



Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-178



Trident II (D-5) Sea-Launched Ballistic Missile UGM 133A (Trident II Missile)

As of FY 2017 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Common Acronyms and Abbreviations for MDAP Programs	3
Program Information	5
Responsible Office	5
References	5
Mission and Description	6
Executive Summary	7
Threshold Breaches	8
Schedule	9
Performance	11
Track to Budget	12
Cost and Funding	14
Low Rate Initial Production	28
Foreign Military Sales	29
Nuclear Costs	29
Unit Cost	30
Cost Variance	33
Contracts	36
Deliveries and Expenditures	48
Operating and Support Cost	49

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

Trident II (D-5) Sea-Launched Ballistic Missile UGM 133A (Trident II Missile)

DoD Component

Navy

Responsible Office

VADM Terry Benedict
Strategic Systems Programs
1250-10th Street, SE
Suite 3600; Washington Navy Yard
Washington, DC 20374-5127

Phone: 202-433-7001

Fax: 202-433-5326

DSN Phone: 288-7001

DSN Fax: 288-5326

Date Assigned: May 7, 2010

SP00@SSP.NAVY.MIL

References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated July 15, 1987

Approved APB

Navy Acquisition Executive (NAE) Approved Acquisition Program Baseline (APB) dated September 10, 2011

Mission and Description

The TRIDENT II (D5) Sea-Launched Ballistic Missile UGM 133A (TRIDENT II (D5) missile) developed an improved Submarine Launched Ballistic Missile with greater accuracy and payload capability at equivalent ranges as compared to the TRIDENT I (C4) system. TRIDENT II (D5) enhances United States (U.S.) strategic deterrence by providing a survivable sea-based system capable of engaging the full spectrum of potential targets. It enhances the U.S. position in strategic arms negotiation by providing a weapon system with performance and payload flexibility that accommodates various treaty initiatives. The TRIDENT II (D5) missile's increased payload allows the deterrent mission to be achieved with fewer submarines.

Executive Summary

On November 2, 2015, SSP completed a Demonstration and Shakedown Operation flight operation with a fully configured D5 Life Extension (LE) missile involving all of the LE missile electronics packages and the Guidance LE subsystem. This flight test was a critical milestone as D5 LE remains on track for initial fleet introduction (IFI) in FY 2017. The operation was the first flight test for two fully configured D5 LE missiles with all LE missiles electronics packages and the Guidance LE subsystem.

In the area of rocket motors and post boost control system gas generators, the TRIDENT II (D5) missile program has maintained the solid rocket motor unit cost from FY 2014 PB, however, the Navy is actively engaged with Lockheed Martin and Orbital ATK to aggressively lower their respective overheads as the industrial base shrinks. The Navy is cautiously watching the industrial base as the decreasing demand is expected to continue and will accelerate downward as both the Air Force and the National Aeronautics and Space Administration (NASA) reduce their procurements, increasing the risk of future unit costs. NASA is expected to make a decision whether to switch from solid to liquid propulsion systems for the next generation Space Launch Vehicles in the coming years. If NASA were to decide upon the liquid propulsion options, costs could significantly increase for the TRIDENT II (D5) missile. The current budget maintains buying 12 rocket motor sets per year through FY 2017 and increases to 14 sets in FY 2018 in order to address age out concerns. Due to the high rate of TRIDENT II (D5) missile production in the early years of the program, a significant portion of the inventory will age out in the near term driving the quantities to increase in FY 2018.

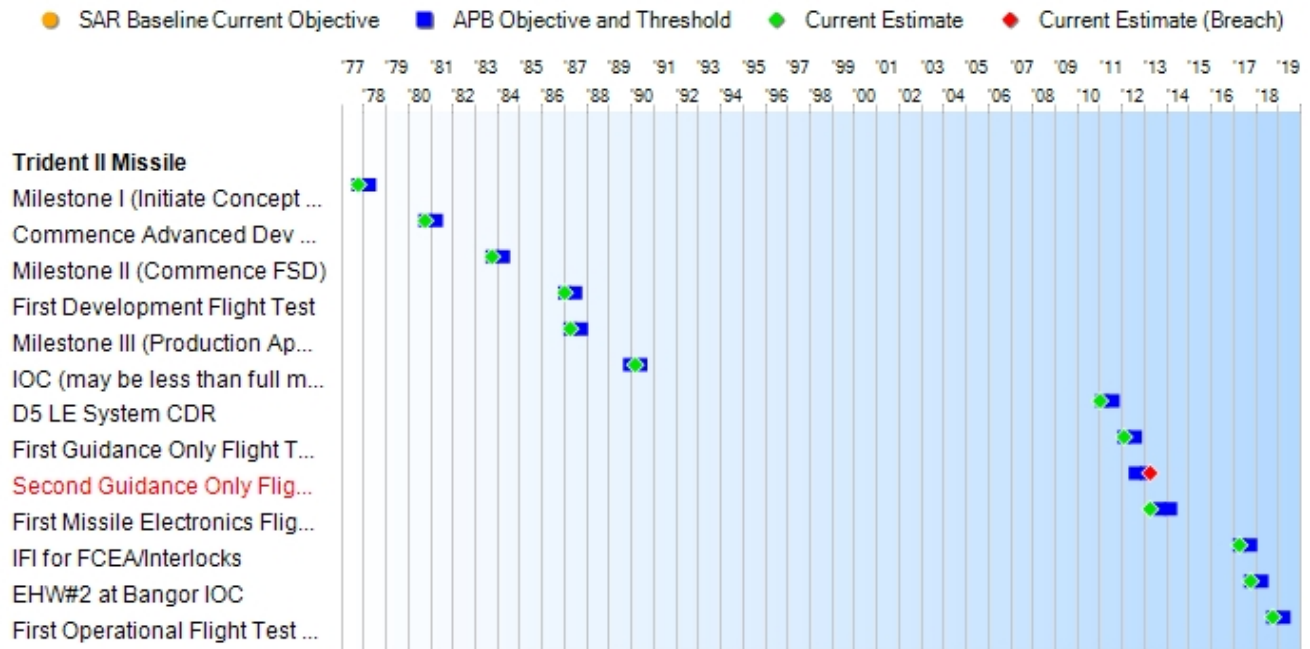
There are no significant software-related issues with this program at this time.

