Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-582

Signal Data Processor with Sierra Chip (SDP-S)

Planar Array Antenna Assembly (PAAA)

Cooperative Engagement Capability (CEC)

As of FY 2019 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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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

Cooperative Engagement Capability (CEC)

DoD Component

Navy

Joint Participants

FMS; United States Marine Corps; United States Air Force; United States Army

Responsible Office

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References

SAR Baseline (Production Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated April 3, 2002

Approved APB

Component Acquisition Executive (CAE) Approved Acquisition Program Baseline (APB) dated November 27, 2017

Mission and Description

The Cooperative Engagement Capability (CEC) increases overall Naval Air Defense capabilities by integrating sensors and weapon assets into a single, integrated, real-time network which expands the battlespace; enhances situational awareness; increases depth of fire and enables longer intercept ranges; and improves decision and reaction times.

CEC is a real-time sensor netting system that enables high quality situational awareness and Integrated Fire Control (IFC) capability, which revolutionizes Naval Air Defense by providing improved accuracy, continuity, and identification consistency. This sensor netting system significantly improves Naval Carrier and Expeditionary Strike Group's Area Air Defense capabilities by extracting and distributing sensor-derived information such that the superset of this data is available to all participating CEC Cooperating Units (CUs). CEC fuses the distributed data from shipboard, airborne, Composite Tracking Network (CTN) ground mobile units, Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) and select coalition partners into a single fire control quality air track picture. Radar measurement data from individual CUs within a CEC equipped force are transmitted to other CUs using the Line-Of-Sight Data Distribution System. A variety of automated network configurations are possible since CEC terminals provide highly directional, point-to-point data exchanges.

The CEC system distributes data between sensor and weapon assets to create a single, distributed, integrated air picture that supports and enables IFC. Individual sensors on all platforms in a CEC network are used in a cooperative manner as a distributed system to obtain track information to form a single, real-time composite track. This real-time composite tracking enables CEC to support Theater Air and Missile Defense allowing coordination of Naval and Joint sensor system assets among CEC equipped ships, aircraft, and land platforms and joint operational access to engage cruise missiles that threaten joint forces in a denied access environment.

CEC consists of the following variants:

AN/USG-2: Shipboard designation of CEC deployed aboard the Aegis Guided Missile Cruisers (CG), Aegis Guided Missile Destroyers (DDG), Aircraft Carriers (CVN) and Amphibious Transport Dock (LPD)/Amphibious Assault (LHD) ships

AN/USG-3: Airborne designation of CEC deployed in E-2C and E-2D aircraft

AN/USG-4: United States Marine Corps (USMC) CTN platform

AN/USG-5: United States Army JLENS platform

AN/USG-6/7/8/10: FMS

AN/USG-9: CEC with USMC Common Aviation Command and Control System

The Digital Warfare Office Tactical Networking Implementation will begin FY 2019. CEC will lead a cross functional team with participation from key naval tactical network organizations and fleet representation to conduct initial systems engineering and experimentation for improving tactical data dissemination to support further development of IFC concepts. This includes investigation of Communications-As-A-Service implementation across multiple radios, waveforms, and network architectures; and early Software-in-the-Loop and Land Based Test Site experimentation to formulate the solution toward the development of Fleet Tactical Grid and Distributed Maritime Operations.

Executive Summary

The CEC program has been in FRP for the AN/USG-2 (shipboard variant) since CY 2002 and for the AN/USG-3B (E-2D airborne variant) since CY 2014. Development efforts continue in order to keep pace with the security threats and ensure producIbility. The program remains focused on ensuring compatibility and interoperability.

The Navy developed a phased approach to resolve interoperability issues.

- Phase 1 (Complete) - Near Term – Break Identification Racetrack. Installed/Completed FY 2012.
- Phase 2 (Complete) - Accelerated Mid-Term Interoperability Improvement Project (AMIIP) (FY 2011 - FY 2017), which further improves interoperability, and is certified within Aegis, Ship Self Defense System, and E-2C Hawkeye 2000 combat systems. Original AMIIP Project completed and fielded.
    - AMIIP design has been extended to E-2D and USMC Common Aviation Command and Control System (CAC2S) Phase 2. E-2D AMIIP Flight Testing is in progress with Fleet delivery planned in FY 2019.
    - CAC2S Phase 2 included AMIIP during the design phase. DT and OT of CAC2S Phase 2 have been completed with Fleet Fielding to Marine Air Control Squadrons in FY 2017.
- Phase 3 (Future) – Far Term Interoperability Improvement Project (Identification Friend or Foe (IFF) Mode 5/S). CEC is currently on track to field mode 5 by CY 2020. IFF Mode S capabilities are planned for development starting in FY 2019 with Fleet fielding approximately FY 2023

Compatibility issues are being addressed through Software Maintenance builds which are planned for fielding annually commencing in second quarter of FY 2018. All known high priority software issues are being addressed in each annual build.

CEC continues to follow an evolutionary acquisition process, delivering capability in increments of hardware and/or software upgrades. This evolutionary approach acknowledges the need for future capability improvements to pace evolving threats.

