
2022	--	--	--	--	--	--	--	18.4
2023	--	--	--	--	--	--	--	3.4
Subtotal	27	--	--	--	--	--	--	492.2

Annual Funding							
1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2015 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2005	--	--	--	--	--	--	10.4
2006	--	--	--	--	--	--	13.4
2007	--	--	--	--	--	--	10.8
2008	--	--	--	--	--	--	12.2
2009	--	--	--	--	--	--	17.1
2010	--	--	--	--	--	--	8.1
2011	--	--	--	--	--	--	13.9
2012	--	--	--	--	--	--	18.3
2013	--	--	--	--	--	--	16.8
2014	--	--	--	--	--	--	18.0
2015	--	--	--	--	--	--	11.0
2016	--	--	--	--	--	--	27.5
2017	--	--	--	--	--	--	35.9
2018	--	--	--	--	--	--	54.0
2019	--	--	--	--	--	--	66.9
2020	--	--	--	--	--	--	66.4
2021	--	--	--	--	--	--	52.1
2022	--	--	--	--	--	--	16.0
2023	--	--	--	--	--	--	2.9
Subtotal	27	--	--	--	--	--	471.7

Includes weapon development only; does not include rack development.

Annual Funding 3020 Procurement Missile Procurement, 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
2015	144	34.1	0.5	--	34.6	0.5	35.1
2016	250	43.2	1.0	--	44.2	21.8	66.0
2017	375	67.6	1.2	--	68.8	31.6	100.4
2018	460	58.5	1.3	--	59.8	23.1	82.9
2019	510	59.5	1.4	--	60.9	40.0	100.9
2020	1175	182.6	3.8	--	186.4	26.1	212.5
2021	2160	293.2	7.0	--	300.2	33.3	333.5
2022	1968	281.7	6.7	--	288.4	19.7	308.1
2023	2082	286.8	7.2	--	294.0	28.0	322.0
2024	1968	274.5	6.9	--	281.4	17.0	298.4
2025	908	157.7	3.5	--	161.2	29.5	190.7
Subtotal	12000	1739.4	40.5	--	1779.9	270.6	2050.5

Annual Funding 3020 Procurement Missile Procurement, Air Force							
Fiscal Year	Quantity	BY 2015 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2015	144	33.2	0.5	--	33.7	0.5	34.2
2016	250	41.4	1.0	--	42.4	20.8	63.2
2017	375	63.5	1.1	--	64.6	29.7	94.3
2018	460	54.0	1.2	--	55.2	21.3	76.5
2019	510	53.9	1.3	--	55.2	36.1	91.3
2020	1175	162.1	3.4	--	165.5	23.1	188.6
2021	2160	255.1	6.1	--	261.2	29.0	290.2
2022	1968	240.3	5.7	--	246.0	16.8	262.8
2023	2082	239.9	6.0	--	245.9	23.4	269.3
2024	1968	225.1	5.7	--	230.8	13.9	244.7
2025	908	126.8	2.8	--	129.6	23.7	153.3
Subtotal	12000	1495.3	34.8	--	1530.1	238.3	1768.4

Annual Funding 1507 Procurement Weapons Procurement, Navy							
Fiscal Year	Quantity	TY \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2018	90	10.9	0.4	--	11.3	9.7	21.0
2019	750	78.7	2.7	--	81.4	9.9	91.3
2020	750	105.9	3.3	--	109.2	9.3	118.5
2021	750	102.2	3.2	--	105.4	9.3	114.7
2022	750	108.1	3.3	--	111.4	5.6	117.0
2023	750	109.6	3.3	--	112.9	6.6	119.5
2024	750	104.1	3.4	--	107.5	5.5	113.0
2025	410	66.6	2.0	--	68.6	6.7	75.3
Subtotal	5000	686.1	21.6	--	707.7	62.6	770.3

Annual Funding 1507 Procurement Weapons Procurement, Navy							
Fiscal Year	Quantity	BY 2015 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2018	90	10.1	0.4	--	10.5	8.9	19.4
2019	750	71.4	2.5	--	73.9	9.0	82.9
2020	750	94.2	2.9	--	97.1	8.4	105.5
2021	750	89.2	2.8	--	92.0	8.1	100.1
2022	750	92.5	2.8	--	95.3	4.8	100.1
2023	750	91.9	2.8	--	94.7	5.5	100.2
2024	750	85.6	2.8	--	88.4	4.5	92.9
2025	410	53.7	1.6	--	55.3	5.4	60.7
Subtotal	5000	588.6	18.6	--	607.2	54.6	661.8

