



## 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 2015 President's Budget

Defense Acquisition Management  
Information Retrieval  
(DAMIR)

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## Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance  
APB - Acquisition Program Baseline  
APPN - Appropriation  
APUC - Average Procurement Unit Cost  
BA - Budget Authority/Budget Activity  
BY - Base Year  
DAMIR - Defense Acquisition Management Information Retrieval  
Dev Est - Development Estimate  
DoD - Department of Defense  
DSN - Defense Switched Network  
Econ - Economic  
Eng - Engineering  
Est - Estimating  
FMS - Foreign Military Sales  
FY - Fiscal Year  
IOC - Initial Operational Capability  
\$K - Thousands of Dollars  
LRIP - Low Rate Initial Production  
\$M - Millions of Dollars  
MILCON - Military Construction  
N/A - Not Applicable  
O&S - Operating and Support  
Oth - Other  
PAUC - Program Acquisition Unit Cost  
PB - President's Budget  
PE - Program Element  
Proc - Procurement  
Prod Est - Production Estimate  
QR - Quantity Related  
Qty - Quantity  
RDT&E - Research, Development, Test, and Evaluation  
SAR - Selected Acquisition Report  
Sch - Schedule  
Spt - Support  
TBD - To Be Determined  
TY - Then Year  
UCR - Unit Cost Reporting

## Program Information

**Program Name**

Cooperative Engagement Capability (CEC)

**DoD Component**

Navy

**Joint Participants**

United States Air Force; United States Army

## Responsible Office

**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**

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated June 16, 2004

## Mission and Description

### Mission

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.

### Description

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, Aegis Guided Missile Destroyers, Aircraft Carriers and Amphibious Transport Dock/Amphibious Assault ships

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

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

AN/USG-5: United States Army JLENS platform

AN/USG-6/7/8: FMS

## Executive Summary

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.

The CEC program achieved AN/USG-2 (shipboard) Full Rate Production (FRP) in April 2002 and is continuing development efforts to keep pace with the security threats and ensure producibility. Currently, the focus is on upgrading legacy configurations with the current AN/USG-2B configuration. The program remains focused on ensuring compatibility, appropriate maintenance, and ultimate disposal.

The Under Secretary of Defense (Acquisition, Technology and Logistics) memorandum of May 25, 2012 re-designated CEC from an Acquisition Category (ACAT) ID to an ACAT IC program with the Navy as lead component and authorized the Navy to procure the third increment of LRIP units for the CEC AN/USG-3 airborne variant. The AN/USG-3 FRP Decision Review was held October 24, 2013 and the CEC Program received authorization to procure five AN/USG-3B (CEC E-2D airborne variant) systems to support E-2D FRP Lot 1 aircraft production. A tailored AN/USG-3B FRP is planned for third quarter FY 2014 to address actions assigned relating to software, funding, Clinger-Cohen Act compliance, anti-jamming technical fixes, and support of the E-2D FRP Lot 2 aircraft production schedule.

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 evolutionary trends.

The CEC program achieved a Milestone III FRP decision in April 2002 for the shipboard variant. The program received incremental LRIP authority for the airborne system starting in FY 2002 with the FRP for the airborne variant planned for FY 2014.

CEC Track File Concurrence (TFC) software issues were documented in the CEC Operational Test (OT)-IIIF report from the Director of Operational Test and Evaluation from September 16, 2013. CEC Dual Tracks software issues documented in CEC OT-IIIF brief from Commander Operational Test and Evaluation Force were investigated as part of the Accelerated Mid-Term Interoperability Improvement Project (AMIIP) improvements. Root cause of TFC and Dual Track issues investigated and root cause identified. TFC updates are being fielded in FY 2014 with additional improvements planned for delivery in FY 2016. The AMIIP improvements, including Dual Tracks improvements, are currently being installed on surface ships and E-2Cs and are planned for delivery to E-2D aircraft in FY 2017.

### Threshold Breaches

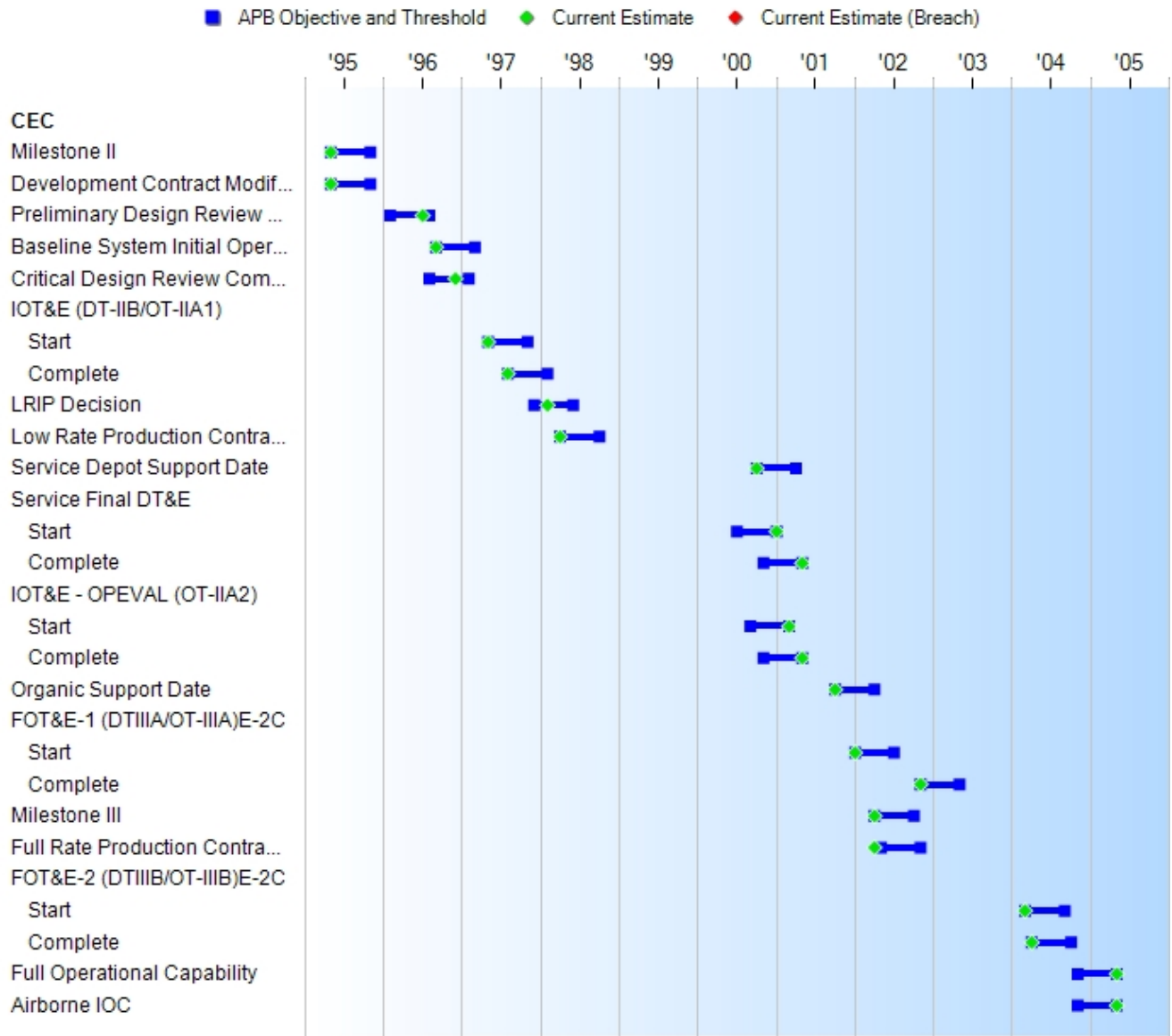
APB Breaches		
<b>Schedule</b>		<input type="checkbox"/>
<b>Performance</b>		<input type="checkbox"/>
<b>Cost</b>	RDT&E	<input checked="" type="checkbox"/>
	Procurement	<input type="checkbox"/>
	MILCON	<input type="checkbox"/>
	Acq O&M	<input type="checkbox"/>
<b>O&amp;S Cost</b>		<input type="checkbox"/>
<b>Unit Cost</b>	PAUC	<input type="checkbox"/>
	APUC	<input type="checkbox"/>