Threshold Breaches

APB Breaches			Explanation of Breach
Schedule		☒	This schedule breach was previously reported in the December 2014 SAR.
Performance		☐	
Cost	RDT&E	☐	Assistant Secretary of the Navy (Research, Development and Acquisition (RDA)) agreed at the November 2012 Program Executive Office Quarterly Review that no Program Deviation Report was required by the Program Manager as a result of the delay of Demonstration and Shakedown Operation-24.
	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 Production Estimate	Current APB Production Objective/Threshold		Current Estimate
Milestone I (Initiate Concept Definition)	Oct 1977	Oct 1977	Apr 1978	Oct 1977
Commence Advanced Dev Phase	Oct 1980	Oct 1980	Apr 1981	Oct 1980
Milestone II (Commence FSD)	Oct 1983	Oct 1983	Apr 1984	Oct 1983
First Development Flight Test	Jan 1987	Jan 1987	Jul 1987	Jan 1987
Milestone III (Production Approval)/ Award Initial Missile Production	Apr 1987	Apr 1987	Oct 1987	Apr 1987
IOC (may be less than full msl outload)	Dec 1989	Dec 1989	Jun 1990	Mar 1990
D5 LE System CDR	N/A	Feb 2011	Aug 2011	Jan 2011
First Guidance Only Flight Test (DASO-23)	N/A	Feb 2012	Aug 2012	Feb 2012
Second Guidance Only Flight Test (DASO-24)	N/A	Aug 2012	Feb 2013	Apr 2013 ¹
First Missile Electronics Flight Test (PTM-1/DASO-25)	N/A	Sep 2013	Mar 2014	Apr 2013
IFI for FCEA/Interlocks	N/A	Apr 2017	Oct 2017	Apr 2017
EHW#2 at Bangor IOC	N/A	Oct 2017	Apr 2018	Oct 2017
First Operational Flight Test (CET)	N/A	Oct 2018	Apr 2019	Oct 2018

¹ APB Breach

Change Explanations

None

Acronyms and Abbreviations

CDR - Critical Design Review
CET - Commander Evaluation Test
D5 LE - D5 Life Extension
DASO - Demonstration and Shakedown Operation
Dev - Development
EHW - Explosive Handling Wharf
FCEA - Flight Control Electronics Assembly
FSD - Full Scale Development
IFI - Initial Fleet Introduction
MSL - missile
PTM - Proofing Test Missile

Performance

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

Track to Budget

RDT&E

Appn	BA	PE	
Navy	1319	07	0101221N
	Project	Name	
	0951	JOINT WARHEAD FUZE SUSTAINMENT PROGRAM	
Navy	1319	04	0603371N
	Project	Name	
	0951	TRIDENT II/TRIDENT II (Sunk)	
Navy	1319	04	0604327N
	Project	Name	
	9611	HARD AND DEEPLY BURIED TARGET DEFEAT SYSTEM/Advanced Conventional Strike Capability Demonstration (Sunk)	
Navy	1319	04	0604363N
	Project	Name	
	0951	TRIDENT II/TRIDENT II (Sunk)	

Procurement

Appn	BA	PE	
Navy	1507	01	0101228N
	Line Item	Name	
	1150	TRIDENT II (D-5) Missile (Sunk)	
	1250	TRIDENT MODS (Shared)	

Notes

The funding profile for Proc (Weapons Proc, Navy (WPN)) does not match that found in the FY 2017 PB controls for WPN after FY 2011. Beginning in FY 2012, WPN funding is shared between Acquisition and O&S costs in the SAR and, hence, the O&S costs are not reflected in the TRIDENT II (D5) missile acquisition.

MILCON

Appn	BA	PE	
Navy	1205	01	0202576N
	Project	Name	
		Facilities Restoration and MOD- Grounds (Shared) (Sunk)	
Navy	1205	01	0203176N
	Project	Name	
		Facilities Restoration and MOD- Fleet Ops (Shared) (Sunk)	
Navy	1205	01	0212176N
	Project	Name	

Navy	68436990		Fleet Ballistic Missile	
	1205	01	0212576N	
	Project		Name	
			Facilities New Footprint (Shared) (Sunk)	
Navy	1205		0703676N	
	Project		Name	
			Facility Restoration and MOD - Maint and Prod (Shared) (Sunk)	
Navy	1205		0712876N	
	Project		Name	
Navy	60495822		Facilities - New Footprint- Main and Production	
	1205	01	0805976N	
	Project		Name	
			Facility Restoration and MOD - Training (Shared) (Sunk)	

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 1983 \$M			BY 1983 \$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	8434.9	8783.9	9662.3	8806.3	9453.2	10126.0	10184.7
Procurement	17588.5	18406.7	20247.4	18261.7	25396.9	30643.5	30547.3
Flyaway	--	--	--	14077.6	--	--	23668.7
Recurring	--	--	--	14077.6	--	--	23668.7
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	4184.1	--	--	6878.6
Other Support	--	--	--	4160.5	--	--	6843.2
Initial Spares	--	--	--	23.6	--	--	35.4
MILCON	532.9	757.6	833.4	636.3	668.4	1220.3	991.4
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	26556.3	27948.2	N/A	27704.3	35518.5	41989.8	41723.4

Confidence Level

Confidence Level of cost estimate for current APB: 50%

TRIDENT II D-5 is currently in the process of reconciling the program office estimate with our Internal Independent Cost Estimate (IICE). Costs are being compared at the point estimate which is approximately 17 to 18% and are making a comparison at the 50% estimate. The plan is to have this reconciliation completed in the near future.

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	30	28	28
Procurement	815	533	533
Total	845	561	561

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2017 President's Budget / December 2015 SAR (TY\$ M)									
Appropriation	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
RDT&E	9729.6	84.8	111.9	108.8	63.6	65.2	20.8	0.0	10184.7
Procurement	26214.6	603.1	614.1	615.7	658.4	704.0	616.1	521.3	30547.3
MILCON	926.1	0.0	0.0	0.0	65.3	0.0	0.0	0.0	991.4
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2017 Total	36870.3	687.9	726.0	724.5	787.3	769.2	636.9	521.3	41723.4
PB 2016 Total	36868.7	708.5	769.5	739.8	804.1	784.4	462.0	521.3	41658.3
Delta	1.6	-20.6	-43.5	-15.3	-16.8	-15.2	174.9	0.0	65.1

Quantity Summary										
FY 2017 President's Budget / December 2015 SAR (TY\$ M)										
Quantity	Undistributed	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Development	28	0	0	0	0	0	0	0	0	28
Production	0	533	0	0	0	0	0	0	0	533
PB 2017 Total	28	533	0	0	0	0	0	0	0	561
PB 2016 Total	28	533	0	0	0	0	0	0	0	561
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

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
1978	--	--	--	--	--	--	5.0
1979	--	--	--	--	--	--	5.0
1980	--	--	--	--	--	--	25.6
1981	--	--	--	--	--	--	96.7
1982	--	--	--	--	--	--	198.4
1983	--	--	--	--	--	--	351.0
1984	--	--	--	--	--	--	1447.3
1985	--	--	--	--	--	--	1982.6
1986	--	--	--	--	--	--	1942.3
1987	--	--	--	--	--	--	1565.3
1988	--	--	--	--	--	--	1029.7
1989	--	--	--	--	--	--	546.5
1990	--	--	--	--	--	--	169.5
1991	--	--	--	--	--	--	43.0
1992	--	--	--	--	--	--	2.2
1993	--	--	--	--	--	--	0.4
1994	--	--	--	--	--	--	--
1995	--	--	--	--	--	--	0.5
1996	--	--	--	--	--	--	0.3
1997	--	--	--	--	--	--	--
1998	--	--	--	--	--	--	--
1999	--	--	--	--	--	--	--
2000	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	--
2002	--	--	--	--	--	--	--
2003	--	--	--	--	--	--	--
2004	--	--	--	--	--	--	--
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	19.4
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	14.0
2011	--	--	--	--	--	--	21.7
2012	--	--	--	--	--	--	41.5