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	8/6/2010	6/4/2015
Approved Quantity	4034	9947
Reference	Milestone B ADM	Milestone C ADM
Start Year	2013	2015
End Year	2018	2022

The Current Total LRIP Quantity is more than 10% of the total production quantity due to a delay in the completion of Operational Test and Evaluation caused by schedule revisions to the F-35 program, a threshold aircraft. Since the SDB II EMD contract award, the F-35 schedule has been further delayed, which requires an additional increase in the LRIP quantities to 9,947; this change was approved by the Milestone C ADM and accounts for max quantities in Lots 1-5 and most probable quantities in Lots 6-8. These quantities are necessary to provide production-configured or representative articles for Operational Test (OT), to establish an initial production base for the system, and to permit an orderly increase in the production rate for the system sufficient to lead to FRP upon the successful completion of OT.

Foreign Military Sales

Notes

The Defense Security Cooperation Agency (DSCA) has allocated \$71M from Special Defense Acquisition Funds (SDAF) to complete development and integration of exportability features into SDB II. The first and second SDAF allotments (totaling \$34.5M) were released to the program office in FY 2017. The final allotment (\$36.5M) was released January 2, 2018 and is expected to arrive in the program office February 2018. SDAF funding enables cost sharing over all projected sales to FMS customers.

Letter of Offer and Acceptance (LOA) AT-D-YAH was signed by the Commonwealth of Australia (CoA) on February 23, 2018 and will provide SDB II test and training assets and support.

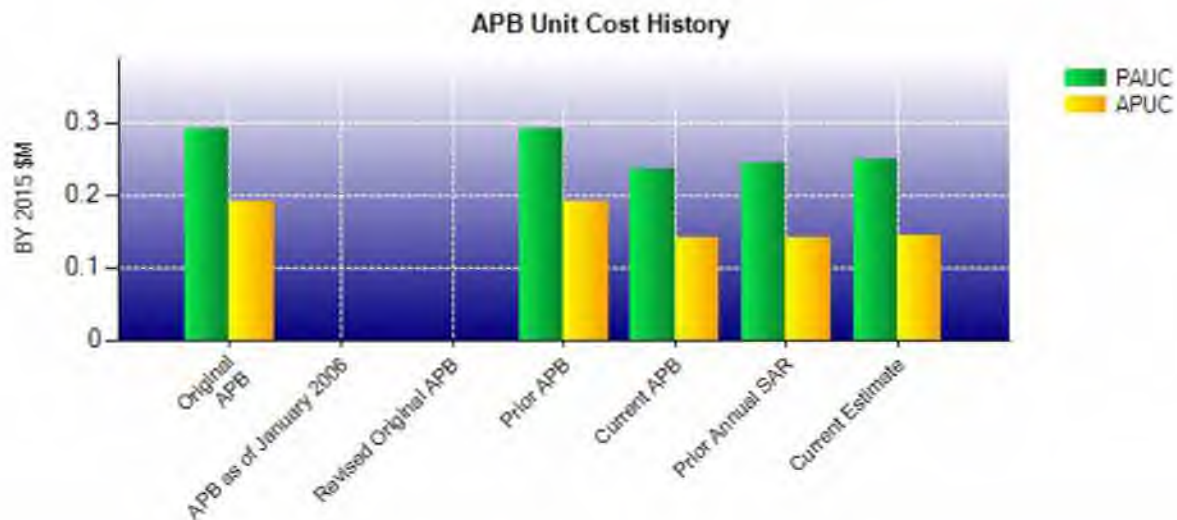
SDB II has provided Price and Availability data to Norway, Turkey and Netherlands. SDB II has provided information for Finland's use in helping select their next fighter aircraft. Future Requests for Information are anticipated from Belgium, Israel, Poland, Korea, and other F-35 partners and customers.

Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2015 \$M	BY 2015 \$M	% Change
	Current UCR Baseline (Sep 2015 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	4054.9	4249.0	
Quantity	17163	17163	
Unit Cost	0.236	0.248	+5.08
Average Procurement Unit Cost			
Cost	2376.8	2430.2	
Quantity	17000	17000	
Unit Cost	0.140	0.143	+2.14
Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2015 \$M	BY 2015 \$M	% Change
	Original UCR Baseline (Oct 2010 APB)	Current Estimate (Dec 2017 SAR)	
Program Acquisition Unit Cost			
Cost	4979.8	4249.0	
Quantity	17163	17163	
Unit Cost	0.290	0.248	-14.48
Average Procurement Unit Cost			
Cost	3237.9	2430.2	
Quantity	17000	17000	
Unit Cost	0.190	0.143	-24.74



APB Unit Cost History					
Item	Date	BY 2015 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Oct 2010	0.290	0.190	0.304	0.209
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	Oct 2010	0.290	0.190	0.304	0.209
Current APB	Sep 2015	0.236	0.140	0.259	0.164
Prior Annual SAR	Dec 2016	0.243	0.141	0.267	0.165
Current Estimate	Dec 2017	0.248	0.143	0.269	0.166

SAR Unit Cost History

Initial SAR Baseline to Current SAR Baseline (TY \$M)										
Initial PAUC Development Estimate	Changes								PAUC Production Estimate	
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total		
0.304	0.006	0.000	0.001	0.000	-0.049	0.000	-0.003	-0.045	0.259	

Current SAR Baseline to Current Estimate (TY \$M)										
PAUC Production Estimate	Changes								PAUC Current Estimate	
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total		
0.259	-0.001	0.000	0.000	0.005	0.004	0.000	0.002	0.010	0.269	

Initial SAR Baseline to Current SAR Baseline (TY \$M)									
Initial APUC Development Estimate	Changes								APUC Production Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.209	0.005	0.000	0.001	0.000	-0.048	0.000	-0.003	-0.045	0.164

Current SAR Baseline to Current Estimate (TY \$M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
0.164	-0.001	0.000	0.000	0.000	0.001	0.000	0.002	0.002	0.166

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	Jul 2010	Aug 2010	Jul 2010
Milestone C	N/A	Jan 2013	May 2015	May 2015
IOC	N/A	Jul 2016	Jan 2018	Jan 2019
Total Cost (TY \$M)	N/A	5210.4	4440.9	4625.3
Total Quantity	N/A	17163	17163	17163
PAUC	N/A	0.304	0.259	0.269

The IOC event above uses the F-15E Required Assets Available (RAA) milestone which is a surrogate for IOC. The F-15E is the initial aircraft with SDB II capability. There are three additional IOCs for this program, F/A-18E/F, F-35B and F-35C Initial Fielding, all occurring after the F-15E RAA milestone.

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	1648.9	2792.0	--	4440.9
Previous Changes				
Economic	+1.6	+0.5	--	+2.1
Quantity	--	--	--	--
Schedule	--	+0.5	--	+0.5
Engineering	+115.8	--	--	+115.8
Estimating	+6.5	+16.7	--	+23.2
Other	--	--	--	--
Support	--	-2.8	--	-2.8
Subtotal	+123.9	+14.9	--	+138.8
Current Changes				
Economic	-2.9	-23.6	--	-26.5
Quantity	--	--	--	--
Schedule	--	-1.9	--	-1.9
Engineering	--	--	--	--
Estimating	+34.6	+8.2	--	+42.8
Other	--	--	--	--
Support	--	+31.2	--	+31.2
Subtotal	+31.7	+13.9	--	+45.6
Total Changes	+155.6	+28.8	--	+184.4
CE - Cost Variance	1804.5	2820.8	--	4625.3
CE - Cost & Funding	1804.5	2820.8	--	4625.3

Summary BY 2015 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	1678.1	2376.8	--	4054.9
Previous Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	+107.9	--	--	+107.9
Estimating	+2.4	+15.0	--	+17.4
Other	--	--	--	--
Support	--	-2.4	--	-2.4
Subtotal	+110.3	+12.6	--	+122.9
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+7.1	--	+7.1
Engineering	--	--	--	--
Estimating	+30.4	+7.2	--	+37.6
Other	--	--	--	--
Support	--	+26.5	--	+26.5
Subtotal	+30.4	+40.8	--	+71.2
Total Changes	+140.7	+53.4	--	+194.1
CE - Cost Variance	1818.8	2430.2	--	4249.0
CE - Cost & Funding	1818.8	2430.2	--	4249.0