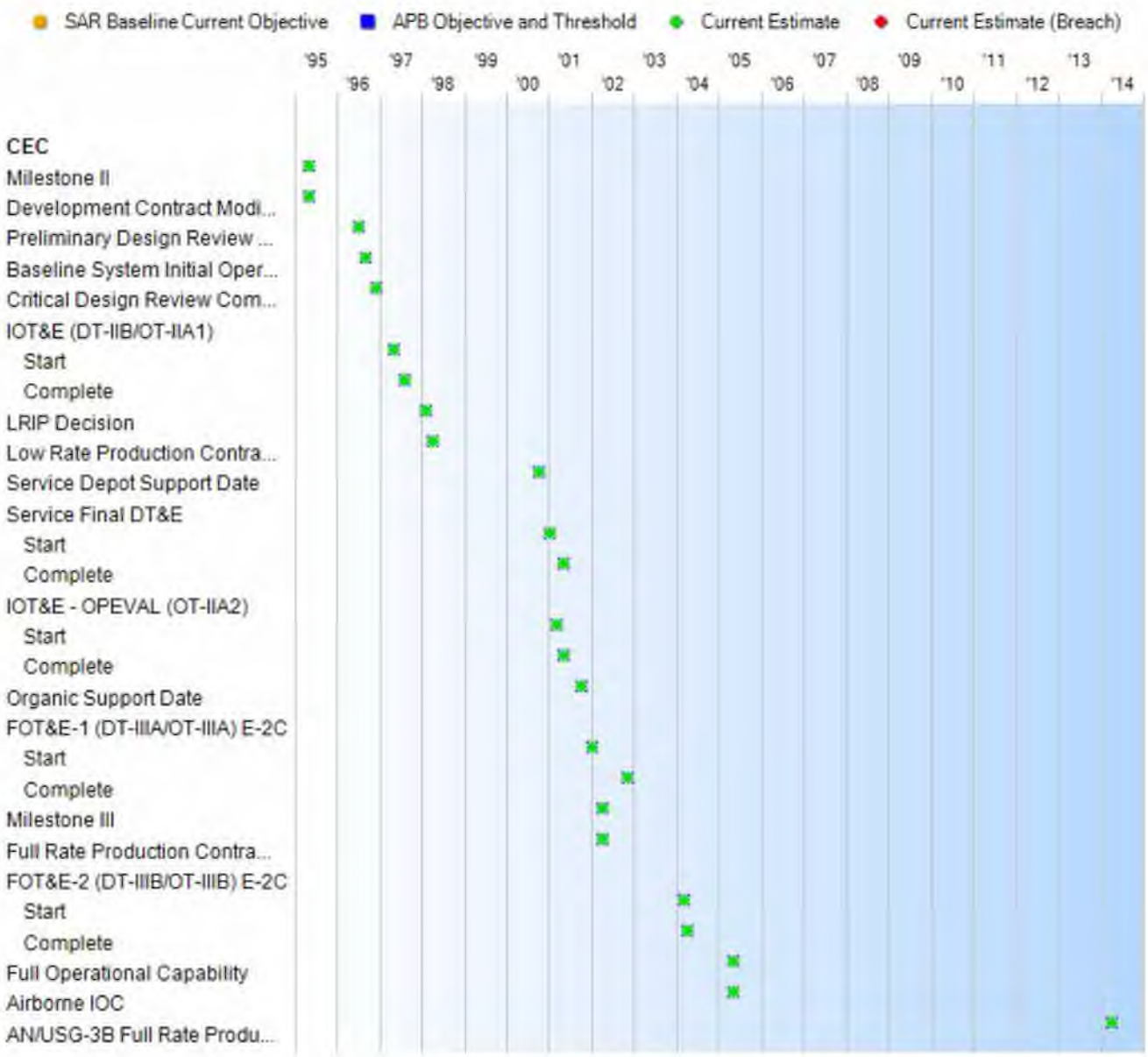
There are no significant software-related issues with this program at this time.

Threshold Breaches

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

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

Schedule


SAR Baseline Current Objective
APB Objective and Threshold
Current Estimate
Current Estimate (Breach)
'95
'96
'97
'98
'99
'00
'01
'02
'03
'04
'05
'06
'07
'08
'09
'10
'11
'12
'13
'14
CEC
Milestone II
Development Contract Modi...
Preliminary Design Review ...
Baseline System Initial Oper...
Critical Design Review Com...
IOT&E (DT-IIB/OT-IIA1)
Start
Complete
LRIP Decision
Low Rate Production Contra...
Service Depot Support Date
Service Final DT&E
Start
Complete
IOT&E - OPEVAL (OT-IIA2)
Start
Complete
Organic Support Date
FOT&E-1 (DT-IIIA/OT-IIIA) E-2C
Start
Complete
Milestone III
Full Rate Production Contra...
FOT&E-2 (DT-IIIB/OT-IIIB) E-2C
Start
Complete
Full Operational Capability
Airborne IOC
AN/USG-3B Full Rate Produ...

Schedule Events					
Events	SAR Baseline Production Estimate	Current APB Production Objective/Threshold		Current Estimate	
Milestone II	May 1995	May 1995	May 1995	May 1995	
Development Contract Modification	May 1995	May 1995	May 1995	May 1995	
Preliminary Design Review Complete	Feb 1996	Jul 1996	Jul 1996	Jul 1996	
Baseline System Initial Operational Capability	Sep 1996	Sep 1996	Sep 1996	Sep 1996	
Critical Design Review Complete	Aug 1996	Dec 1996	Dec 1996	Dec 1996	
IOT&E (DT-IIB/OT-IIA1)					
Start	May 1997	May 1997	May 1997	May 1997	
Complete	Aug 1997	Aug 1997	Aug 1997	Aug 1997	
LRIP Decision	Dec 1997	Feb 1998	Feb 1998	Feb 1998	
Low Rate Production Contract Award	Apr 1998	Apr 1998	Apr 1998	Apr 1998	
Service Depot Support Date	Oct 2000	Oct 2000	Oct 2000	Oct 2000	
Service Final DT&E					
Start	Jul 2000	Jan 2001	Jan 2001	Jan 2001	
Complete	Nov 2000	May 2001	May 2001	May 2001	
IOT&E - OPEVAL (OT-IIA2)					
Start	Sep 2000	Mar 2001	Mar 2001	Mar 2001	
Complete	Nov 2000	May 2001	May 2001	May 2001	
Organic Support Date	Oct 2001	Oct 2001	Oct 2001	Oct 2001	
FOT&E-1 (DT-IIIA/OT-IIIA) E-2C					
Start	Jan 2002	Jan 2002	Jan 2002	Jan 2002	
Complete	Aug 2002	Nov 2002	Nov 2002	Nov 2002	
Milestone III	Apr 2002	Apr 2002	Apr 2002	Apr 2002	
Full Rate Production Contract Award	May 2002	Apr 2002	Apr 2002	Apr 2002	
FOT&E-2 (DT-IIIB/OT-IIIB) E-2C					
Start	Mar 2003	Mar 2004	Mar 2004	Mar 2004	
Complete	Jul 2003	Apr 2004	Apr 2004	Apr 2004	
Full Operational Capability	Dec 2003	May 2005	May 2005	May 2005	
Airborne IOC	Dec 2003	May 2005	May 2005	May 2005	
AN/USG-3B Full Rate Production Decision for E-2D	N/A	Apr 2014	Apr 2014	Apr 2014	(Ch-1)

Change Explanations

(Ch-1) The Assistant Secretary of the Navy (Research, Development, and Acquisition) Decision Memorandum dated April 14, 2014 authorized entrance into FRP for the CEC AN/USG-3B (E-2D Airborne Variant) System in support of E-2D Advanced Hawkeye FRP. This is a new event added per November 27, 2017 CEC APB Change 2 (Production)

Notes

AIR IOC and FOC events scheduled at the same time.

The CEC APB Change 2 (Production) was approved November 27, 2017. The CEC APB update was required for successful FRP Decision Review for the AN/USG-3B airborne variant in April 2014 and the approval of the Increment I Capability Production Document in August 2016. The Assistant Secretary of the Navy (Research, Development, and Acquisition) Decision Memorandum dated April 14, 2014 authorized delayed submission of the APB update after approval of the CEC Increment I CPD.

Performance

Performance Characteristics					
SAR Baseline Production Estimate	**Current APB Production Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**	
Operational Availability					
>=.95	N/A	N/A	N/A	N/A	(Ch-1)
Interoperability					
Information Exchange Requirements (IER)					
100% of top-level IERs	100% of top-level IERs.	100% of top-level IERs designated critical	100% of top-level IERs designated critical	100% of top-level IERs designated critical	
Track File Consistency					
Integration will improve track file consistency in each host system	CEC integration will improve track file consistency as measured in each host system	CEC integration must not degrade track file consistency (0% degradation)as measured in each host system	CEC integration will improve track file consistency as measured in each host system	CEC integration will improve track file consistency in each host system	

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

Requirements Reference

CEC Increment 1 CPD as validated by JROC memorandum dated August 12, 2016 which replaces the 2011 Change 1 CEC ORD, which was rescinded.