2013	--	--	--	--	--	--	56.2
2014	--	--	--	--	--	--	83.8
2015	--	--	--	--	--	--	81.7
2016	--	--	--	--	--	--	84.8
2017	--	--	--	--	--	--	111.9
2018	--	--	--	--	--	--	108.8
2019	--	--	--	--	--	--	63.6
2020	--	--	--	--	--	--	65.2
2021	--	--	--	--	--	--	20.8
Subtotal	28	--	--	--	--	--	10184.7

Annual Funding							
1319 RDT&E Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 1983 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1978	--	--	--	--	--	--	7.2
1979	--	--	--	--	--	--	6.5
1980	--	--	--	--	--	--	30.1
1981	--	--	--	--	--	--	104.2
1982	--	--	--	--	--	--	203.1
1983	--	--	--	--	--	--	343.9
1984	--	--	--	--	--	--	1368.5
1985	--	--	--	--	--	--	1818.1
1986	--	--	--	--	--	--	1731.2
1987	--	--	--	--	--	--	1355.1
1988	--	--	--	--	--	--	862.6
1989	--	--	--	--	--	--	439.3
1990	--	--	--	--	--	--	130.9
1991	--	--	--	--	--	--	32.1
1992	--	--	--	--	--	--	1.6
1993	--	--	--	--	--	--	0.3
1994	--	--	--	--	--	--	--
1995	--	--	--	--	--	--	0.3
1996	--	--	--	--	--	--	0.2
1997	--	--	--	--	--	--	--
1998	--	--	--	--	--	--	--
1999	--	--	--	--	--	--	--
2000	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	--
2002	--	--	--	--	--	--	--
2003	--	--	--	--	--	--	--
2004	--	--	--	--	--	--	--
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	10.7
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	7.4
2011	--	--	--	--	--	--	11.2
2012	--	--	--	--	--	--	21.1
2013	--	--	--	--	--	--	28.2
2014	--	--	--	--	--	--	41.5
2015	--	--	--	--	--	--	39.9
2016	--	--	--	--	--	--	40.8
2017	--	--	--	--	--	--	52.9

2018	--	--	--	--	--	--	50.4
2019	--	--	--	--	--	--	28.9
2020	--	--	--	--	--	--	29.0
2021	--	--	--	--	--	--	9.1
Subtotal	28	--	--	--	--	--	8806.3

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
1985	--	--	--	--	--	160.8	160.8
1986	--	--	--	--	--	508.4	508.4
1987	21	1051.6	--	--	1051.6	295.2	1346.8
1988	66	1710.0	--	--	1710.0	323.5	2033.5
1989	66	1586.8	--	--	1586.8	252.2	1839.0
1990	41	1114.2	--	--	1114.2	286.4	1400.6
1991	52	1242.9	--	--	1242.9	269.5	1512.4
1992	28	817.6	--	--	817.6	279.3	1096.9
1993	21	719.6	--	--	719.6	258.5	978.1
1994	24	989.2	--	--	989.2	111.5	1100.7
1995	18	606.5	--	--	606.5	58.9	665.4
1996	6	186.5	--	--	186.5	324.2	510.7
1997	7	209.1	--	--	209.1	108.1	317.2
1998	5	150.8	--	--	150.8	117.7	268.5
1999	5	189.3	--	--	189.3	126.4	315.7
2000	12	362.7	--	--	362.7	122.7	485.4
2001	12	355.2	--	--	355.2	81.9	437.1
2002	12	378.8	--	--	378.8	154.0	532.8
2003	12	553.5	--	--	553.5	19.5	573.0
2004	12	640.0	--	--	640.0	0.9	640.9
2005	5	612.9	--	--	612.9	102.4	715.3
2006	--	708.9	--	--	708.9	196.3	905.2
2007	--	766.7	--	--	766.7	147.4	914.1
2008	12	862.6	--	--	862.6	179.2	1041.8
2009	24	889.2	--	--	889.2	178.9	1068.1
2010	24	867.8	--	--	867.8	184.4	1052.2
2011	24	935.7	--	--	935.7	177.5	1113.2
2012	24	624.7	--	--	624.7	131.8	756.5
2013	--	420.7	--	--	420.7	180.7	601.4
2014	--	463.1	--	--	463.1	202.5	665.6
2015	--	454.0	--	--	454.0	203.3	657.3
2016	--	396.9	--	--	396.9	206.2	603.1
2017	--	403.9	--	--	403.9	210.2	614.1
2018	--	422.1	--	--	422.1	193.6	615.7
2019	--	461.8	--	--	461.8	196.6	658.4
2020	--	508.2	--	--	508.2	195.8	704.0
2021	--	483.9	--	--	483.9	132.2	616.1
2022	--	333.6	--	--	333.6	--	333.6
2023	--	150.0	--	--	150.0	--	150.0
2024	--	37.7	--	--	37.7	--	37.7

Subtotal	533	23668.7	--	--	23668.7	6878.6	30547.3
----------	-----	---------	----	----	---------	--------	---------

Annual Funding 1507 Procurement Weapons Procurement, Navy							
Fiscal Year	Quantity	BY 1983 \$M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1985	--	--	--	--	--	137.7	137.7
1986	--	--	--	--	--	420.7	420.7
1987	21	839.8	--	--	839.8	235.8	1075.6
1988	66	1314.1	--	--	1314.1	248.6	1562.7
1989	66	1173.3	--	--	1173.3	186.5	1359.8
1990	41	796.4	--	--	796.4	204.7	1001.1
1991	52	866.5	--	--	866.5	187.8	1054.3
1992	28	555.9	--	--	555.9	189.9	745.8
1993	21	480.5	--	--	480.5	172.6	653.1
1994	24	647.8	--	--	647.8	73.0	720.8
1995	18	390.9	--	--	390.9	38.0	428.9
1996	6	118.7	--	--	118.7	206.5	325.2
1997	7	131.8	--	--	131.8	68.2	200.0
1998	5	94.0	--	--	94.0	73.3	167.3
1999	5	116.5	--	--	116.5	77.8	194.3
2000	12	220.2	--	--	220.2	74.6	294.8
2001	12	213.0	--	--	213.0	49.1	262.1
2002	12	224.7	--	--	224.7	91.4	316.1
2003	12	321.8	--	--	321.8	11.3	333.1
2004	12	361.3	--	--	361.3	0.5	361.8
2005	5	336.7	--	--	336.7	56.3	393.0
2006	--	379.9	--	--	379.9	105.2	485.1
2007	--	402.2	--	--	402.2	77.3	479.5
2008	12	445.4	--	--	445.4	92.5	537.9
2009	24	452.6	--	--	452.6	91.1	543.7
2010	24	434.3	--	--	434.3	92.3	526.6
2011	24	459.5	--	--	459.5	87.2	546.7
2012	24	302.2	--	--	302.2	63.8	366.0
2013	--	200.7	--	--	200.7	86.2	286.9
2014	--	217.9	--	--	217.9	95.3	313.2
2015	--	210.4	--	--	210.4	94.3	304.7
2016	--	180.8	--	--	180.8	94.0	274.8
2017	--	180.6	--	--	180.6	94.0	274.6
2018	--	185.1	--	--	185.1	84.9	270.0
2019	--	198.5	--	--	198.5	84.6	283.1
2020	--	214.2	--	--	214.2	82.5	296.7
2021	--	200.0	--	--	200.0	54.6	254.6
2022	--	135.1	--	--	135.1	--	135.1
2023	--	59.6	--	--	59.6	--	59.6
2024	--	14.7	--	--	14.7	--	14.7