Previous Estimate: September 2017

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-2.9
Revised estimate to reflect application of new out-year inflation indices. (Estimating)	-0.2	-0.2
Revised estimate to reflect baseline extension in FY 2023. (Estimating)	+23.9	+27.9
Revised estimate to reflect service-wide adjustments. (Estimating)	+6.0	+6.2
Adjustment for current and prior escalation. (Estimating)	+0.7	+0.7
RDT&E Subtotal	+30.4	+31.7

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-23.6
Acceleration of procurement buy profile from FY 2025 based on additional funding provided in the FY 2019 PB. (Schedule)	0.0	-11.2
Additional schedule variation due to the acceleration of procurement buy profile from FY 2025 based on additional funding provided in the FY 2019 PB. (Schedule)	+7.1	+9.3
Revised estimate due to application of new out-year inflation indices. (Estimating)	+1.6	+1.6
Revised estimate to reflect actuals. (Estimating)	+1.6	+1.8
Revised estimate to align with FY 2019 PB. (Estimating)	+2.8	+3.8
Adjustment for current and prior escalation. (Estimating)	+1.2	+1.0
Adjustment for current and prior escalation. (Support)	+0.3	+0.6
Increase in Other Support due to the acceleration of the procurement profile which increases the support costs earlier in the program (Air Force). (Support)	+26.0	+30.6
Increase in Other Support to reflect application of new out-year inflation indices. (Support)	+0.2	0.0
Procurement Subtotal	+40.8	+13.9

Contracts

Contract Identification	
Appropriation:	Procurement
Contract Name:	Low Rate Initial Production Lot 1
Contractor:	Raytheon Company
Contractor Location:	1151 E. Hermans Rd Tucson, AZ 85756
Contract Number:	FA8672-15-C-0136/1
Contract Type:	Fixed Price Incentive(Firm Target) (FPIF)
Award Date:	June 12, 2015
Definitization Date:	June 12, 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
30.9	35.1	144	30.9	35.1	144	35.1	35.1

Contract Variance			
Item	Cost Variance		Schedule Variance
Cumulative Variances To Date (10/27/2017)	-25.0		-0.2
Previous Cumulative Variances	-23.1		-0.6
Net Change	-1.9		+0.4

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to Raytheon Missile Systems continuing to overrun the effort; however the government liability was limited to \$35.1M per the contract.

The favorable net change in the schedule variance is due to the delivery of 144 Lot 1 munitions per contract.

Notes

The SDB II LRIP Lot 1 contract was awarded for 144 Munitions, 156 Single Weapon Containers, eight Weapon Load Crew Trainers/Conventional Munitions Maintenance Trainers, four Practical Explosive Ordnance Disposal System Trainers, and data. All 144 munitions have been delivered as of October 31, 2017.

The SDB II Production Lot 1 Integrated Baseline Review was completed November 17, 2015.

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

Contract Identification

Appropriation: Procurement
Contract Name: Low Rate Initial Production Lot 2
Contractor: Raytheon Company
Contractor Location: 1151 E. Hermans Rd
 Tucson, AZ 85756
Contract Number: FA8672-16-C-0001/2
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: September 08, 2016
Definitization Date: September 08, 2016

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
49.2	55.8	250	49.3	55.9	250	49.3	55.9

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the cost increase of 37 additional containers purchased at pre-negotiated pricing.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	-18.2	+7.3
Previous Cumulative Variances	-8.4	+10.4
Net Change	-9.8	-3.1

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to Raytheon Missile Systems (RMS) continuing to overrun the effort; however the government liability is limited to \$55.9M per the contract

The unfavorable net change in the schedule variance is due to RMS taking credit for long lead material purchases early which is being accounted for in the Budgeted Cost of Work Scheduled at this point in the schedule. The schedule variance will continue to be unfavorable until the long lead items are accounted for in the Budgeted Cost of Work Performed. The Schedule Performance Index (SPI) is 1.357.

Notes

SDB II LRIP Lot 2 contract was awarded for 250 Munitions, 345 Single Weapon Containers, 20 Production Reliability Incentive Demonstration Effort (PRIDE) Captive Vehicles, 20 PRIDE Test Vehicles, 32 Weapon Load Crew Trainers, six Practical Explosive Ordnance Disposal System Trainers, and data. The work is expected to be completed by August 31, 2018.

The SDB II LRIP Lot 2 Integrated Baseline Review was completed June 21, 2017.