### Explanation of Breach

This breach, reported in the December 2011 SAR, is based on an extension of the RDT&E program to FY 2017 in the FY 2013 PB. The May 31, 2012 Program Deviation Report noted the original APB only reflected RDT&E through 2007 at which time CEC would transition to Single Integrated Air Picture (SIAP). However, the April 8, 2009 Resource Management Decision 802 for the FY 2010 Budget Request terminated the SIAP Program.

Nunn-McCurdy Breaches		
<b>Current UCR Baseline</b>		
	PAUC	None
	APUC	None
<b>Original UCR Baseline</b>		
	PAUC	None
	APUC	None

# Schedule





Milestones	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Current Estimate
Milestone II	MAY 1995	MAY 1995	NOV 1995	MAY 1995
Development Contract Modification	MAY 1995	MAY 1995	NOV 1995	MAY 1995
Preliminary Design Review Complete	FEB 1996	FEB 1996	AUG 1996	JUL 1996
Baseline System Initial Operational Capability	SEP 1996	SEP 1996	MAR 1997	SEP 1996
Critical Design Review Complete	AUG 1996	AUG 1996	FEB 1997	DEC 1996
IOT&E (DT-IIB/OT-IIA1)				
Start	MAY 1997	MAY 1997	NOV 1997	MAY 1997
Complete	AUG 1997	AUG 1997	FEB 1998	AUG 1997
LRIP Decision	DEC 1997	DEC 1997	JUN 1998	FEB 1998
Low Rate Production Contract Award	APR 1998	APR 1998	OCT 1998	APR 1998
Service Depot Support Date	OCT 2000	OCT 2000	APR 2001	OCT 2000
Service Final DT&E				
Start	JUL 2000	JUL 2000	JAN 2001	JAN 2001
Complete	NOV 2000	NOV 2000	MAY 2001	MAY 2001
IOT&E - OPEVAL (OT-IIA2)				
Start	SEP 2000	SEP 2000	MAR 2001	MAR 2001
Complete	NOV 2000	NOV 2000	MAY 2001	MAY 2001
Organic Support Date	OCT 2001	OCT 2001	APR 2002	OCT 2001
FOT&E-1 (DTIIIA/OT-IIIA)E-2C				
Start	JAN 2002	JAN 2002	JUL 2002	JAN 2002
Complete	AUG 2002	NOV 2002	MAY 2003	NOV 2002
Milestone III	APR 2002	APR 2002	OCT 2002	APR 2002
Full Rate Production Contract Award	MAY 2002	MAY 2002	NOV 2002	APR 2002
FOT&E-2 (DTIIIB/OT-IIIB)E-2C				
Start	MAR 2003	MAR 2004	SEP 2004	MAR 2004
Complete	JUL 2003	APR 2004	OCT 2004	APR 2004
Full Operational Capability	DEC 2003	NOV 2004	MAY 2005	MAY 2005
Airborne IOC	DEC 2003	NOV 2004	MAY 2005	MAY 2005

<b>Change Explanations</b>
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None
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**Acronyms and Abbreviations**

DT - Developmental Test

DT&E - Developmental Test and Evaluation

FOT&E - Follow-on Test and Evaluation

IOT&E - Initial Operational Test and Evaluation

OPEVAL - Operational Evaluation

OT - Operational Test

## Performance

Characteristics	SAR Baseline Prod Est	Current APB Production Objective/Threshold		Demonstrated Performance	Current Estimate	(Ch-1)
Operational Availability	>=.95	>=.95	>=.90	>=.94	>=.91	
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 Source

Operational Requirements Document (ORD) dated January 31, 2002 and ORD Change 1 dated January 31, 2011

### Change Explanations

(Ch-1) Operational availability estimates continue to be above threshold. However, the current estimate for shipboard Operational Availability has changed from .95 to .91 due to variances in failure rates which change over time for all systems.

## Track to Budget

### General Memo

All APPNs and PEs have been updated to align with FY 2015 PB values.

Updated PE 0604234N from Project 3501 to Project 3051.

Project element Line Item 464017 reported as unsunk is this SAR due to the addition of FY 2014 funding as of FY 2015 PB. This Line Item was reported as sunk in the December 2012 SAR.

Project element Line Item 200100 reported as sunk.

Project element Line Item 090000 reported as sunk.

Project element Line Item 096000 reported as sunk.