Change Explanations

(Ch-1) Updated to reflect the CEC APB Change 2 (Production) approved November 27, 2017.

Track to Budget

RDT&E

Appn	BA	PE
Navy	07	0206313M

Project	Name	
2273	Air Ops Cmd & Control (C2) Sys	(Shared)
Notes:	Shared with Composite Tracking Network	

Appn	BA	PE
Navy	04	0603658N

Project	Name	
2039	Cooperative Engagement Capability (CEC)	(Sunk)
Notes:	Reported Sunk as of FY 2017 PB.	
2616	Cooperative Engagement Capability (CEC)	(Sunk)

Appn	BA	PE
Navy	05	0604234N

Project	Name		
3051	Advanced Hawkeye	(Shared)	(Sunk)
Notes:	Shared with Advanced Hawkeye Program		
5EJ	Advanced Hawkeye	(Shared)	(Sunk)
Notes:	Shared with Advanced Hawkeye Program		

Appn	BA	PE
Navy	07	0607658N

Project	Name
2039	Cooperative Engagement Capability (CEC)

Appn	BA	PE
Army	07	0102419A

Project	Name		
55	Army Patriot JLENS	(Shared)	(Sunk)
Notes:	Shared with Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System		

Procurement

Appn	BA	PE
Navy	01	0206313M

Line Item	Name	
4640	Air Operations C2 Systems	(Shared)
Notes:	Shared with Composite Tracking Network	

Appn	BA	PE
Navy	04	0206313M

Line Item	Name		
4644	Common Aviation Command & Control System (CAC2S)	(Shared)	(Sunk)

Navy 1506 01 0204152N

Line Item	Name	
0195	E-2D AHE	(Shared)
Notes:	Shared with E-2C Hawkeye	

Navy 1611 02 0204112N

Line Item	Name		
2001	Carrier Replacement Program	(Shared)	(Sunk)
Notes:	Shared with CVN Replacement Program		
2086	CVN Refueling Overhauls	(Shared)	
Notes:	Shared with Refueling Complex Overhaul		

Navy 1611 02 0204222N

Line Item	Name		
2119	DDG 1000	(Shared)	(Sunk)
Notes:	Shared with DDG 1000 Program		

Navy 1611 05 0204228N

Line Item	Name		
2119	DDG 1000	(Shared)	(Sunk)
Notes:	Shared with DDG 1000 Program		

Navy 1611 02 0204222N

Line Item	Name	
2122	DDG-51	(Shared)
Notes:	Shared with DDG-51 Program	

Navy 1611 03 0204411N

Line Item	Name		
3035	LHD-1	(Shared)	(Sunk)
Notes:	Shared with Amphibious Assault Ships		
3036	LPD-17	(Shared)	
Notes:	Shared with Amphibious Assault Ships		
3041	LHA Replacement	(Shared)	
Notes:	Shared with Amphibious Assault Ships		

Navy 1810 01 0204228N

Line Item	Name		
0900	DDG Modernization	(Shared)	(Sunk)
Notes:	Shared with DDG Modernization Program - Reported as sunk as of 2017 PB.		

Navy 1810 01 0204162N

Line Item	Name	
0960	CG Modernization	(Shared)
Notes:	Shared with Cruiser Modernization Program.	

Navy 1810 02 0204228N

Line Item	Name
2606	Cooperative Engagement Capability (CEC)

Navy 1810 02 0204221N

Line Item	Name		
2606	Cooperative Engagement Capability (CEC)	(Shared)	(Sunk)

Notes: Shared in PB19

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2002 $M			BY 2002 $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	2028.1	3131.1	3444.2	3246.0	1946.5	3378.0	3548.0
Procurement	2095.2	1798.3	1978.1	1783.1	2364.2	2189.9	2171.2
Flyaway	--	--	--	1559.3	--	--	1884.4
Recurring	--	--	--	1559.3	--	--	1884.4
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	223.8	--	--	286.8
Other Support	--	--	--	223.8	--	--	286.8
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	4123.3	4929.4	N/A	5029.1	4310.7	5567.9	5719.2

Current APB Cost Estimate Reference

Change 1 to the Department of the Navy Component Cost Position (CCP) for the CEC. dated October 10, 2017

Cost Notes

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

Total Quantity			
Quantity	SAR Baseline Production Estimate	Current APB Production	Current Estimate
RDT&E	16	30	30
Procurement	256	270	270
Total	272	300	300

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	2783.5	94.7	131.8	142.2	148.4	126.2	121.2	0.0	3548.0
Procurement	1675.5	74.2	91.8	64.1	74.5	66.1	66.0	59.0	2171.2
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2019 Total	4459.0	168.9	223.6	206.3	222.9	192.3	187.2	59.0	5719.2
PB 2018 Total	4436.7	170.8	195.2	174.8	171.7	174.6	68.5	53.6	5445.9
Delta	22.3	-1.9	28.4	31.5	51.2	17.7	118.7	5.4	273.3

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	30	0	0	0	0	0	0	0	0	30
Production	0	196	10	14	11	13	13	7	6	270
PB 2019 Total	30	196	10	14	11	13	13	7	6	300
PB 2018 Total	30	197	9	11	6	7	7	6	10	283
Delta	0	-1	1	3	5	6	6	1	-4	17

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
1994	--	--	--	--	--	--	203.2
1995	--	--	--	--	--	--	154.1
1996	--	--	--	--	--	--	256.4
1997	--	--	--	--	--	--	224.7
1998	--	--	--	--	--	--	200.8
1999	--	--	--	--	--	--	189.8
2000	--	--	--	--	--	--	179.8
2001	--	--	--	--	--	--	173.4
2002	--	--	--	--	--	--	106.7
2003	--	--	--	--	--	--	107.1
2004	--	--	--	--	--	--	91.1
2005	--	--	--	--	--	--	114.0
2006	--	--	--	--	--	--	99.8
2007	--	--	--	--	--	--	55.0
2008	--	--	--	--	--	--	53.4
2009	--	--	--	--	--	--	44.2
2010	--	--	--	--	--	--	65.8
2011	--	--	--	--	--	--	59.6
2012	--	--	--	--	--	--	60.0
2013	--	--	--	--	--	--	52.5
2014	--	--	--	--	--	--	60.0
2015	--	--	--	--	--	--	42.6
2016	--	--	--	--	--	--	73.8
2017	--	--	--	--	--	--	78.7
2018	--	--	--	--	--	--	94.7
2019	--	--	--	--	--	--	131.8
2020	--	--	--	--	--	--	142.2
2021	--	--	--	--	--	--	148.4
2022	--	--	--	--	--	--	126.2
2023	--	--	--	--	--	--	121.2
Subtotal	22	--	--	--	--	--	3511.0