Subtotal	533	14077.6	--	--	14077.6	4184.1	18261.7
----------	-----	---------	----	----	---------	--------	---------

Cost Quantity Information		
1507 Procurement Weapons Procurement, Navy		
Fiscal Year	Quantity	End Item Recurring Flyaway (Aligned With Quantity) BY 1983 \$M
1985	--	--
1986	--	--
1987	21	737.5
1988	66	1068.2
1989	66	941.3
1990	41	796.4
1991	52	901.9
1992	28	541.8
1993	21	480.5
1994	24	647.8
1995	18	390.9
1996	6	118.7
1997	7	131.9
1998	5	94.0
1999	5	116.5
2000	12	220.4
2001	12	213.1
2002	12	224.7
2003	12	321.8
2004	12	779.6
2005	5	827.3
2006	--	--
2007	--	--
2008	12	628.9
2009	24	1015.2
2010	24	1163.1
2011	24	997.5
2012	24	718.6
2013	--	--
2014	--	--
2015	--	--
2016	--	--
2017	--	--
2018	--	--
2019	--	--
2020	--	--
2021	--	--
2022	--	--
2023	--	--

2024	--	--
Subtotal	533	14077.6

Annual Funding 1205 MILCON Military Construction, Navy and Marine Corps		
Fiscal Year	TY \$M	
	Total Program	
1984	79.3	
1985	82.4	
1986	126.3	
1987	21.0	
1988	18.1	
1989	15.4	
1990	7.6	
1991	70.5	
1992	--	
1993	--	
1994	--	
1995	--	
1996	--	
1997	--	
1998	--	
1999	--	
2000	5.7	
2001	1.1	
2002	4.2	
2003	7.2	
2004	--	
2005	--	
2006	2.8	
2007	--	
2008	28.7	
2009	--	
2010	--	
2011	--	
2012	78.0	
2013	264.4	
2014	24.9	
2015	88.5	
2016	--	
2017	--	
2018	--	
2019	65.3	
Subtotal	991.4	

Annual Funding 1205 MILCON Military Construction, Navy and Marine Corps	
Fiscal Year	BY 1983 \$M
	Total Program
1984	72.8
1985	73.4
1986	109.3
1987	17.6
1988	14.6
1989	12.0
1990	5.7
1991	51.3
1992	--
1993	--
1994	--
1995	--
1996	--
1997	--
1998	--
1999	--
2000	3.6
2001	0.7
2002	2.6
2003	4.3
2004	--
2005	--
2006	1.6
2007	--
2008	15.4
2009	--
2010	--
2011	--
2012	38.8
2013	129.7
2014	12.0
2015	42.1
2016	--
2017	--
2018	--
2019	28.8
Subtotal	636.3

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	10/30/1983	10/30/1983
Approved Quantity	21	21
Reference	Milestone II ADM	Milestone II ADM
Start Year	1983	1983
End Year	1987	1987

Foreign Military Sales

None

Nuclear Costs

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

Unit Cost

Unit Cost Report

Item	BY 1983 \$M	BY 1983 \$M	% Change
	Current UCR Baseline (Sep 2011 APB)	Current Estimate (Dec 2015 SAR)	

Program Acquisition Unit Cost

Cost	27948.2	27704.3	
Quantity	561	561	
Unit Cost	49.819	49.384	-0.87

Average Procurement Unit Cost

Cost	18406.7	18261.7	
Quantity	533	533	
Unit Cost	34.534	34.262	-0.79

Item	BY 1983 \$M	BY 1983 \$M	% Change
	Revised Original UCR Baseline (Jun 2002 APB)	Current Estimate (Dec 2015 SAR)	

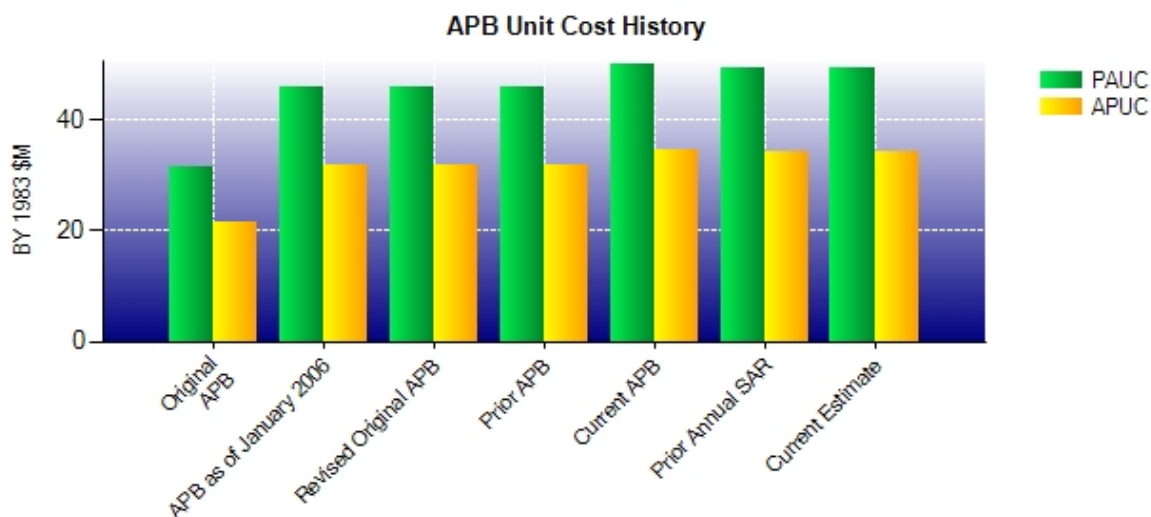
Program Acquisition Unit Cost

Cost	25943.7	27704.3	
Quantity	568	561	
Unit Cost	45.676	49.384	+8.12

Average Procurement Unit Cost

Cost	17155.2	18261.7	
Quantity	540	533	
Unit Cost	31.769	34.262	+7.85

Unit Cost History



Item	Date	BY 1983 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
Original APB	Jul 1987	31.428	21.581	42.034	31.162
APB as of January 2006	Jun 2002	45.676	31.769	66.098	51.266
Revised Original APB	Jun 2002	45.676	31.769	66.098	51.266
Prior APB	Jun 2002	45.676	31.769	66.098	51.266
Current APB	Sep 2011	49.819	34.534	74.848	57.492
Prior Annual SAR	Dec 2014	49.303	34.166	74.257	57.156
Current Estimate	Dec 2015	49.384	34.262	74.373	57.312