### RDT&E

Appn	BA	PE	
Navy	1319	07	0206313M
	<b>Project</b>		<b>Name</b>
	C2273		Marine Corps Communication Systems/Marine Corps Communication Systems (Shared)
Navy	1319	04	0603658N
	<b>Project</b>		<b>Name</b>
	K2039		Cooperative Engagement Capability (CEC)
	K2616A		Cooperative Engagement Capability (CEC) (Sunk)
Navy	1319	05	0604234N
	<b>Project</b>		<b>Name</b>
	3051		Advanced Hawkeye (Shared)
	Y5EJ		Advanced Hawkeye (Shared) (Sunk)
Army	2040	07	0102419A
	<b>Project</b>		<b>Name</b>
	E55		Army Patriot JLENS (Shared)

### Procurement

Appn	BA	PE	
Navy	1109	01	0206313M
	<b>Line Item</b>		<b>Name</b>
	464017		Procurement, Marine Corps (Shared)
Navy	1506	01	0204152N
	<b>Line Item</b>		<b>Name</b>

019500			E-2C (Early Warning) HAWKEYE (MYP) (Shared)	
Navy	1611	02	0204112N	
	<b>Line Item</b>		<b>Name</b>	
	200100		CVN Replacement Program	(Shared) (Sunk)
	208600		Refueling Complex Overhaul	(Shared)
Navy	1611	02	0204222N	
	<b>Line Item</b>		<b>Name</b>	
	211900		DDG 1002	(Shared) (Sunk)
Navy	1611	05	0204228N	
	<b>Line Item</b>		<b>Name</b>	
	211900		DDG 1000, 1001	(Shared) (Sunk)
Navy	1611	02	0204222N	
	<b>Line Item</b>		<b>Name</b>	
	212200		DDG-51	(Shared)
Navy	1611	03	0204411N	
	<b>Line Item</b>		<b>Name</b>	
	303500		LHD-1	(Shared) (Sunk)
	303600		LPD-17	(Shared)
	304100		LHA 8	(Shared)
Navy	1810	01	0204228N	
	<b>Line Item</b>		<b>Name</b>	
	090000		DDG Modernization	(Shared) (Sunk)
Navy	1810	01	0204162N	
	<b>Line Item</b>		<b>Name</b>	
	096000		Cruiser Modernization	(Shared) (Sunk)
Navy	1810	02	0204221N	
	<b>Line Item</b>		<b>Name</b>	
	260600		Cooperative Engagement Capability (CEC)	(Sunk)
Navy	1810	02	0204228N	
	<b>Line Item</b>		<b>Name</b>	
	260600		Cooperative Engagement Capability (CEC)	

## Cost and Funding

### Cost Summary

#### Total Acquisition Cost and Quantity

Appropriation	BY2002 \$M			BY2002 \$M	TY \$M		
	SAR Baseline Prod Est	Current APB Production Objective/Threshold	Current Estimate		SAR Baseline Prod Est	Current APB Production Objective	Current Estimate
RDT&E	2028.1	2435.7	2679.3	<b>2804.6</b> <sup>1</sup>	1946.5	2394.3	2923.2
Procurement	2095.2	2095.2	2304.7	1559.8	2364.2	2364.2	1843.6
Flyaway	--	--	--	1343.4	--	--	1566.2
Recurring	--	--	--	1343.4	--	--	1566.2
Non Recurring	--	--	--	0.0	--	--	0.0
Support	--	--	--	216.4	--	--	277.4
Other Support	--	--	--	216.4	--	--	277.4
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	0.0	0.0	--	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	4123.3	4530.9	N/A	4364.4	4310.7	4758.5	4766.8

<sup>1</sup> APB Breach

Quantity	SAR Baseline Prod Est	Current APB Production	Current Estimate
RDT&E		16	27
Procurement		256	231
Total		272	261

## Cost and Funding

### Funding Summary

#### Appropriation and Quantity Summary FY2015 President's Budget / December 2013 SAR (TY\$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	2527.9	58.8	45.2	74.6	63.7	75.6	77.4	0.0	2923.2
Procurement	1356.2	59.0	57.6	60.6	68.7	66.0	61.1	114.4	1843.6
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 2015 Total	3884.1	117.8	102.8	135.2	132.4	141.6	138.5	114.4	4766.8
PB 2014 Total	3892.6	133.8	136.5	157.3	158.4	153.8	28.2	36.0	4696.6
Delta	-8.5	-16.0	-33.7	-22.1	-26.0	-12.2	110.3	78.4	70.2

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
Development	30	0	0	0	0	0	0	0	0	30
Production	0	154	8	7	9	10	9	7	27	231
PB 2015 Total	30	154	8	7	9	10	9	7	27	261
PB 2014 Total	30	156	7	8	10	12	11	8	10	252
Delta	0	-2	1	-1	-1	-2	-2	-1	17	9

## Cost and Funding

### Annual Funding By Appropriation

#### Annual Funding TY\$

#### 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
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	--	--	--	--	--	--	58.3
2015	--	--	--	--	--	--	45.2
2016	--	--	--	--	--	--	74.6
2017	--	--	--	--	--	--	63.7
2018	--	--	--	--	--	--	75.6
2019	--	--	--	--	--	--	77.4



<b>Subtotal</b>	<b>22</b>	--	--	--	--	--	<b>2886.2</b>
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## Annual Funding BY\$

## 1319 | RDT&amp;E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2002 \$M	Non End Item Recurring Flyaway BY 2002 \$M	Non Recurring Flyaway BY 2002 \$M	Total Flyaway BY 2002 \$M	Total Support BY 2002 \$M	Total Program BY 2002 \$M
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	--	--	--	--	--	--	41.6
2014	--	--	--	--	--	--	45.4
2015	--	--	--	--	--	--	34.5
2016	--	--	--	--	--	--	55.9
2017	--	--	--	--	--	--	46.8
2018	--	--	--	--	--	--	54.5
2019	--	--	--	--	--	--	54.7
<b>Subtotal</b>	<b>22</b>	--	--	--	--	--	<b>2772.1</b>

## Annual Funding TY\$

## 2040 | RDT&amp;E | Research, Development, Test, and Evaluation, Army

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
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
<b>Subtotal</b>	<b>8</b>	--	--	--	--	--	<b>37.0</b>