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2002 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1994	--	--	--	--	--	--	224.2
1995	--	--	--	--	--	--	166.8
1996	--	--	--	--	--	--	272.9
1997	--	--	--	--	--	--	236.3
1998	--	--	--	--	--	--	209.4
1999	--	--	--	--	--	--	195.7
2000	--	--	--	--	--	--	182.7
2001	--	--	--	--	--	--	173.8
2002	--	--	--	--	--	--	105.9
2003	--	--	--	--	--	--	104.7
2004	--	--	--	--	--	--	86.7
2005	--	--	--	--	--	--	105.7
2006	--	--	--	--	--	--	89.7
2007	--	--	--	--	--	--	48.3
2008	--	--	--	--	--	--	46.0
2009	--	--	--	--	--	--	37.6
2010	--	--	--	--	--	--	55.2
2011	--	--	--	--	--	--	48.8
2012	--	--	--	--	--	--	48.3
2013	--	--	--	--	--	--	41.8
2014	--	--	--	--	--	--	47.2
2015	--	--	--	--	--	--	33.1
2016	--	--	--	--	--	--	56.3
2017	--	--	--	--	--	--	59.1
2018	--	--	--	--	--	--	69.9
2019	--	--	--	--	--	--	95.5
2020	--	--	--	--	--	--	101.1
2021	--	--	--	--	--	--	103.4
2022	--	--	--	--	--	--	86.2
2023	--	--	--	--	--	--	81.2
Subtotal	22	--	--	--	--	--	3213.5

Annual Funding 2040 | RDT&E | Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1999	--	--	--	--	--	--	9.7
2000	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	--
2002	--	--	--	--	--	--	--
2003	--	--	--	--	--	--	--
2004	--	--	--	--	--	--	--
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	8.6
2010	--	--	--	--	--	--	5.2
2011	--	--	--	--	--	--	5.0
2012	--	--	--	--	--	--	5.6
2013	--	--	--	--	--	--	2.4
2014	--	--	--	--	--	--	0.5
Subtotal	8	--	--	--	--	--	37.0

Annual Funding 2040 | RDT&E | Research, Development, Test, and Evaluation, Army							
Fiscal Year	Quantity	BY 2002 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1999	--	--	--	--	--	--	10.0
2000	--	--	--	--	--	--	--
2001	--	--	--	--	--	--	--
2002	--	--	--	--	--	--	--
2003	--	--	--	--	--	--	--
2004	--	--	--	--	--	--	--
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	7.3
2010	--	--	--	--	--	--	4.3
2011	--	--	--	--	--	--	4.1
2012	--	--	--	--	--	--	4.5
2013	--	--	--	--	--	--	1.9
2014	--	--	--	--	--	--	0.4
Subtotal	8	--	--	--	--	--	32.5

Annual Funding 1109 | Procurement | Procurement, Marine Corps							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2008	--	--	3.0	--	3.0	--	3.0
2009	10	16.0	--	--	16.0	--	16.0
2010	--	--	--	--	--	--	--
2011	--	--	11.3	--	11.3	--	11.3
2012	--	--	3.8	--	3.8	--	3.8
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	--
2015	--	--	1.9	--	1.9	--	1.9
2016	--	--	0.7	--	0.7	--	0.7
2017	--	--	1.2	--	1.2	--	1.2
2018	--	--	8.4	--	8.4	--	8.4
2019	--	--	8.1	--	8.1	--	8.1
2020	--	--	3.6	--	3.6	--	3.6
Subtotal	10	16.0	42.0	--	58.0	--	58.0

Annual Funding 1109 | Procurement | Procurement, Marine Corps							
Fiscal Year	Quantity	BY 2002 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2008	--	--	2.6	--	2.6	--	2.6
2009	10	13.5	--	--	13.5	--	13.5
2010	--	--	--	--	--	--	--
2011	--	--	9.2	--	9.2	--	9.2
2012	--	--	3.0	--	3.0	--	3.0
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	--
2015	--	--	1.5	--	1.5	--	1.5
2016	--	--	0.5	--	0.5	--	0.5
2017	--	--	0.9	--	0.9	--	0.9
2018	--	--	6.1	--	6.1	--	6.1
2019	--	--	5.8	--	5.8	--	5.8
2020	--	--	2.5	--	2.5	--	2.5
Subtotal	10	13.5	32.1	--	45.6	--	45.6

Annual Funding 1506 | Procurement | Aircraft 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
2000	6	35.0	--	--	35.0	--	35.0
2001	1	14.7	--	--	14.7	--	14.7
2002	5	27.6	--	--	27.6	--	27.6
2003	6	33.3	--	--	33.3	--	33.3
2004	6	27.9	--	--	27.9	--	27.9
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	2	7.7	--	--	7.7	--	7.7
2010	3	12.6	--	--	12.6	--	12.6
2011	5	16.3	--	--	16.3	--	16.3
2012	5	15.6	--	--	15.6	--	15.6
2013	5	14.9	--	--	14.9	--	14.9
2014	5	13.1	--	--	13.1	--	13.1
2015	5	16.0	--	--	16.0	--	16.0
2016	5	16.3	--	--	16.3	--	16.3
2017	6	19.9	--	--	19.9	--	19.9
2018	5	16.9	--	--	16.9	--	16.9
2019	4	13.8	--	--	13.8	--	13.8
2020	4	14.1	--	--	14.1	--	14.1
2021	4	14.3	--	--	14.3	--	14.3
2022	4	14.6	--	--	14.6	--	14.6
2023	4	14.9	--	--	14.9	--	14.9
2024	4	15.2	--	--	15.2	--	15.2
Subtotal	94	374.7	--	--	374.7	--	374.7

Annual Funding 1506 | Procurement | Aircraft Procurement, Navy							
Fiscal Year	Quantity	BY 2002 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2000	6	35.1	--	--	35.1	--	35.1
2001	1	14.6	--	--	14.6	--	14.6
2002	5	27.0	--	--	27.0	--	27.0
2003	6	32.0	--	--	32.0	--	32.0
2004	6	26.1	--	--	26.1	--	26.1
2005	--	--	--	--	--	--	--
2006	--	--	--	--	--	--	--
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	2	6.5	--	--	6.5	--	6.5
2010	3	10.4	--	--	10.4	--	10.4
2011	5	13.2	--	--	13.2	--	13.2
2012	5	12.4	--	--	12.4	--	12.4
2013	5	11.7	--	--	11.7	--	11.7
2014	5	10.2	--	--	10.2	--	10.2
2015	5	12.3	--	--	12.3	--	12.3
2016	5	12.3	--	--	12.3	--	12.3
2017	6	14.7	--	--	14.7	--	14.7
2018	5	12.3	--	--	12.3	--	12.3
2019	4	9.9	--	--	9.9	--	9.9
2020	4	9.9	--	--	9.9	--	9.9
2021	4	9.8	--	--	9.8	--	9.8
2022	4	9.8	--	--	9.8	--	9.8
2023	4	9.8	--	--	9.8	--	9.8
2024	4	9.8	--	--	9.8	--	9.8
Subtotal	94	309.8	--	--	309.8	--	309.8