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY \$M)									
Initial PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
42.034	-0.760	9.301	3.381	0.180	15.663	0.000	4.574	32.339	74.373

Current SAR Baseline to Current Estimate (TY \$M)									
Initial APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
31.162	-0.733	3.971	3.215	0.175	14.708	0.000	4.814	26.150	57.312

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	N/A	Oct 1977	Oct 1977	Oct 1977
Milestone II	N/A	Oct 1983	Oct 1983	Oct 1983
Milestone III	N/A	Mar 1987	Apr 1987	Apr 1987
IOC	N/A	Dec 1989	Dec 1989	Mar 1990
Total Cost (TY \$M)	N/A	37645.1	35518.5	41723.4
Total Quantity	N/A	740	845	561
PAUC	N/A	50.872	42.034	74.373

Cost Variance

Summary TY \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	9453.2	25396.9	668.4	35518.5
Previous Changes				
Economic	-34.6	-347.3	+4.5	-377.4
Quantity	-48.0	-6671.1	--	-6719.1
Schedule	+75.3	+1713.6	+108.0	+1896.9
Engineering	-0.8	+93.1	+8.5	+100.8
Estimating	+761.4	+7681.9	+198.3	+8641.6
Other	--	--	--	--
Support	--	+2597.0	--	+2597.0
Subtotal	+753.3	+5067.2	+319.3	+6139.8
Current Changes				
Economic	-3.7	-43.2	-2.3	-49.2
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-18.1	+157.4	+6.0	+145.3
Other	--	--	--	--
Support	--	-31.0	--	-31.0
Subtotal	-21.8	+83.2	+3.7	+65.1
Total Changes	+731.5	+5150.4	+323.0	+6204.9
CE - Cost Variance	10184.7	30547.3	991.4	41723.4
CE - Cost & Funding	10184.7	30547.3	991.4	41723.4

Summary BY 1983 \$M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	8434.9	17588.5	532.9	26556.3
Previous Changes				
Economic	--	--	--	--
Quantity	-40.0	-3930.8	--	-3970.8
Schedule	+32.7	-32.2	+35.1	+35.6
Engineering	+1.3	+50.4	+4.2	+55.9
Estimating	+385.9	+3453.6	+61.2	+3900.7
Other	--	--	--	--
Support	--	+1081.1	--	+1081.1
Subtotal	+379.9	+622.1	+100.5	+1102.5
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-8.5	+65.4	+2.9	+59.8
Other	--	--	--	--
Support	--	-14.3	--	-14.3
Subtotal	-8.5	+51.1	+2.9	+45.5
Total Changes	+371.4	+673.2	+103.4	+1148.0
CE - Cost Variance	8806.3	18261.7	636.3	27704.3
CE - Cost & Funding	8806.3	18261.7	636.3	27704.3

Previous Estimate: December 2014

RDT&E	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-3.7
Congressional reductions FY 2016 which resulted in Mk5A funding decreases. (Estimating)	-6.7	-13.9
Adjustment for current and prior escalation. (Estimating)	+0.7	+1.4
Decreases due to revised estimates. (Estimating)	-2.5	-5.6
RDT&E Subtotal	-8.5	-21.8

Procurement	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-43.2
Congressional reductions FY 2016 which resulted in Mk5A funding decrease. (Estimating)	-4.4	-10.0
Revised funding due to the Balanced Budget Amendment. (Estimating)	-2.7	-6.0
Increases due to revised estimates for Strategic Programs Alteration Kits (Flight Control Electronics Assembly, Interlocks, Command Sequencer, and Missile Inverter). (Estimating)	+67.8	+162.9
Adjustment for current and prior escalation. (Estimating)	+4.7	+10.5
Adjustment for current and prior escalation. (Support)	+2.3	+4.5
Decrease in Other Support due to realignment from Other Weapons Support to O&S for refresh and replacement of Extended Navy Test Beds necessary to support life of the program. (Support)	-16.6	-35.5
Procurement Subtotal	+51.1	+83.2

MILCON	\$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-2.3
Revised Project Estimates for the Motor Transfer Facility project at the Utah Test and Training Range. (Estimating)	+2.0	+4.2
Adjustment for current and prior escalation. (Estimating)	+0.9	+1.8
MILCON Subtotal	+2.9	+3.7

Contracts

Contract Identification

Appropriation: Procurement
Contract Name: Guidance FY 11 Production
Contractor: Charles Stark Draper Laboratory
Contractor Location: 55 Technology Square
 Cambridge, MA 02139
Contract Number: N00030-11-C-0014
Contract Type: Fixed Price Incentive(Firm Target) (FPIF), Firm Fixed Price (FFP), Cost Plus Incentive Fee (CPIF)
Award Date: February 10, 2011
Definitization Date: June 22, 2011

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
178.5	181.9	N/A	178.5	181.9	N/A	178.5	178.5

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2015)	+1.5	-1.4
Previous Cumulative Variances	+1.8	-1.3
Net Change	-0.3	-0.1

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to greater than planned Program Management activities required to address a delay in parts deliveries. The cumulative cost variance remains favorable and is comparable to the slightly unfavorable schedule variance, which it will be used to recover.

The unfavorable net change in the schedule variance is due to completion of deliverables as this contract comes to a close, but for which performance has not yet been recorded.

Notes

Current Contract Ceiling Price contains the CPIF, FFP efforts and FPIF. FFP efforts are not included in the variance data reported above.

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

Contract Identification

Appropriation: Procurement
Contract Name: Guidance FY11 Omnibus
Contractor: Charles Stark Draper Laboratory
Contractor Location: 55 Technology Square
 Cambridge, MA 02139
Contract Number: N00030-11-C-0005
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: December 28, 2010
Definitization Date: December 28, 2010

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
142.9	N/A	N/A	494.3	N/A	N/A	476.6	476.6

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications which exercised the FY 2012, FY 2013, and FY 2014 option CLINs.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2015)	+3.5	-2.9
Previous Cumulative Variances	+5.7	-1.5
Net Change	-2.2	-1.4

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to technical issues with the Interferometric Fiber-Optic Gyro and Alternate Pendulous Integrating Gyro Accelerometer. The cumulative cost variance remains favorable and is greater than the slightly unfavorable schedule variance, which it will be used to recover.

The unfavorable net change in the schedule variance is due to completion of deliverables as this contract comes to a close, but for which performance has not yet been recorded.