## Annual Funding BY\$

## 2040 | RDT&amp;E | Research, Development, Test, and Evaluation, Army

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2002 \$M	Non End Item Recurring Flyaway BY 2002 \$M	Non Recurring Flyaway BY 2002 \$M	Total Flyaway BY 2002 \$M	Total Support BY 2002 \$M	Total Program BY 2002 \$M
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
<b>Subtotal</b>	<b>8</b>	--	--	--	--	--	<b>32.5</b>

**Annual Funding TY\$**  
**1109 | Procurement | Procurement, Marine Corps**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway TY \$M</b>	<b>Non End Item Recurring Flyaway TY \$M</b>	<b>Non Recurring Flyaway TY \$M</b>	<b>Total Flyaway TY \$M</b>	<b>Total Support TY \$M</b>	<b>Total Program TY \$M</b>
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	--	--	1.8	--	1.8	--	1.8
<b>Subtotal</b>	<b>10</b>	<b>16.0</b>	<b>19.9</b>	<b>--</b>	<b>35.9</b>	<b>--</b>	<b>35.9</b>

**Annual Funding BY\$****1109 | Procurement | Procurement, Marine Corps**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway BY 2002 \$M</b>	<b>Non End Item Recurring Flyaway BY 2002 \$M</b>	<b>Non Recurring Flyaway BY 2002 \$M</b>	<b>Total Flyaway BY 2002 \$M</b>	<b>Total Support BY 2002 \$M</b>	<b>Total Program BY 2002 \$M</b>
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	--	--	1.4	--	1.4	--	1.4
<b>Subtotal</b>	<b>10</b>	<b>13.5</b>	<b>16.2</b>	<b>--</b>	<b>29.7</b>	<b>--</b>	<b>29.7</b>

**Annual Funding TY\$**  
**1506 | Procurement | Aircraft Procurement, Navy**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway TY \$M</b>	<b>Non End Item Recurring Flyaway TY \$M</b>	<b>Non Recurring Flyaway TY \$M</b>	<b>Total Flyaway TY \$M</b>	<b>Total Support TY \$M</b>	<b>Total Program TY \$M</b>
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	15.2	--	--	15.2	--	15.2
2015	4	12.4	--	--	12.4	--	12.4
2016	5	15.8	--	--	15.8	--	15.8
2017	6	19.3	--	--	19.3	--	19.3
2018	5	16.4	--	--	16.4	--	16.4
2019	5	16.7	--	--	16.7	--	16.7
2020	5	17.0	--	--	17.0	--	17.0
2021	5	17.3	--	--	17.3	--	17.3
2022	5	17.6	--	--	17.6	--	17.6
2023	5	18.0	--	--	18.0	--	18.0
<b>Subtotal</b>	<b>94</b>	<b>371.3</b>	<b>--</b>	<b>--</b>	<b>371.3</b>	<b>--</b>	<b>371.3</b>

**Annual Funding BY\$**  
**1506 | Procurement | Aircraft Procurement, Navy**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway BY 2002 \$M</b>	<b>Non End Item Recurring Flyaway BY 2002 \$M</b>	<b>Non Recurring Flyaway BY 2002 \$M</b>	<b>Total Flyaway BY 2002 \$M</b>	<b>Total Support BY 2002 \$M</b>	<b>Total Program BY 2002 \$M</b>
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	13.1	--	--	13.1	--	13.1
2012	5	12.4	--	--	12.4	--	12.4
2013	5	11.6	--	--	11.6	--	11.6
2014	5	11.7	--	--	11.7	--	11.7
2015	4	9.3	--	--	9.3	--	9.3
2016	5	11.7	--	--	11.7	--	11.7
2017	6	14.0	--	--	14.0	--	14.0
2018	5	11.6	--	--	11.6	--	11.6
2019	5	11.6	--	--	11.6	--	11.6
2020	5	11.6	--	--	11.6	--	11.6
2021	5	11.6	--	--	11.6	--	11.6
2022	5	11.5	--	--	11.5	--	11.5
2023	5	11.6	--	--	11.6	--	11.6
<b>Subtotal</b>	<b>94</b>	<b>305.0</b>	<b>--</b>	<b>--</b>	<b>305.0</b>	<b>--</b>	<b>305.0</b>



**Annual Funding TY\$**  
**1611 | Procurement | Shipbuilding and Conversion, Navy**

Fiscal Year	Quantity	End Item Recurring Flyaway TY \$M	Non End Item Recurring Flyaway TY \$M	Non Recurring Flyaway TY \$M	Total Flyaway TY \$M	Total Support TY \$M	Total Program TY \$M
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	9.1	--	--	9.1	2.8	11.9
2013	5	24.1	--	--	24.1	6.2	30.3
2014	1	5.0	--	--	5.0	1.4	6.4
2015	2	8.9	--	--	8.9	2.4	11.3
2016	3	14.9	--	--	14.9	4.0	18.9
2017	3	14.6	--	--	14.6	3.9	18.5
2018	3	14.4	--	--	14.4	3.8	18.2
2019	2	9.7	--	--	9.7	2.6	12.3
2020	2	9.9	--	--	9.9	2.6	12.5
2021	2	10.0	--	--	10.0	2.7	12.7
2022	3	15.3	--	--	15.3	4.0	19.3
<b>Subtotal</b>	<b>57</b>	<b>338.6</b>	<b>--</b>	<b>--</b>	<b>338.6</b>	<b>71.2</b>	<b>409.8</b>

**Annual Funding BY\$**  
**1611 | Procurement | Shipbuilding and Conversion, Navy**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway BY 2002 \$M</b>	<b>Non End Item Recurring Flyaway BY 2002 \$M</b>	<b>Non Recurring Flyaway BY 2002 \$M</b>	<b>Total Flyaway BY 2002 \$M</b>	<b>Total Support BY 2002 \$M</b>	<b>Total Program BY 2002 \$M</b>
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	5.9	--	--	5.9	1.8	7.7
2013	5	15.3	--	--	15.3	4.0	19.3
2014	1	3.1	--	--	3.1	0.9	4.0
2015	2	5.4	--	--	5.4	1.5	6.9
2016	3	8.9	--	--	8.9	2.4	11.3
2017	3	8.6	--	--	8.6	2.3	10.9
2018	3	8.3	--	--	8.3	2.2	10.5
2019	2	5.5	--	--	5.5	1.5	7.0
2020	2	5.5	--	--	5.5	1.4	6.9
2021	2	5.4	--	--	5.4	1.5	6.9
2022	3	8.2	--	--	8.2	2.1	10.3
<b>Subtotal</b>	<b>57</b>	<b>257.9</b>	<b>--</b>	<b>--</b>	<b>257.9</b>	<b>49.5</b>	<b>307.4</b>