Annual Funding 1611 | Procurement | Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1995	1	13.9	--	--	13.9	1.6	15.5
1996	1	11.3	--	--	11.3	0.1	11.4
1997	--	--	--	--	--	--	--
1998	3	31.8	--	--	31.8	3.2	35.0
1999	1	9.0	--	--	9.0	0.9	9.9
2000	2	14.3	--	--	14.3	1.7	16.0
2001	2	12.3	--	--	12.3	1.1	13.4
2002	2	15.4	--	--	15.4	1.7	17.1
2003	1	5.8	--	--	5.8	0.8	6.6
2004	1	6.3	--	--	6.3	0.6	6.9
2005	1	7.6	--	--	7.6	0.6	8.2
2006	2	12.6	--	--	12.6	1.3	13.9
2007	3	16.8	--	--	16.8	5.9	22.7
2008	2	12.8	--	--	12.8	3.3	16.1
2009	3	13.8	--	--	13.8	6.4	20.2
2010	1	6.9	--	--	6.9	0.7	7.6
2011	3	12.1	--	--	12.1	4.9	17.0
2012	2	8.6	--	--	8.6	3.3	11.9
2013	5	24.1	--	--	24.1	6.2	30.3
2014	1	5.0	--	--	5.0	1.4	6.4
2015	2	8.8	--	--	8.8	2.4	11.2
2016	5	30.0	--	--	30.0	6.2	36.2
2017	4	23.5	--	--	23.5	6.5	30.0
2018	3	11.1	--	--	11.1	6.1	17.2
2019	4	19.0	--	--	19.0	3.6	22.6
2020	2	8.9	--	--	8.9	2.5	11.4
2021	4	25.5	--	--	25.5	2.6	28.1
2022	3	15.1	--	--	15.1	2.6	17.7
2023	3	15.4	--	--	15.4	2.6	18.0
2024	2	11.0	--	--	11.0	1.2	12.2
Subtotal	69	408.7	--	--	408.7	82.0	490.7

Annual Funding 1611 | Procurement | Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	BY 2002 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1995	1	14.7	--	--	14.7	1.7	16.4
1996	1	11.8	--	--	11.8	0.1	11.9
1997	--	--	--	--	--	--	--
1998	3	32.0	--	--	32.0	3.2	35.2
1999	1	8.9	--	--	8.9	0.9	9.8
2000	2	13.8	--	--	13.8	1.7	15.5
2001	2	11.5	--	--	11.5	1.0	12.5
2002	2	14.3	--	--	14.3	1.6	15.9
2003	1	5.1	--	--	5.1	0.7	5.8
2004	1	5.3	--	--	5.3	0.5	5.8
2005	1	6.2	--	--	6.2	0.5	6.7
2006	2	9.9	--	--	9.9	1.0	10.9
2007	3	12.6	--	--	12.6	4.4	17.0
2008	2	9.3	--	--	9.3	2.4	11.7
2009	3	9.7	--	--	9.7	4.5	14.2
2010	1	4.7	--	--	4.7	0.5	5.2
2011	3	8.0	--	--	8.0	3.2	11.2
2012	2	5.5	--	--	5.5	2.2	7.7
2013	5	15.2	--	--	15.2	4.0	19.2
2014	1	3.1	--	--	3.1	0.9	4.0
2015	2	5.4	--	--	5.4	1.4	6.8
2016	5	18.0	--	--	18.0	3.7	21.7
2017	4	13.9	--	--	13.9	3.8	17.7
2018	3	6.4	--	--	6.4	3.6	10.0
2019	4	10.8	--	--	10.8	2.0	12.8
2020	2	5.0	--	--	5.0	1.3	6.3
2021	4	13.9	--	--	13.9	1.4	15.3
2022	3	8.1	--	--	8.1	1.4	9.5
2023	3	8.1	--	--	8.1	1.3	9.4
2024	2	5.7	--	--	5.7	0.6	6.3
Subtotal	69	296.9	--	--	296.9	55.5	352.4

Annual Funding 1810 | Procurement | Other 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
1998	5	55.2	--	--	55.2	12.1	67.3
1999	5	79.7	--	--	79.7	1.7	81.4
2000	3	53.2	--	--	53.2	6.0	59.2
2001	6	36.4	--	--	36.4	--	36.4
2002	4	77.6	--	--	77.6	6.4	84.0
2003	6	64.9	--	--	64.9	6.1	71.0
2004	4	60.4	--	--	60.4	5.8	66.2
2005	3	60.9	--	--	60.9	6.2	67.1
2006	3	21.2	--	--	21.2	3.8	25.0
2007	5	34.4	--	--	34.4	3.6	38.0
2008	4	33.1	--	--	33.1	5.8	38.9
2009	4	29.3	--	--	29.3	4.9	34.2
2010	5	42.1	--	--	42.1	7.9	50.0
2011	5	47.7	--	--	47.7	13.7	61.4
2012	--	--	40.2	--	40.2	--	40.2
2013	2	20.2	--	--	20.2	11.2	31.4
2014	2	19.9	--	--	19.9	15.7	35.6
2015	4	24.3	--	--	24.3	36.5	60.8
2016	1	11.2	--	--	11.2	16.9	28.1
2017	2	17.8	--	--	17.8	9.2	27.0
2018	2	19.6	--	--	19.6	12.1	31.7
2019	6	28.1	--	--	28.1	19.2	47.3
2020	5	35.0	--	--	35.0	--	35.0
2021	5	32.1	--	--	32.1	--	32.1
2022	6	33.8	--	--	33.8	--	33.8
2023	--	--	33.1	--	33.1	--	33.1
2024	--	--	31.6	--	31.6	--	31.6
Subtotal	97	938.1	104.9	--	1043.0	204.8	1247.8

Annual Funding 1810 | Procurement | Other Procurement, Navy							
Fiscal Year	Quantity	BY 2002 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1998	5	57.3	--	--	57.3	12.5	69.8
1999	5	81.6	--	--	81.6	1.8	83.4
2000	3	53.7	--	--	53.7	6.1	59.8
2001	6	36.3	--	--	36.3	--	36.3
2002	4	76.3	--	--	76.3	6.3	82.6
2003	6	62.6	--	--	62.6	5.9	68.5
2004	4	56.9	--	--	56.9	5.4	62.3
2005	3	55.8	--	--	55.8	5.6	61.4
2006	3	18.8	--	--	18.8	3.4	22.2
2007	5	29.8	--	--	29.8	3.2	33.0
2008	4	28.3	--	--	28.3	4.9	33.2
2009	4	24.7	--	--	24.7	4.1	28.8
2010	5	34.8	--	--	34.8	6.5	41.3
2011	5	38.9	--	--	38.9	11.1	50.0
2012	--	--	32.2	--	32.2	--	32.2
2013	2	16.0	--	--	16.0	8.8	24.8
2014	2	15.5	--	--	15.5	12.3	27.8
2015	4	18.7	--	--	18.7	28.2	46.9
2016	1	8.5	--	--	8.5	12.8	21.3
2017	2	13.3	--	--	13.3	6.8	20.1
2018	2	14.4	--	--	14.4	8.8	23.2
2019	6	20.2	--	--	20.2	13.8	34.0
2020	5	24.7	--	--	24.7	--	24.7
2021	5	22.2	--	--	22.2	--	22.2
2022	6	22.9	--	--	22.9	--	22.9
2023	--	--	22.0	--	22.0	--	22.0
2024	--	--	20.6	--	20.6	--	20.6
Subtotal	97	832.2	74.8	--	907.0	168.3	1075.3