Notes

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

Contract Identification

Appropriation: Procurement
Contract Name: Guidance FY12 Production
Contractor: Charles Stark Draper Laboratory
Contractor Location: 55 Technology Square
 Cambridge, MA 02139
Contract Number: N00030-12-C-0005
Contract Type: Fixed Price Incentive(Firm Target) (FPIF), Firm Fixed Price (FFP)
Award Date: May 04, 2012
Definitization Date: May 04, 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
236.7	35.7	651	236.7	35.7	651	236.7	236.7

Contract Variance			
Item		Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2015)		0.0	-2.7
Previous Cumulative Variances		-1.1	-7.4
Net Change		+1.1	+4.7

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to

The favorable net change in the schedule variance is due to accelerometer sensor production and corrections to performance data with minimal impact to performance analysis. Materials that were originally delayed in receipt at the time of the last SAR submission were delivered over the course of FY 2015 leading to a large positive change in schedule variance.

Notes

Initial Target Price and Current Target Price represent the total contract values. Ceiling prices reflect the value of the FFP CLINs, which are the only CLINs with ceilings. Therefore, Ceiling price will be lower than Target Price for this contract.

Ceiling Price change due to correction of data.

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

Contract Identification

Appropriation: Procurement
Contract Name: TRIDENT II FY12 P&DSS
Contractor: Lockheed Martin Space Systems
Contractor Location: 1111 Lockheed Martin Way
Sunnyvale, CA 94089
Contract Number: N00030-12-C-0100
Contract Type: Cost Plus Incentive Fee (CPIF), Cost Plus Fixed Fee (CPFF), Fixed Price Incentive(Firm Target) (FPIF)
Award Date: October 01, 2011
Definitization Date: December 16, 2011

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
334.7	590.7	N/A	1134.9	590.7	N/A	1134.9	1134.9

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract definitization and the exercising of options.

Contract Variance			
Item	Cost Variance	Schedule Variance	
Cumulative Variances To Date (12/31/2015)	+23.9	-11.8	
Previous Cumulative Variances	+34.1	-13.5	
Net Change	-10.2	+1.7	

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to 1) Increased labor volume resulting from quality surveillance activities for the first stage, second stage, and common stage motor areas; 2) Missile Body production final year efforts, and 3) More support than planned for several key electronics packages. The cumulative cost variance remains very favorable and is expected to be sufficient to achieve schedule recovery.

The favorable net change in the schedule variance is due to 1) Schedule recovery for a Circuit Card Assembly milestone; 2) Partial schedule recovery on the Flight Control and Interlocks Chassis builds at the Missile Integrated Support Facility; and 3) Schedule recovery for the delivery of Thruster Assemblies and Thruster Cartridges.

Notes

Initial Target Price and Current Target Price represent the total contract values. Ceiling Prices reflect the value of the FFP CLINs, which are the only CLINs with ceilings. Therefore, Ceiling Price will be lower than Target Price for this contract.

Production and Deployed System Support = P&DSS

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

Contract Identification

Appropriation: Procurement
Contract Name: Guidance FY13 SPALT
Contractor: Charles Stark Draper Laboratory
Contractor Location: 55 Technology Square
 Cambridge, MA 02139
Contract Number: N00030-13-C-0007
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 08, 2013
Definitization Date: March 08, 2013

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
252.8	28.9	651	257.8	28.9	651	257.8	257.8

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to last year's data only reflected only Cost for all CLINs when, in fact, the data should have reflected Cost plus Fee. This year the data is reflecting Cost plus Fee.

Contract Variance			
Item	Cost Variance	Schedule Variance	
Cumulative Variances To Date (12/31/2015)	+0.3	-3.6	
Previous Cumulative Variances	-0.3	-1.9	
Net Change	+0.6	-1.7	

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to work associated with the builds which was pushed back to focus on quality assurance of needed production parts. Since many of these pushed tasks were level of effort, performance was taken on quality assurance time spent and not actual builds.

The unfavorable net change in the schedule variance is due to delays caused by the late receipt of SPALT materials. These materials used to produce accelerometers have seen ongoing delays for over a year which is an issue affecting Guidance subsystem contracts in multiple fiscal years. Another issue has been delays in circuit card assemblies and component production due to a brief factory shutdown due to quality management issues are also contributing to the variance. The factory is now functioning at full capacity with maximum efficiency.

Notes

Initial Target Price and Current Target Price represent the total contract values. Ceiling Prices reflect the value of the FFP CLINs, which are the only CLINs with ceilings. Therefore, Ceiling Price will be lower than Target Price for this contract.

Ceiling Price change due to correction of data.

Strategic Programs Alteration = SPALT

Contract Identification

Appropriation: Procurement
Contract Name: TRIDENT II FY13 P&DSS
Contractor: Lockheed Martin Space Systems
Contractor Location: 1111 Lockheed Martin Way
Sunnyvale, CA 94089
Contract Number: N00030-12-C-0101
Contract Type: Cost Plus Incentive Fee (CPIF), Cost Plus Fixed Fee (CPFF), Fixed Price Incentive(Firm Target) (FPIF)
Award Date: October 01, 2012
Definitization Date: December 20, 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
592.2	516.7	N/A	1661.9	516.7	N/A	1661.9	1661.9

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract definitization and the exercising of options.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2015)	+20.7	-13.5
Previous Cumulative Variances	+32.0	-9.3
Net Change	-11.3	-4.2

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to 1) Power Supply Modules labor ramp up to recover schedule and sub-contractor rework of accelerometers along with increased shifts to support a revised schedule; 2) Survivability Efforts- a) hardware deliveries were delayed for components needed for the cable builds, which extended the overall time required for build/test, and b) unplanned work was required during the Burn-In Console Critical Design Review; and 3) Increased System Engineering support for the First Article Compatibility Testing on Missile Railcar Support Equipment along with Loading Tube pads. The cumulative variance remains favorable and is expected to be sufficient to recover the schedule variance.

The unfavorable net change in the schedule variance is due to 1) Schedule delay in second tier subcontractors for circuit card assembly; 2) Re-test and rework of accelerometer components due to subcontractor quality control, and 3) First, Second, and Third Stage rocket motors production delays due to focus on quality training and unscheduled down time on the rocket motor precision drilling machine.

Notes

Initial Target Price and Current Target Price represent the total contract values. Ceiling Prices reflect the value of the FFP CLINs, which are the only CLINs with ceilings. Therefore, Ceiling Prices will be lower than Target Price for this contract.

Production and Deployed System Support = P&DSS

Contract Identification

Appropriation: Procurement
Contract Name: TRIDENT II FY14 P&DSS
Contractor: Lockheed Martin Space Systems
Contractor Location: 1111 Lockheed Martin Way
Sunnyvale, CA 94089
Contract Number: N00030-13-C-0100
Contract Type: Cost Plus Fixed Fee (CPFF), Fixed Price Incentive(Firm Target) (FPIF)
Award Date: September 17, 2013
Definitization Date: November 05, 2013

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
98.0	529.5	N/A	756.2	529.5	N/A	756.2	756.2

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract definitization and the exercising of options.