**Annual Funding TY\$**  
**1810 | Procurement | Other Procurement, Navy**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway TY \$M</b>	<b>Non End Item Recurring Flyaway TY \$M</b>	<b>Non Recurring Flyaway TY \$M</b>	<b>Total Flyaway TY \$M</b>	<b>Total Support TY \$M</b>	<b>Total Program TY \$M</b>
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	42.4	--	--	42.4	8.2	50.6
2011	5	42.8	--	--	42.8	8.7	51.5
2012	--	--	34.6	--	34.6	--	34.6
2013	2	20.7	--	--	20.7	10.7	31.4
2014	2	20.2	--	--	20.2	15.4	35.6
2015	1	13.6	--	--	13.6	20.3	33.9
2016	1	10.5	--	--	10.5	15.4	25.9
2017	1	14.5	--	--	14.5	16.4	30.9
2018	1	14.8	--	--	14.8	16.6	31.4
2019	--	--	--	--	--	32.1	32.1
<b>Subtotal</b>	<b>70</b>	<b>785.8</b>	<b>34.6</b>	<b>--</b>	<b>820.4</b>	<b>206.2</b>	<b>1026.6</b>

**Annual Funding BY\$**  
**1810 | Procurement | Other Procurement, Navy**

<b>Fiscal Year</b>	<b>Quantity</b>	<b>End Item Recurring Flyaway BY 2002 \$M</b>	<b>Non End Item Recurring Flyaway BY 2002 \$M</b>	<b>Non Recurring Flyaway BY 2002 \$M</b>	<b>Total Flyaway BY 2002 \$M</b>	<b>Total Support BY 2002 \$M</b>	<b>Total Program BY 2002 \$M</b>
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	35.0	--	--	35.0	6.8	41.8
2011	5	34.8	--	--	34.8	7.1	41.9
2012	--	--	27.7	--	27.7	--	27.7
2013	2	16.3	--	--	16.3	8.4	24.7
2014	2	15.6	--	--	15.6	12.0	27.6
2015	1	10.3	--	--	10.3	15.5	25.8
2016	1	7.8	--	--	7.8	11.5	19.3
2017	1	10.6	--	--	10.6	12.0	22.6
2018	1	10.6	--	--	10.6	11.9	22.5
2019	--	--	--	--	--	22.5	22.5
<b>Subtotal</b>	<b>70</b>	<b>723.1</b>	<b>27.7</b>	<b>--</b>	<b>750.8</b>	<b>166.9</b>	<b>917.7</b>

## Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
<b>Approval Date</b>	3/2/1998	10/31/2013
<b>Approved Quantity</b>	7	84
<b>Reference</b>	LRIP-1 – ASN (RD&A) ADM	LRIP-14 – USD (AT&L) ADM
<b>Start Year</b>	1998	1998
<b>End Year</b>	1998	2013

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the requirements (1) to meet ship installation schedules, (2) to outfit Land Based Test Sites in preparation for completion of Operational Testing (OT), and (3) to maintain the Minimum Sustaining Rate for production of CEC systems pending completion of OT and entry into Full Rate Production (FRP).

A total of 84 AN/USG-2 (shipboard) and AN/USG-3 (airborne) LRIP systems have been authorized and procured as follows:

LRIP-1 - The Office of the Assistant Secretary of the Navy (Research Development and Acquisition) (ASN(RD&A)) memorandum of March 2, 1998 to the Program Executive Office (PEO) for Theater Air Defense; and ASN (RD&A) memorandum of August 24, 1998 to the PEO for Theater Air Defense and Surface Combatants authorized the procurement of seven systems. These seven systems represented two percent of the total procurement quantity of 295 planned at that time.

LRIP-2 - The ASN(RD&A) memorandum of May 14, 1999 to the PEO for Theater Surface Combatants authorized the procurement of seven systems.

LRIP-3 - The ASN(RD&A) memorandum of April 7, 2000 to the PEO for Theater Surface Combatants authorized the procurement of 12 systems.

LRIP-4 - The Under Secretary of Defense (Acquisition, Technology and Logistics) (USD (AT&L)) memorandum of May 4, 2001, to the Secretary of the Navy (SECNAV) authorized the procurement of seven systems and four foundations for E-2C aircraft. (Four backfit kits were later procured to complete four LRIP systems for E-2C.)

LRIP-5/6 - The USD (AT&L) memorandum of April 3, 2002, to the SECNAV and the Chairman, Joint Chiefs of Staff authorized the procurement of five AN/USG-3 (airborne) systems in FY 2002 and six AN/USG-3 systems in FY 2003.

LRIP-7/8 - The USD (AT&L) memorandum of September 4, 2003 to the SECNAV authorized two more years of LRIP for the airborne version (AN/USG-3), two in FY 2004 and two in FY 2005, with FRP pending successful completion of Follow-On Test and Evaluation.

LRIP-9 - The USD (AT&L) memorandum of January 19, 2009 to the SECNAV authorized an increase in the total LRIP quantity for the CEC program of an additional 14 AN/USG-3A systems to support the production of E-2D Advanced Hawkeye (AHE) aircraft beginning in FY 2009.

LRIP-10 - The USD (AT&L) memorandum of February 12, 2010 to the SECNAV authorized the second LRIP of up to six complete AN/USG-3B systems and the procurement of up to two additional Single Data Processor with Sierra II

chip (SDP-S) components to support the E-2D AHE LRIP. SDP-S procurement authorizes partial system buy, and does not constitute an increase in total LRIP system quantities.

LRIP-11 - The USD (AT&L) memorandum of August 27, 2010 authorized the Navy to procure one additional LRIP Lot 2 (FY 2010 increment) CEC AN-USG 3B system to support one additional E-2D AHE aircraft as included in the DoD Appropriations Act 2010, Public Law 111-118. The authority to procure one additional unit increased the total authorized CEC LRIP Lot 2 quantity to seven.