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	3/2/1998	10/31/2013
Approved Quantity	7	84
Reference	LRIP 1 ADM	LRIP 14 ADM
Start Year	1998	1998
End Year	1998	2013

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the requirements to meet ship installation schedules, outfit Land Based Test Sites in preparation for completion of Operational Testing (OT), and to maintain the Minimum Sustaining Rate for production of CEC systems pending completion of OT and entry into FRP.

Foreign Military Sales

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

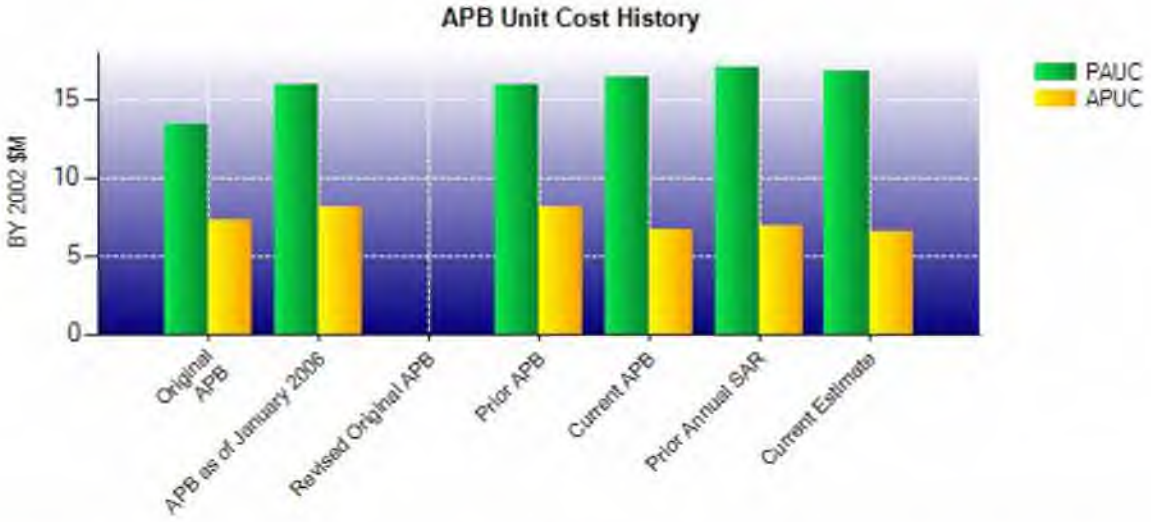
Nuclear Costs

None

Unit Cost

Current UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2002 $M Current UCR Baseline (Nov 2017 APB)	BY 2002 $M Current Estimate (Dec 2017 SAR)	% Change
Program Acquisition Unit Cost			
Cost	4929.4	5029.1	
Quantity	300	300	
Unit Cost	16.431	16.764	+2.03
Average Procurement Unit Cost			
Cost	1798.3	1783.1	
Quantity	270	270	
Unit Cost	6.660	6.604	-0.84

Original UCR Baseline and Current Estimate (Base-Year Dollars)			
Item	BY 2002 $M Original UCR Baseline (Jul 1995 APB)	BY 2002 $M Current Estimate (Dec 2017 SAR)	% Change
Program Acquisition Unit Cost			
Cost	2443.4	5029.1	
Quantity	183	300	
Unit Cost	13.352	16.764	+25.55
Average Procurement Unit Cost			
Cost	1262.8	1783.1	
Quantity	174	270	
Unit Cost	7.257	6.604	-9.00



APB Unit Cost History					
Item	Date	BY 2002 $M		TY $M	
		PAUC	APUC	PAUC	APUC
Original APB	Jul 1995	13.326	7.257	14.061	8.222
APB as of January 2006	Jun 2004	16.010	8.184	16.814	9.235
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	Jun 2004	16.010	8.184	16.814	9.235
Current APB	Nov 2017	16.431	6.660	18.560	8.111
Prior Annual SAR	Dec 2016	17.087	6.911	19.243	8.400
Current Estimate	Dec 2017	16.764	6.604	19.064	8.041

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	
14.060	-0.656	-2.840	0.590	0.420	5.010	0.000	-0.736	1.788	15.848

Current SAR Baseline to Current Estimate (TY $M)									
PAUC Production Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
15.848	0.217	-1.523	2.790	1.285	0.421	0.000	0.026	3.216	19.064

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	
8.220	-0.532	-0.797	0.291	-0.439	1.761	0.000	0.731	1.015	9.235

Current SAR Baseline to Current Estimate (TY $M)									
APUC Production Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
9.235	0.157	-0.719	0.700	-0.739	-0.609	0.000	0.016	-1.194	8.041

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone II	N/A	May 1995	May 1995	May 1995
Milestone III	N/A	Oct 1998	Apr 2002	Apr 2002
IOC	N/A	Sep 1996	Sep 1996	Sep 1996
Total Cost (TY $M)	N/A	2573.1	4310.7	5719.2
Total Quantity	N/A	183	272	300
PAUC	N/A	14.061	15.848	19.064

IOC identified above refers to the CEC Shipboard configuration, AN/USG-2. FOC occurred in conjunction with Airborne IOC in May 2005.