Contract Variance			
Item	Cost Variance	Schedule Variance	
Cumulative Variances To Date (12/31/2015)	+23.0	-9.2	
Previous Cumulative Variances	+17.7	-6.3	
Net Change	+5.3	-2.9	

Cost and Schedule Variance Explanations

The favorable net change in the cost variance is due to 1) Life Extension (LE) Production - Program Management Integrator Disciplines personnel are being leveraged across multiple open production contracts, reducing labor costs; 2) Production - Planned material deliveries are delayed; however, when material deliveries are made this will reduce the cost variance; 3) Lower support required for the procurement and receipt of non-LE electronic parts material; and 4) The Test Missile Kit antenna manufacturing area improvements due to process efficiencies utilizing batch assembly and test.

The unfavorable net change in the schedule variance is due to 1) First article inspection quality management activities and reprioritization to meet Strategic Weapons Facility, Atlantic cable demand; and 2) Delay in delivery of second stage igniter Strategic Systems Program Alteration conversions. Schedule recovery is expected without program impacts.

Notes

Initial Target Price and Current Target Price represent the total contract values. Ceiling Prices reflect the value of the FFP CLINs, which are the only CLINs with ceilings. Therefore, Ceiling Price will be lower than Target Price for this contract.

Production and Deployed System Support = P&DSS

Contract Identification

Appropriation: Procurement
Contract Name: TRIDENT II FY 15 P&DSS
Contractor: Lockheed Martin and Space
Contractor Location: 1111 Lockheed Martin Way
Sunnyvale, CA 94089
Contract Number: N00030-14-C-0100
Contract Type: Cost Plus Incentive Fee (CPIF), Fixed Price Incentive(Firm Target) (FPIF)
Award Date: July 07, 2014
Definitization Date: August 19, 2014

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
146.3	549.6	N/A	786.7	549.6	N/A	786.7	786.7

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract definitization and the exercise of options as funding becomes available.

Contract Variance			
Item	Cost Variance	Schedule Variance	
Cumulative Variances To Date (12/31/2015)	+14.9	+3.4	
Previous Cumulative Variances	--	--	
Net Change	+14.9	+3.4	

Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to 1) Labor efficiencies across multiple engineering and program management disciplines resulting from a) less system engineering support than planned; b) successful integration testing led to less trouble shooting on the Simulated Flight Test Equipment; and c) favorable rates resulting from hiring of junior personnel to replenish personnel retiring; and 2) Delays in low dollar value material deliveries, however when material deliveries are made this will reduce the cost variance.

The favorable cumulative schedule variance is due to 1) Supplier is ahead of schedule on producing the First Stage and Second Stage motor chocks, Third Stage (TS) dollies and TS Motor Supports and completion of machining and welding for Aerospike Protective Caps; 2) Early delivery of Integrated Valve Assembly Current Monitor Assembly, Preamplifier L Band, and Source Controlled Drawing Low Cost Test Missile Kit Telemetry Transmitter; and 3) Early delivery of Source Controlled Drawings of a required Pressure Transducer.

Notes

This is the first time this contract is being reported.

Initial Target Price and Current Target Price represent the total contract values. Ceiling Prices reflect the value of the FFP CLINs, which are the only CLINs with ceilings. Therefore, Ceiling Price will be lower than Target Price for this contract.

Production and Deployed System Support = P&DSS

Contract Identification

Appropriation: Procurement
Contract Name: FY 14 Guidance SPALT
Contractor: Charles Stark Draper Laboratory
Contractor Location: 55 Technology Square
 Cambridge, MA 02139
Contract Number: N00030-14-C-0001
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: March 01, 2014
Definitization Date: April 28, 2014

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
283.2	40.0	750	283.2	40.0	750	283.2	283.2

Contract Variance			
Item		Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2015)		+2.7	-8.0
Previous Cumulative Variances		--	--
Net Change		+2.7	-8.0

Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to delayed contractor billing which is expected to recover.

The unfavorable cumulative schedule variance is due to 1) Delayed receipt of accelerometer materials. This slip in delivery will not affect the timeline of the overall guidance system; 2) Delays on sensors on previous contracts contributing to delays in gyroscope production; and 3) Delays in circuit card assemblies and component production due to a brief factory shutdown due to quality management issues. The factory is now functioning at full capacity with maximum efficiency.

Notes

This is the first time this contract is being reported.

Initial Target Price and Current Target Price represent the total contract values. Ceiling Prices reflect the value of the FFP CLINs, which are the only CLINs with ceilings. Therefore, Ceiling Price will be lower than Target Price for this contract.

Strategic Programs Alterations = SPALT

Contract Identification

Appropriation: Procurement
Contract Name: FY 15 Guidance SPALT
Contractor: Charles Stark Draper Laboratory
Contractor Location: 55 Technology Square
 Cambridge, MA 02139
Contract Number: N00030-15-C-0003
Contract Type: Fixed Price Incentive(Firm Target) (FPIF)
Award Date: February 02, 2015
Definitization Date: February 02, 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
302.4	41.0	869	302.4	41.0	869	302.4	302.4

Contract Variance			
Item		Cost Variance	Schedule Variance
Cumulative Variances To Date (12/31/2015)		+0.9	-2.2
Previous Cumulative Variances		--	--
Net Change		+0.9	-2.2

Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to delays on the FY 2014 Guidance SPALT contract which delayed the start of FY 2015 SPALT work. Now that production is back to full capacity this variance will start to erode once prior year work is completed. The current delays on this contract are in the areas of production, infrastructure support, and program management.

The unfavorable cumulative schedule variance is due to an extended delay in subcontractor billing receipts that has prevented the recording of performance. This variance will correct once invoiced are received.

Notes

This is the first time this contract is being reported.

Initial Target Price and Current Target Price represent the total contract values. Ceiling Prices reflect the value of the FFP CLINs, which are the only CLINs with ceilings. Therefore, Ceiling Price will be lower than Target Price for this contract.

Strategic Programs Alteration = SPALT

Contract Identification

Appropriation: Procurement
Contract Name: FY 15 Guidance Omnibus Life Extension
Contractor: Charles Stark Draper Laboratory
Contractor Location: 55 Technology Square
 Cambridge, MA 02139
Contract Number: N00030-14-C-0054
Contract Type: Cost Plus Incentive Fee (CPIF), Cost Plus Fixed Fee (CPFF)
Award Date: September 30, 2014
Definitization Date: September 30, 2014

Contract Price							
Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price At Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
10.0	N/A	1	49.7	N/A	1	49.7	49.7

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to contract modifications which exercised and funded the FY 2015 option CLINs.

Contract Variance			
Item	Cost Variance	Schedule Variance	
Cumulative Variances To Date (12/31/2015)	+2.5	-0.6	
Previous Cumulative Variances	--	--	
Net Change	+2.5	-0.6	

Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to technical system performance utilizing fewer hours than planned.

The unfavorable cumulative schedule variance is due to delays in completing system qualification testing due to system test issues.

Notes

This is the first time this contract is being reported.

Initial Target Price and Current Target Price represent the total contract value. Ceiling Prices reflect the value of the FFP CLINs, which are the only CLINs with ceilings. Therefore, Ceiling Price will be lower than Target Price for this contract.