Contract Identification

Appropriation: Procurement
Contract Name: Low Rate Initial Production Lot 3
Contractor: Raytheon Missile Systems
Contractor Location: 1151 E. Hermans Rd
 Tucson, AZ 85756
Contract Number: FA8672-17-C-0010/3
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: January 27, 2017
Definitization Date: January 27, 2017

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
62.4	70.8	312	62.4	70.8	312	58.5	58.5

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2017)	-4.3	+13.0
Previous Cumulative Variances	-12.1	-0.1
Net Change	+7.8	+13.1

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to the Integrated Baseline Review (IBR) completed October 18, 2017 which established the Budgeted Cost of Work Performed (BCWP) allowing a calculated cost variance. Previously, only actual costs to date were provided.

The favorable net change in the schedule variance is due to the IBR completed October 18, 2017 which established the BCWP allowing a calculated schedule variance. Previously, only actual costs to date were provided.

Notes

The SDB II LRIP Lot 3 contract option was exercised for 312 Munitions, 413 Single Weapon Containers, 20 Tactical Weapon conversions to Guided Test Vehicles, 20 Production Reliability Incentive Demonstration Effort captive vehicles, and 24 Weapon Load Crew Trainers/Conventional Munitions Maintenance Trainers. The work is expected to be completed January 30, 2019.

The SDB II LRIP Lot 3 IBR is in process.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	163	163	163	100.00%
Production	144	144	17000	0.85%
Total Program Quantity Delivered	307	307	17163	1.79%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	4625.3	Years Appropriated	14
Expended to Date	1309.7	Percent Years Appropriated	66.67%
Percent Expended	28.32%	Appropriated to Date	1706.1
Total Funding Years	21	Percent Appropriated	36.89%

The above data is current as of February 14, 2018.

The Government does not take delivery of the 163 Developmental Test (DT) assets. The DT assets will not go to inventory. The 17,000 sustainment quantity will be delivered to inventory.

Operating and Support Cost

Cost Estimate Details

Date of Estimate: June 17, 2016
Source of Estimate: POE
Quantity to Sustain: 17000
Unit of Measure: Total Quantity
Service Life per Unit: 20.00 Years
Fiscal Years in Service: FY 2014 - FY 2046

The 163 developmental units will not be sustained.

Sustainment Strategy

The SDB II O&S strategy is to use Contractor Logistics Support (CLS) to cover sustainment activities for 17,000 weapons. Until SDB II achieves Full Rate Production, the program office plans to award an Interim CLS contract for FY 2019 through FY 2021 to support test assets and non-warranty repair of operational assets. The Request for Proposal is currently under program office review. A follow-on CLS Product Support Agreement (PSA) will be developed and put on contract with Raytheon. That PSA will be reviewed and updated at the end of each contractual period of performance. A 20-year warranty is assumed with a 20-year shelf-life and the subsequent demilitarization of the weapon.

Antecedent Information

No Antecedent. The SDB II weapon is a new acquisition program that provides Joint fighter/bomber aircraft the capability to engage mobile targets in adverse weather from stand-off ranges by utilizing a multi-mode seeker and a post-release communications weapon data link. SDB II will not replace SDB I.

Annual O&S Costs BY2015 \$M		
Cost Element	SDB II Average Annual Cost Per Total Quantity	No Antecedent (Antecedent) N/A
Unit-Level Manpower	0.632	--
Unit Operations	0.000	--
Maintenance	2.910	--
Sustaining Support	15.843	--
Continuing System Improvements	5.029	--
Indirect Support	0.466	--
Other	0.000	--
Total	24.880	--

Item	Total O&S Cost \$M			
	SDB II			No Antecedent (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
Base Year	897.5	987.3	821.0	N/A
Then Year	1327.5	N/A	1212.5	N/A

Equation to Translate Annual Cost to Total Cost

Total O&S cost is equal to the average annual total inventory cost per year times the total number of years in the O&S phase, \$24.88M * 33 years = \$821M (BY 2015).

O&S Cost Variance		
Category	BY 2015 \$M	Change Explanations
Prior SAR Total O&S Estimates - Sep 2017 SAR	821.0	
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	821.0	

Disposal Estimate Details

Date of Estimate: April 29, 2015
 Source of Estimate: SCP
 Disposal/Demilitarization Total Cost (BY 2015 \$M): Total costs for disposal of all Total Quantity are 41.7