Cost Variance

Summary TY $M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	1946.5	2364.2	--	4310.7
Previous Changes				
Economic	+26.6	+46.2	--	+72.8
Quantity	+51.6	-114.5	--	-62.9
Schedule	+526.7	+178.4	--	+705.1
Engineering	+478.7	-178.9	--	+299.8
Estimating	+286.9	-183.5	--	+103.4
Other	--	--	--	--
Support	+3.6	+13.4	--	+17.0
Subtotal	+1374.1	-238.9	--	+1135.2
Current Changes				
Economic	-3.8	-3.9	--	-7.7
Quantity	--	+49.7	--	+49.7
Schedule	+121.2	+10.6	--	+131.8
Engineering	+106.2	-20.5	--	+85.7
Estimating	+3.8	+19.2	--	+23.0
Other	--	--	--	--
Support	--	-9.2	--	-9.2
Subtotal	+227.4	+45.9	--	+273.3
Total Changes	+1601.5	-193.0	--	+1408.5
CE - Cost Variance	3548.0	2171.2	--	5719.2
CE - Cost & Funding	3548.0	2171.2	--	5719.2

Summary BY 2002 $M				
Item	RDT&E	Procurement	MILCON	Total
SAR Baseline (Production Estimate)	2028.1	2095.2	--	4123.3
Previous Changes				
Economic	--	--	--	--
Quantity	+47.8	-143.3	--	-95.5
Schedule	+370.0	+56.3	--	+426.3
Engineering	+418.9	-129.9	--	+289.0
Estimating	+219.4	-24.0	--	+195.4
Other	--	--	--	--
Support	+2.8	-105.8	--	-103.0
Subtotal	+1058.9	-346.7	--	+712.2
Current Changes				
Economic	--	--	--	--
Quantity	--	+33.5	--	+33.5
Schedule	+80.6	+9.4	--	+90.0
Engineering	+75.6	-13.9	--	+61.7
Estimating	+2.8	+11.4	--	+14.2
Other	--	--	--	--
Support	--	-5.8	--	-5.8
Subtotal	+159.0	+34.6	--	+193.6
Total Changes	+1217.9	-312.1	--	+905.8
CE - Cost Variance	3246.0	1783.1	--	5029.1
CE - Cost & Funding	3246.0	1783.1	--	5029.1

Previous Estimate: December 2016

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-3.8
Schedule variance due to shifting a development effort from FY 2022 to FY 2023. (Schedule)	+80.6	+121.2
Additional funding for Digital Warfare Office requirements. (Engineering)	+19.9	+26.7
Additional funding for Cyber Domain requirements. (Engineering)	+21.5	+30.2
Additional funding for Cyber Resiliency requirements. (Engineering)	+34.2	+49.3
Revised estimate to reflect application of new outyear escalation indices. (Estimating)	+2.1	+2.9
Adjustment for current and prior escalation. (Estimating)	+0.7	+0.9
RDT&E Subtotal	+159.0	+227.4

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-3.9
Additional quantity variance due to the addition of 20 Common Array Block (CAB) shipboard units (Other Procurement, Navy (OPN)). (Subtotal)	+61.4	+88.9
Additional quantity variance due to the addition of 20 CAB (OPN). (Quantity)	(+79.2)	(+114.7)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(+8.9)	(+12.9)
Allocation to Engineering resulting from Quantity change. (Engineering) (QR)	(-13.1)	(-18.9)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(-13.6)	(-19.8)
Additional quantity variance due to increase of 20 CAB back fits (OPN). (Quantity)	-50.5	-74.3
Total Quantity variance resulting from an increase of 1 LPD29 from 68 to 69 (Shipbuilding and Conversion, Navy (SCN)). (Subtotal)	+3.7	+7.2
Increase in quantity variance due to an increase of 1 LPD29 SCN from 68 to 69 (SCN). (Quantity)	(+4.8)	(+9.3)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(+0.5)	(+1.0)
Allocation to Engineering resulting from Quantity change. (Engineering) (QR)	(-0.8)	(-1.6)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(-0.8)	(-1.5)
Rephasing of DDG51 procurement buy profile between FY 2019 to FY 2024 and revised estimates due to budget submissions (SCN). (Schedule)	0.0	-3.2
Revised estimate to reflect refinement of shipbuilding estimates (SCN). (Estimating)	+2.7	+5.8
Rephase of one Guided Missile Cruiser Modernization (CG66) procurement buy from FY 2019 to FY 2018 (OPN). (Schedule) (Schedule)	0.0	-0.1
Adjustment for current and prior escalation. (Estimating)	+0.7	+0.4
Revised estimate to reflect application of new outyear escalation indices. (Estimating)	+0.2	+0.2
Revised estimate to reflect application of new year outyear escalation indices (OPN). (Estimating)	-0.1	+0.1
Rephase of non-end item related funding (OPN). (Estimating)	+22.3	+34.0
Adjustment for current and prior escalation. (Support)	+0.1	+0.9
Decrease in Other Support due to acceleration of DDG 51 buy profile (SCN). (Support)	-2.1	-4.7
Decrease in Other Support reduction in Guided Missile Cruiser Modernization procurement profile (OPN). (Support)	-3.8	-5.4
Procurement Subtotal	+34.6	+45.9

(QR) Quantity Related

Contracts

Contract Identification

Appropriation: Procurement
Contract Name: CEC Production (FY 2012 - FY 2016)
Contractor: Raytheon - Network Centric Systems
Contractor Location: 8333 Bryan Dairy Road
Largo, FL 33777-1444
Contract Number: N00024-12-C-5231/0
Contract Type: Firm Fixed Price (FFP)
Award Date: September 28, 2012
Definitization Date: May 01, 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
20.3	N/A	7	150.9	N/A	28	267.1	267.1

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to incorporating following year production efforts.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP) contract.

General Contract Variance Explanation

Cost and Schedule Variance reporting is not required on this (FFP) contract.

Notes

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

Contract Identification

Appropriation: RDT&E
Contract Name: Design Agent/Engineering Services (DA/ES) (FY 2014 - FY 2018)
Contractor: Raytheon - Network Centric Systems
Contractor Location: 8333 Bryan Dairy Road
Largo, FL 33777-1444
Contract Number: N00024-13-C-5212/0
Contract Type: Cost Plus Fixed Fee (CPFF)
Award Date: September 27, 2013
Definitization Date: September 27, 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
32.8	N/A	0	320.4	N/A	0	345.5	345.5

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to exercising options for FY 2014, FY 2015, FY 2016, FY 2017, and FY 2018 Design Agent/Engineering Services (DA/ES) efforts.

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

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to increased complexity of SIPRNet and Network work.

The unfavorable net change in the schedule variance is due to a later than planned receipt of the Lynx-OS maintenance, MIT maintenance, and SIPRNet invoices.

Notes

The FY 2014 - FY 2018 DA/ES contract is a follow-on contract to the FY 2008 - FY 2013 DA/ES contract and includes labor, facilities, engineering, and technical support services required for CEC System DA Services, support equipment, and computer program installations as well as Engineering and Technical services in support of existing CEC assets, Common Equipment Sets, auxiliary equipment, and stand-alone equipment.

After award of the new option year, the contractor has 120 days to submit the EVM report. Report is expected March 2018.

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

Contract Identification

Appropriation: Procurement
Contract Name: CEC Production (FY 2015- FY2021)
Contractor: DRS Laurel Technologies
Contractor Location: 246 Airport Rd
Johnstown, PA 15904-7224
Contract Number: N00024-15-C-5228/0
Contract Type: Firm Fixed Price (FFP)
Award Date: February 25, 2015
Definitization Date: February 25, 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
2.0	N/A	2	48.5	N/A	35	227.0	227.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to increase of thirty-three CEC systems procured since initial contract.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP) contract.

Notes

The FFP portion of this contract includes production and testing for AN/USG-2B (Shipboard), AN/USG-3B (Airborne), AN/USG-4B (USMC) CEC systems and back fit kits to convert AN/USG -2/2A to AN/USG-2B. The Cost Plus Fixed Fee portion of the contract includes Engineering Services in support of the manufacture, assembly, and testing of the CEC production systems under the contract.