LRIP-12 - The USD (AT&L) memorandum of December 5, 2011 authorized the Navy to procure one additional CEC AN/USG-3B unit as part of the FY 2011 LRIP Lot 2. The authority to procure one additional unit increased the total authorized CEC LRIP Lot 2 quantity to eight. This decision also authorized an increase in the total CEC AN/USG-3A/B LRIP quantity to not more than 16 units.

LRIP-13 - The USD (AT&L) memorandum of May 25, 2012 authorized the Navy to procure up to five complete AN/USG-3B systems as part of the LRIP Lot 3. In addition, the memorandum re-designated the CEC program from an Acquisition Category (ACAT) ID to an ACAT IC program with the Navy as the lead component.

LRIP-14 - The USD (AT&L) memorandum of October 31, 2013 authorized the Navy to procure five CEC AN/USG-3B systems in support of E-2D FRP Lot 1 aircraft production. Approval to procure long lead-time items for these five AN/USG-3B systems was given previously on April 10, 2013. In addition, the memorandum increased the total LRIP quantity for CEC E-2D airborne variant to 20 systems.

## Foreign Military Sales

The CEC Program Office, in conjunction with the Integrated Warfare Systems International Program Office, has active FMS cases with the United Kingdom, Australia and Canada towards integration of the CEC capability across their respective fleets in compliance with United States Government directives and FMS requirements.

The FMS cases are not included in this SAR as they have been deemed sensitive by these individual countries.

## Nuclear Costs

None

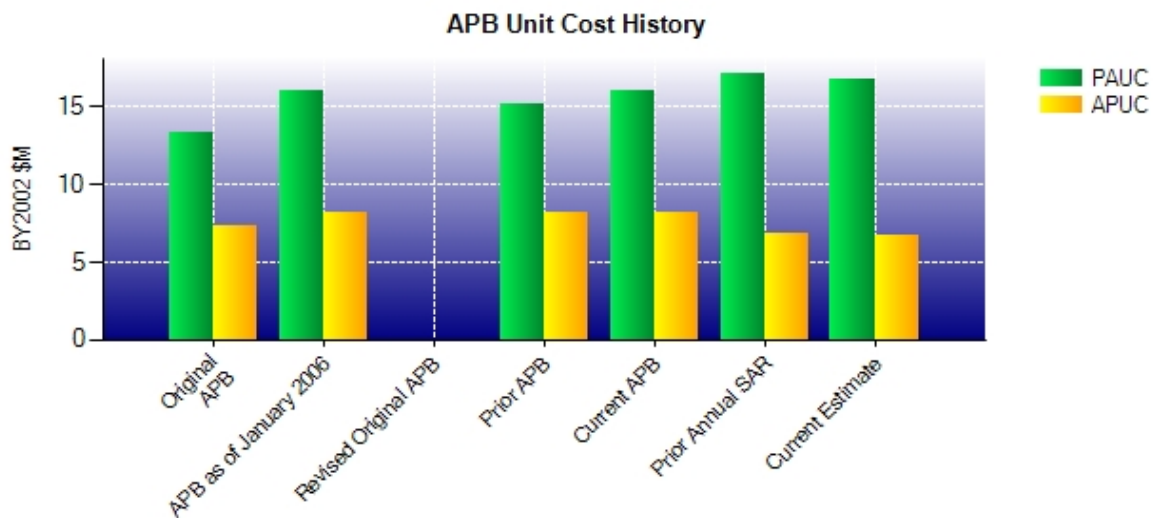
**Unit Cost****Unit Cost Report**

	<b>BY2002 \$M</b>	<b>BY2002 \$M</b>	
<b>Unit Cost</b>	<b>Current UCR Baseline (JUN 2004 APB)</b>	<b>Current Estimate (DEC 2013 SAR)</b>	<b>BY % Change</b>
<b>Program Acquisition Unit Cost (PAUC)</b>			
Cost	4530.9	4364.4	
Quantity	283	261	
Unit Cost	16.010	16.722	+4.45
<b>Average Procurement Unit Cost (APUC)</b>			
Cost	2095.2	1559.8	
Quantity	256	231	
Unit Cost	8.184	6.752	-17.50

	<b>BY2002 \$M</b>	<b>BY2002 \$M</b>	
<b>Unit Cost</b>	<b>Original UCR Baseline (JUL 1995 APB)</b>	<b>Current Estimate (DEC 2013 SAR)</b>	<b>BY % Change</b>
<b>Program Acquisition Unit Cost (PAUC)</b>			
Cost	2443.4	4364.4	
Quantity	183	261	
Unit Cost	13.352	16.722	+25.24
<b>Average Procurement Unit Cost (APUC)</b>			
Cost	1262.8	1559.8	
Quantity	174	231	
Unit Cost	7.257	6.752	-6.96



## Unit Cost History



	Date	BY2002 \$M		TY \$M	
		PAUC	APUC	PAUC	APUC
<b>Original APB</b>	JUL 1995	13.326	7.257	14.061	8.222
<b>APB as of January 2006</b>	JUN 2004	16.010	8.184	16.814	9.235
<b>Revised Original APB</b>	N/A	N/A	N/A	N/A	N/A
<b>Prior APB</b>	APR 2002	15.159	8.184	15.848	9.235
<b>Current APB</b>	JUN 2004	16.010	8.184	16.814	9.235
<b>Prior Annual SAR</b>	DEC 2012	17.169	6.838	18.637	7.970
<b>Current Estimate</b>	DEC 2013	16.722	6.752	18.264	7.981

## SAR Unit Cost History

### Initial SAR Baseline to Current SAR Baseline (TY \$M)

Initial PAUC Dev Est	Changes								PAUC Prod Est
	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 Prod Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
15.848	0.326	-0.212	0.988	1.311	0.028	0.000	-0.025	2.416	18.264

**Initial SAR Baseline to Current SAR Baseline (TY \$M)**

Initial APUC Dev Est	Changes								APUC Prod Est
	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 Prod Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
9.235	0.221	-0.218	0.088	-0.618	-0.696	0.000	-0.031	-1.254	7.981

**SAR Baseline History**

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	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	4766.8
Total Quantity	N/A	183	272	261
Prog. Acq. Unit Cost (PAUC)	N/A	14.061	15.848	18.264