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	28	28	28	100.00%
Production	425	425	533	79.74%
Total Program Quantity Delivered	453	453	561	80.75%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	41723.4	Years Appropriated	39
Expended to Date	35732.8	Percent Years Appropriated	82.98%
Percent Expended	85.64%	Appropriated to Date	37558.2
Total Funding Years	47	Percent Appropriated	90.02%

The above data is current as of February 09, 2016.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	February 11, 2016
Source of Estimate:	POE
Quantity to Sustain:	533
Unit of Measure:	Missile
Service Life per Unit:	43.00 Years
Fiscal Years in Service:	FY 2000 - FY 2042

Total missiles procured for the TRIDENT II (D5) missile program is 561. Of that number, 28 of those missiles were RDT&E missiles, with the remainder of 533 to be procured using Weapons Procurement, Navy (WPN) funding. Strategic Systems Programs (SSP) uses the number of 533 as O&S costs began in FY 2000 and end in FY 2042. That time period would only cover the 533 procured missiles and would not support the 28 RDT&E missiles which were procured in the late 1980s prior to IOC in 1990.

The costs reflected in this section are for FYs 2000-2042. This is due to the fact that TRIDENT II (D5) missile did not have to establish an O&S APB or report O&S costs. FY 2000 was the first year that SSP was required to begin showing O&S costs for TRIDENT II (D5) missile in its SAR.

Sustainment Strategy

With the collaboration of SSP and its industry partners, life cycle sustainment is the basic premise of the TRIDENT II (D5) missile program and its life extension. The strategy is to reduce O&S costs, provide a full range of logistics support, maintain critical reliability and accuracy requirements and implement the Shipboard Systems Integration (SSI) refresh schedule. A total of 533 TRIDENT II (D5) missiles will be procured for this program that will support the OHIO-Class submarine through FY 2042. The TRIDENT II (D5) missile will be the initial strategic weapon system (SWS) for the OHIO-Class Replacement Program (ORP).

The TRIDENT II (D5) missile SWS is completing its 26th year of deployment and has reached its original design life goal. Like any other aging weapon system, increased maintenance and repair will be required to sustain a safe, reliable, and accurate SWS. SSP's "Cradle to Grave" responsibility requires a broad range of engineering knowledge and unique skill sets to support the Navy's primary nuclear deterrent system. As such, engineering support spanning all phases of the weapon system life cycle is provided by one organization (SSP). Operational Engineering Support (OES) is required for the establishment of a "closed loop" system which includes the following: 1) collecting data from the Fleet; 2) measuring weapons system performance; 3) analyzing the data collected to identify performance deficiencies; 4) investigating problems identified; 5) developing solutions to resolve the deficiencies and problems; and 6) implementing corrective actions to the Fleet. The SSP life cycle budget maintains the industrial base and expertise in the workforce and ensures that those skill sets will be available for the follow-on ORP.

The TRIDENT II (D5) missile SWS achieved Milestone I in October 1977; Milestone II in October 1983; and Milestone III in April 1987. At that time, program life cycle cost estimates and service cost positions were not required. At the request of the Assistant Secretary of the Navy (ASN) (Research, Development & Acquisition (RDA)), SSP submitted an Internal ICE for only the acquisition portion of the TRIDENT II (D5) Life Extension Program, therefore no O&S cost estimate is available. ASN (RDA) has determined that the current APB is to remain open.

Antecedent Information

The TRIDENT II (D5) weapon system replaced the TRIDENT I (C4) weapon system. O&S costs and assumptions for the TRIDENT I (C4) system are not available.

Annual O&S Costs BY1983 \$M		
Cost Element	Trident II Missile Average Annual Cost Per Missile	TRIDENT I (C-4) (Antecedent) N/A
Unit-Level Manpower	--	--
Unit Operations	--	--
Maintenance	0.231	--
Sustaining Support	0.940	--
Continuing System Improvements	--	--
Indirect Support	0.003	--
Other	--	--
Total	1.174	--

Item	Total O&S Cost \$M			
	Trident II Missile			TRIDENT I (C-4) (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
Base Year	N/A	N/A	26909.0	0.0
Then Year	N/A	N/A	65446.0	N/A

While the TRIDENT II (D5) missile program will procure 533 WPN missiles there will never be a time when SSP will support a total of 533 missiles in a given year. This is due to the flight test program as ever year a certain number of missiles are tested for reliability and accuracy.

Annual O&S Costs are broken down into these categories:

Maintenance: Provides for the repair, overhaul, and missile processing of the TRIDENT II (D5) missiles' SWS at the Strategic Weapons Facilities (SWFs).

Sustaining Support: Provides for the sustainment of the TRIDENT II (D5) missiles' SWS to include SSI efforts, replacement of aging rocket motors, tooling and test equipment, modifications required for treaty obligations, SWS training at the SWFs, and salaries and benefits for the SSP employees.

Indirect Support: Provides for real property maintenance including funding for recurring maintenance, major repair projects, and minor construction in support of the Fleet Ballistic Missiles and TRIDENT II (D5) facilities. The last year of funding for these efforts was FY 2003.

Equation to Translate Annual Cost to Total Cost

\$1.1741M is the average O&S cost per missile per year (in BY \$).

\$1.1741M x 533 missiles = \$625.795M as the average O&S costs for all missiles per year (in BY \$).

\$625.795M x 43 years = \$26,909M as the cost of O&S costs for all missiles from FY 2000-FY 2042 (in BY \$).

O&S Cost Variance		
Category	BY 1983 \$M	Change Explanations
Prior SAR Total O&S Estimates - Dec 2014 SAR	26769.0	
Programmatic/Planning Factors	140.0	Procurement, Navy O&S sustaining support increases due to keeping Ship Submersible Ballistic Navy (SSBN) 730 and SSBN 731 in operational service, and a technical correction to the SSI program as well as a realignment of the refresh and replacement of Extended Navy Test Beds which are necessary to support life of the program. Operations and Maintenance, Navy sustaining support and maintenance increases are due to OES increases in the areas of performance evaluation, reliability maintenance, and accuracy thus ensuring the necessary technical expertise and industrial base in order to maintain the sea based strategic deterrent demonstrated safety, reliability, and accuracy and its unique technologies through the entire life of the OHIO Class and as the initial payload for the ORP. Missile Processing operations also increased as a result of the National Threat Capability Assessment, Force Restructure, and New Strategic Arms Reduction Treaty implementation.
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	140.0	
Current Estimate	26909.0	

Disposal Estimate Details

Date of Estimate: February 04, 2016
Source of Estimate: POE
Disposal/Demilitarization Total Cost (BY 1983 \$M): Total costs for disposal of all Missile are 124.7

O&S Costs for TRIDENT II (D5) missile include 1st, 2nd, and 3rd stage rocket motor disposal. At this time, these are the only disposal/demilitarization costs anticipated for the TRIDENT II (D5) missile. Any further disposal/demilitarization costs will be determined once final decisions have been made in regards to the OHIO-Class Replacement Program. The costs displayed in this section reflect infrastructure costs required for maintaining a disposal program.