The Contract Current Contract Quantity changed from 33 to 35 to reflect current quantity on contract.

Contract Identification

Appropriation: RDT&E
Contract Name: Common Array Block (CAB) Antenna Development and Production
Contractor: Raytheon
Contractor Location: 8333 Bryan Dairy Road
Largo, FL 33777-1444
Contract Number: N00024-13-C-5230/0
Contract Type: Cost Plus Incentive Fee (CPIF)
Award Date: September 27, 2013
Definitization Date: September 27, 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
7.3	N/A	6	37.2	N/A	6	59.1	59.1

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to exercising Engineering Development Model options

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/30/2018)	-8.5	-1.5
Previous Cumulative Variances	-4.6	-3.2
Net Change	-3.9	+1.7

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to technical challenges encountered during the design and Transmit/Receive (T/R) Module prototype test efforts, plus funding gaps caused by Continuing Resolution driven funding movement delays. The Critical Design Review (CDR) tasks were completed on April 17, 2017. There was a cost overrun for CDR efforts and the Engineering Design Model (EDM) efforts are currently in an overrun status. The recent Pre-Production Unit (PPU) re-pricing proposal submitted by Raytheon reflected a substantial price increase over previous proposals and SEA 05C cost estimates. NAVSEA Contracts is preparing to negotiate the CAB PPU repricing with Raytheon.

The favorable net change in the schedule variance is due to recovery efforts as long lead time Chassis material has been received for CAB Shipboard, originally planned for completion earlier in the year.

Notes

This contract includes labor, facilities, engineering and technical support services required for the design, engineering development, documentation, fabrication and test and production for the development and production of the next generation of the CAB antennas for the CEC System.

Contract Identification

Appropriation: Procurement
Contract Name: CEC Signal Data Processor (SDP) Production (FY2017 - FY 2022)
Contractor: DRS Laurel Technologies
Contractor Location: 246 Airport Road
Johnstown, PA 15904
Contract Number: N00024-17-C-5201/0
Contract Type: Firm Fixed Price (FFP)
Award Date: August 24, 2017
Definitization Date: August 24, 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
0.5	N/A	3	2.1	N/A	13	82.0	82.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to ten additional principle items in accordance with the latest authorized contract modification.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (FFP) contract.

General Contract Variance Explanation

Cost and Schedule Variance reporting is not required on the (FFP) contract.

Notes

This is the first time this contract is being reported.

This CEC SDP Production (FY 2017 - FY 2022) contract is a follow-on to the CEC SDP-S Production (FY 2011 - FY 2016) contract and includes the manufacture, assembly, test, and repair, of a SDP assembly for the Cooperative Engagement Transmission Processing Set.

Contract Identification

Appropriation: Procurement
Contract Name: CEC Signal Data Processor-Sierra (SDP-S) Production
Contractor: Sechan Electronics Inc
Contractor Location: 525 Furnace Hills Pike
Lititz, PA 17543-8902
Contract Number: N00024-12-D-5203/1
Contract Type: Indefinite Delivery Indefinite Quantity (IDIQ), Firm Fixed Price (FFP)
Award Date: December 20, 2011
Definitization Date: December 20, 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
13.8	N/A	84	64.2	N/A	321	64.2	64.2

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the award of Delivery Orders 0002, 0003, 0004, and 0005.

Cost and Schedule Variance Explanations

Cost and Schedule Variance reporting is not required on this (IDIQ/FFP) contract.

Notes

This is a Delivery Order contract to procure SDP-S. Production units are FFP, the engineering support services are Cost Plus Fixed-Fee. This is an IDIQ contract, therefore, the estimated ceiling price at completion is not applicable.

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

Deliveries and Expenditures

Deliveries				
Delivered to Date	Planned to Date	Actual to Date	Total Quantity	Percent Delivered
Development	30	30	30	100.00%
Production	162	189	270	70.00%
Total Program Quantity Delivered	192	219	300	73.00%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	5719.2	Years Appropriated	25
Expended to Date	4849.7	Percent Years Appropriated	80.65%
Percent Expended	84.80%	Appropriated to Date	4627.9
Total Funding Years	31	Percent Appropriated	80.92%

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

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	August 30, 2017
Source of Estimate:	SCP
Quantity to Sustain:	280
Unit of Measure:	System
Service Life per Unit:	20.00 Years
Fiscal Years in Service:	FY 1994 - FY 2046

The total quantity changed from 283 to 300. The total quantity to sustain is 280 since 20 systems are ship board back fits and do not require sustainment. There are shipboard AN/USG-2/2A/2B Shipboard or airborne AN/USG-3/3B variants. The unit of measure is any one of these variants.

The sustainment strategy costs includes: prime contractor and government in-service engineering support, continuing engineering support for Navy in-house facilities and software maintenance, depot repairs of CEC equipment, modification kit procurements and installations, and fleet recurring training.

Sustainment Strategy

Sustainment strategy efforts include: Maintenance and repair of CEC fielded systems (AN/USG-2/2A/2B, Land Based Test Sites, AN/USG-3/3B), Integrated Logistics Support, Software Trouble Reports, Original Equipment Manufacturer Design Agent support, In-Service Engineering, Diminishing Manufacturing Supply Material Shortages, and Obsolescence Management.

Antecedent Information

No Antecedent

Annual O&S Costs BY2002 $K		
Cost Element	**CEC Average Annual Cost Per System**	**No Antecedent (Antecedent) N/A**
Unit-Level Manpower	0.000	0.000
Unit Operations	8.100	0.000
Maintenance	116.900	0.000
Sustaining Support	63.100	0.000
Continuing System Improvements	195.000	0.000
Indirect Support	0.000	0.000
Other	0.000	0.000
Total	383.100	--

Item	Total O&S Cost $M			
	CEC			No Antecedent (Antecedent)
	Current Production APB Objective/Threshold		Current Estimate	
Base Year	1917.4	2109.1	1927.4	N/A
Then Year	2767.8	N/A	2767.8	N/A

Equation to Translate Annual Cost to Total Cost

An equation would not accurately depict the total cost since platform (Airborne/Shipboard) service is not always 20 years. The service life per platform (Airborne/Shipboard) varies anywhere from five years to 20 years dependent on the service life of the host ship.

O&S Cost Variance		
Category	**BY 2002 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2016 SAR	1898.9	
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	28.5	Additional PB 2018 software requirements increased the cost estimate.
Other	0.0	
Total Changes	28.5	
Current Estimate	1927.4	

Disposal Estimate Details

Date of Estimate: August 30, 2017

Source of Estimate: SCP

Disposal/Demilitarization Total Cost (BY 2002 $M): Total costs for disposal of all System are 34.5

Disposal/Demilitarization Total Cost changed from 40.5 to 34.5 due to a revised cost model used to account for various service life years per system and additional platforms.