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

**Cost Variance**

<b>Summary Then Year \$M</b>				
	<b>RDT&amp;E</b>	<b>Proc</b>	<b>MILCON</b>	<b>Total</b>
SAR Baseline (Prod Est)	1946.5	2364.2	--	4310.7
Previous Changes				
Economic	+38.5	+54.9	--	+93.4
Quantity	+51.6	-385.3	--	-333.7
Schedule	+160.6	+31.0	--	+191.6
Engineering	+490.2	-129.5	--	+360.7
Estimating	+239.9	-132.0	--	+107.9
Other	--	--	--	--
Support	--	-34.0	--	-34.0
Subtotal	+980.8	-594.9	--	+385.9
Current Changes				
Economic	-4.4	-3.8	--	-8.2
Quantity	--	+103.9	--	+103.9
Schedule	+76.8	-10.6	--	+66.2
Engineering	-5.2	-13.2	--	-18.4
Estimating	-71.9	-28.8	--	-100.7
Other	--	--	--	--
Support	+0.6	+26.8	--	+27.4
Subtotal	-4.1	+74.3	--	+70.2
Total Changes	+976.7	-520.6	--	+456.1
CE - Cost Variance	2923.2	1843.6	--	4766.8
CE - Cost & Funding	2923.2	1843.6	--	4766.8

Summary Base Year 2002 \$M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Prod Est)	2028.1	2095.2	--	4123.3
Previous Changes				
Economic	--	--	--	--
Quantity	+47.8	-302.2	--	-254.4
Schedule	+116.9	-42.9	--	+74.0
Engineering	+427.4	-101.4	--	+326.0
Estimating	+188.2	+3.9	--	+192.1
Other	--	--	--	--
Support	--	-134.5	--	-134.5
Subtotal	+780.3	-577.1	--	+203.2
Current Changes				
Economic	--	--	--	--
Quantity	--	+59.0	--	+59.0
Schedule	+53.9	-7.9	--	+46.0
Engineering	-3.7	-6.9	--	-10.6
Estimating	-54.5	-18.0	--	-72.5
Other	--	--	--	--
Support	+0.5	+15.5	--	+16.0
Subtotal	-3.8	+41.7	--	+37.9
Total Changes	+776.5	-535.4	--	+241.1
CE - Cost Variance	2804.6	1559.8	--	4364.4
CE - Cost & Funding	2804.6	1559.8	--	4364.4

Previous Estimate: December 2012

RDT&E	\$M	
	Base Year	Then Year
<b>Current Change Explanations</b>		
Revised escalation indices. (Economic)	N/A	-4.4
Stretch-out of development effort from FY 2018 to FY 2019. (Schedule)	+53.9	+76.8
Revised estimate due to sequestration reduction which caused reduced scope to Composite Tracking Network (United States Marine Corps). (Engineering)	-3.7	-5.2
Revised controls due to Congressional reductions and other programmatic changes for FY 2014 to FY 2018 which reduced funding. (Estimating)	-55.8	-73.5
Adjustment for current and prior escalation. (Estimating)	+1.3	+1.6
Additional Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) Army RDT&E funding to support JLENS integration. (Support)	+0.5	+0.6
RDT&E Subtotal	-3.8	-4.1

Procurement	\$M	
	Base Year	Then Year
<b>Current Change Explanations</b>		
Revised escalation indices. (Economic)	N/A	-3.8
Total Quantity variance resulting from an increase of 11 DDG 51 units from 46 to 57 Ship Conversion, Navy (SCN). (Subtotal)	+41.4	+74.8
Quantity variance resulting from an increase of 11 DDG 51 units from 46 to 57 (SCN). (Quantity)	(+56.5)	(+102.3)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(+2.1)	(+3.7)
Allocation to Engineering resulting from Quantity change. (Engineering) (QR)	(-8.5)	(-15.4)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(-8.7)	(-15.8)
Total Quantity variance resulting from a decrease of two systems from 72 to 70 Other Procurement, Navy (OPN). (Subtotal)	-7.7	-10.6
Quantity variance resulting from a decrease of 2 systems from 72 to 70 (OPN). (Quantity)	(-10.5)	(-14.6)
Allocation to Schedule resulting from Quantity change. (Schedule) (QR)	(-0.4)	(-0.6)
Allocation to Engineering resulting from Quantity change. (Engineering) (QR)	(+1.6)	(+2.2)
Allocation to Estimating resulting from Quantity change. (Estimating) (QR)	(+1.6)	(+2.4)
Additional quantity variance due to the removal of three CG MOD; increase in program support required to realign funding to new efforts (OPN). (Quantity)	+13.0	+16.2
Acceleration of procurement buy profile for DDG 51 (SCN). (Schedule)	0.0	-0.8
Stretch-out of procurement buy profile four units moved to FY 2021 Aircraft Procurement, Navy (APN). (Schedule)	0.0	+5.8
Stretch-out of procurement buy profile from FY 2018 to FY 2019 (OPN). (Schedule)	0.0	+1.1
Additional schedule variance due to moving DDG 119 to FY 2013 from FY 2014 (SCN). (Schedule) (QR)	-2.4	-3.6
Additional schedule variance due to stretch-out of the procurement buy profile from FY 2013 to FY 2014 Procurement, Marine Corps (PMC). (Schedule)	+1.4	+1.8
Additional schedule variance due to 13 systems being aligned removed between FY 2015 through FY 2020 into FY 2021 through 2023 (APN). (Schedule)	0.0	-2.4

Additional schedule variance due to extending the production line to FY 2022 (SCN). (Schedule)	-8.6	-15.6
Revised estimate for realized unit cost savings (APN). (Estimating)	-6.6	-9.5
Revised estimates for realized unit cost savings (SCN). (Estimating)	0.0	-0.1
Revised estimate for realized unit cost savings (OPN). (Estimating)	-1.2	-1.6
Reduced CEC budget controls/program improvements (OPN). (Estimating)	-4.2	-5.5
Adjustment for current and prior escalation. (Estimating)	+1.1	+1.3
Adjustment for current and prior escalation. (Support)	+0.3	+0.4
Increase in Other Support for additional DDG 51 systems integration (SCN). (Support)	+8.3	+14.7
Increase in Other Support funding integration (OPN). (Support)	+6.9	+11.7
<u>Procurement Subtotal</u>	<u>+41.7</u>	<u>+74.3</u>

(QR) Quantity Related

## Contracts

### Appropriation: Procurement

Contract Name	<b>CEC SDP-S Production</b>
Contractor	Sechan Electronics Inc
Contractor Location	525 Furnace Hills Pike Lititz, PA 17543-8902
Contract Number, Type	N00024-12-D-5203/1, IDIQ/FFP
Award Date	December 20, 2011
Definitization Date	December 20, 2011

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	N/A	18.9	N/A	N/A	64.0	64.0

### 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 Order 0002 on February 13, 2013.

### Cost and Schedule Variance Explanations

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

### Contract Comments

This contract is a delivery order contract to procure Signal Data Processor with Sierra Chip (SDP-S). Production units are Firm-Fixed Price, the engineering support services are Cost Plus Fixed-Fee. This is an Indefinite Delivery, Indefinite Quantity (IDIQ) contract, therefore, the estimated ceiling price at completion is not applicable.

**Appropriation: RDT&E**

Contract Name **Design Agent/Engineering Services (FY 2014 - FY 2018)**  
 Contractor Raytheon - Network Centric Systems  
 Contractor Location 8333 Bryan Dairy Road  
 Largo, FL 33777-1444  
 Contract Number, Type N00024-13-C-5212/0, CPFF  
 Award Date September 27, 2013  
 Definitization Date September 27, 2013

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	46.1	N/A	0	288.6	288.6

**Target Price Change Explanation**

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to increases in current target price for additional Design Agent/Engineering Services efforts.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (2/21/2014)	0.0	-0.1
Previous Cumulative Variances	--	--
Net Change	+0.0	-0.1

**Cost and Schedule Variance Explanations**

The unfavorable cumulative schedule variance is due to lab upgrade delays in processing material orders and the sudden debarment of a sole source vendor required for the Wrap-Around Simulation Program build.

**Contract Comments**

This is the first time this contract is being reported.

The FY 2014 - FY 2018 Design Agent/Engineering Services (DA/ES) contract was awarded on September 27, 2013 and is the follow-on contract to the FY 2008 - FY 2011 DA/ES effort. The current end date including all option years is September 26, 2018.

This follow-on effort includes labor, facilities, engineering, and technical support services required for CEC System Design Agent 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.

The Program Manager, Contractor, and Performance Estimated Price at Completion (EPAC) reflect the EPAC for the Design Agent Services portion of the contract only.



**Appropriation: RDT&E**

Contract Name **CEC Production (FY 2012 - FY 2014)**  
 Contractor Raytheon - Network Centric Systems  
 Contractor Location 8333 Bryan Dairy Road  
 Largo, FL 33777-1444  
 Contract Number, Type N00024-12-C-5231/0, FFP  
 Award Date September 28, 2012  
 Definitization Date May 01, 2013

Initial Contract Price (\$M)			Current Contract Price (\$M)			Estimated Price at Completion (\$M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
99.2	N/A	0	267.1	N/A	0	267.1	267.1

**Target Price Change Explanation****Cost and Schedule Variance Explanations**

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

**Contract Comments**

This is the first time this contract is being reported.

FY 2012 - FY 2014 CEC Production was awarded on September 28, 2012 and is the follow-on contract to FY 2008- FY 2011 CEC Production. This contract includes CEC production requirements for CEC systems. Requirements for associated Installations and Checkout Kits and Planar Array Antenna Assemblies back-fit and other ancillary equipment are also included.

This effort definitized the CEC Production Undefined Contract Action effective May 1, 2013.

## Deliveries and Expenditures

Delivered to Date	Plan to Date	Actual to Date	Total Quantity	Percent Delivered
Development	30	30	30	100.00%
Production	120	135	231	58.44%
Total Program Quantity Delivered	150	165	261	63.22%

Expended and Appropriated (TY \$M)			
Total Acquisition Cost	4766.8	Years Appropriated	21
Expended to Date	3823.3	Percent Years Appropriated	70.00%
Percent Expended	80.21%	Appropriated to Date	4001.9
Total Funding Years	30	Percent Appropriated	83.95%

The above data is current as of 3/27/2014.

## Operating and Support Cost

### CEC

#### Assumptions and Ground Rules

##### Cost Estimate Reference:

The O&S cost estimate is based on "Change 1 to the Department of the Navy Service Cost Position for the Cooperative Engagement Capability Program", dated December 12, 2013.

##### Sustainment Strategy:

The O&S costs are based on 252 total systems with a service-life of 20 years. Costs include: 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.

##### Antecedent Information:

There is no antecedent system for CEC.

Unitized O&S Costs BY2002 \$K			
Cost Element	CEC Avg Annual Sys Cost	No Antecedent (Antecedent)	
Unit-Level Manpower	0.000		0.000
Unit Operations	7.159		0.000
Maintenance	247.164		0.000
Sustaining Support	72.762		0.000
Continuing System Improvements	95.091		0.000
Indirect Support	0.000		0.000
Other	15.729		0.000
Total	437.905		--

##### Unitized Cost Comments:

Total disposal costs of \$26,559.9K (BY 2002 \$K) are not included in the unitized cost elements. Total O&S costs are calculated as follows \$437.905K x 20 years x 252 systems = 2,207,041.2. The weighted average O&S cost for the last five years from the Visibility and Management of Operation and Support Cost model is \$318K (BY 2002 \$M) per system per year.

	Total O&S Cost \$M			
	Current Production APB Objective/Threshold		Current Estimate	
	CEC		CEC	No Antecedent (Antecedent)
<b>Base Year</b>	N/A	N/A	2207.0	N/A
<b>Then Year</b>	N/A	N/A	3676.9	N/A

##### Total O&S Costs Comments:

**O&S Cost Variance**

<b>Category</b>	<b>Base Year 2002 \$M</b>	<b>Change Explanation</b>
Prior SAR Total O&S Estimate December 2012	2668.4	
Cost Estimating Methodology	0.0	
Cost Data Update	0.0	
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	-461.4	Modernization efforts and improvements in reliability
Programmatic/Planning Factors	0.0	
Other	0.0	
Total Changes	-461.4	
Current Estimate	2207.0	

**Disposal Costs:**

Disposal costs are based on a 20-year service-life from initial deployment and are five percent (BY 2002 value of \$26.6M) of system procurement cost and are not included in unitized costs. The CEC Program Office is addressing demilitarization and disposal requirements with assistance from Naval Surface Warfare Center, Port Hueneme Division. Demilitarization and disposal planning follows the requirements of DoD 4160.21-M-1, Defense Demilitarization and Trade Security Control Manual.