Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy												Date: May 2017
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603658N *I Cooperative Engagement*							
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
Total Program Element	527.464	72.472	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	599.936
2039: *COOP Engagement*	527.464	72.472	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	599.936
Program MDAP/MAIS Code: **Project MDAP/MAIS Code(s):** 582												

A. Mission Description and Budget Item Justification

Cooperative Engagement Capability (CEC) significantly improves Battle Force Anti-Air Warfare (AAW) capability by coordinating all Battle Force AAW sensors into a single, real-time, composite track picture to support integrated fire control.

CEC distributes sensor data from each USMC Command Control Unit, USA Aerostat, US Navy Ship, and US Navy Aircraft, or cooperating unit (CU), to all other CUs in the battle force through a real-time, line of sight, high data- rate sensor and engagement data distribution network. CEC is highly resistant to jamming and provides accurate gridlocking between CUs. Each CU independently employs high capacity, parallel processing and advanced algorithms to combine all distributed sensor data into a fire control quality track picture which is the same for all CUs. CEC data is presented as a superset of the best AAW sensor capabilities from each CU, all of which are integrated into a single input to each CU's combat weapons system.

CEC significantly improves our Battle Force defense in depth, including both local area and ship defense capabilities against current and future AAW threats. Moreover, CEC provides critical connectivity and integration of over-land air defense systems capable of countering emerging air threats, including land attack cruise missiles, in a complex littoral environment.

Each military Service funds CEC development for their combat systems. The CEC Program Office oversees CEC development for all services. CEC consists of the Data Distribution System (DDS), the Cooperative Engagement Processor (CEP), and interface with Combat Systems and sensors. The DDS encodes and distributes own-ship sensor and engagement data and is a high capacity, jam resistant, directive system providing a precision gridlocking and high throughput of data. The CEP is a high capacity distributed processor that processes force levels of data in near real-time. The data is passed to the ship's combat system as high quality data for which the ship can cue its onboard sensors or use the data to engage targets without actually tracking them.

The Navy implemented a Signal Data Processor (SDP) approach to modify the current equipment to meet reduced size, weight, cost, power and cooling objectives. This SDP approach also supports continuity for interoperability improvements and program protection, as well as supporting open architecture initiatives, and comms independence. The SDP hardware complies with Category 3 Open Architecture Computing Environment (OACE) standards. The SDP-S is being fielded fleet-wide to all US Navy, USMC, US Army, and FMS CEC units.

Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Navy	Date: May 2017
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0603658N *I Cooperative Engagement*

A family of antennas approach will be used to satisfy CEC requirements with lower life cycle costs (procurement, installation, and maintenance) and reduced weight (on mast and below deck). These antennas enable future capability as well as providing a solution extensible to additional platforms. This effort for development and production of Common Array Block (CAB) antennas was competitively awarded in late FY2013.

In support of Interoperability, CEC will continue to work collaboratively with other Combat Systems programs (AWS, E-2C, E-2D, SSDS, CDLMS, C2P, and SGS/AC) to develop the software and implement design corrections and system changes. CEC will analyze the interactions of interoperability issues and impacts and provide collaboration for development of CEC and other system changes develop the long term solutions, including the engineering process to validate small parts of developmental software ideas, and utilize M&S to validate design approaches in the systems engineering realm.

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	73.786	0.000	0.000	-	0.000
Current President's Budget	72.472	0.000	0.000	-	0.000
Total Adjustments	-1.314	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.314	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Change Summary Explanation

N/A

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy											Date: May 2017	
Appropriation/Budget Activity 1319 / 4					R-1 Program Element (Number/Name) PE 0603658N / *Cooperative Engagement*				Project (Number/Name) 2039 / *COOP Engagement*			
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
2039: *COOP Engagement*	527.464	72.472	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	599.936
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Project MDAP/MAIS Code: 582

A. Mission Description and Budget Item Justification

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Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603658N / *Cooperative Engagement*	**Project (Number/Name)** 2039 / *COOP Engagement*

In support of Interoperability, CEC will continue to work collaboratively with other Combat Systems programs (AWS, E-2C, E-2D, SSDS, CDLMS, C2P, and SGS/AC) to develop the software and implement design corrections and system changes. CEC will analyze the interactions of interoperability issues and impacts and provide collaboration for development of CEC and other system changes develop the long term solutions, including the engineering process to validate small parts of developmental software ideas, and utilize M&S to validate design approaches in the systems engineering realm.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Title: E-2D	3.500	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Support DSSC 2 CEC flight test and IV&V, and develop and incorporate corrective actions as required to support E-2D CEC DSSC 2 software Product Certification Panel. Support E-2D CEC Accelerated Midterm Interoperability Improvement Project (AMIIP) and Naval Integrated Fire Control-Counter Air (NIFC-CA) Enhancements requirements development, systems engineering, and software development efforts in conjunction with E-2D DSSC 3 software development. Assess impacts of SDP-S -005 development and fielding on E-2D, and conduct related systems engineering.					
FY 2017 Plans: N/A					
FY 2018 Base Plans: N/A					
FY 2018 OCO Plans: N/A					
Title: B/L 2.1 INTEGRATION AND FOT&E TESTING	8.400	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Continue support of NIFC-CA testing. Complete CEC Operational Test (OT-D1A) of AN/USG-2B with Aegis Baseline 9A on USS PRINCETON (CG 59). Complete Operational Test (OT-D1C) of AN/USG-2B with Aegis Baseline 9C on USS JOHN PAUL JONES (DDG 53) and USS ARLEIGH BURKE (DDG 51). Continue Developmental Test (DT-D2) of AN/USG-2B with CVN 78. Commence Developmental Test (DT-D3) of AN/USG-2B with DDG 1000.					
FY 2017 Plans: N/A					
FY 2018 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603658N / *Cooperative Engagement*	**Project (Number/Name)** 2039 / *COOP Engagement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
N/A ***FY 2018 OCO Plans:*** N/A					
Title: SYSTEM IMPROVEMENTS ***Articles:*** ***FY 2016 Accomplishments:*** Significantly ramp up efforts to meet the rigor of the Advanced Capability Build (ACB16) Preliminary Design Review (PDR); deliver CEC to CSEDS with a CEC system supporting the ACB16 combat system prototype. Coincident with that, integrate with ACB16 updated sensors, find and resolve trouble reports and conduct associated analysis. Continue Common Array Block (CAB) antenna integration efforts to reduce costs, improve reliability, and lower antenna weight will require the creation of below deck Data Distribution System equipment power supply and environmental equipment. Continue robust integration efforts with the ACB 16 combat system build by completing CEC ACB 16 Critical Design Review (CDR) and delivering design for continued developmental/integration testing. Ramp up integration efforts for CEC with the CVN 78 combat system, including nine SSDS and the Dual Band Radar (DBR) Track Exercises that have occurred. Ramp up integration efforts with the DDG 1000 combat system with the Total Ship Computing Environment (TSCE) combat system and the Multi-Function Radar (MFR) including three Track Exercises. ***FY 2017 Plans:*** N/A ***FY 2018 Base Plans:*** N/A ***FY 2018 OCO Plans:*** N/A	7.233 -	0.000 -	0.000 -	0.000 -	0.000 -
Title: NETWORK ENABLED ELECTRONIC DEFENSE SYSTEM (NEEDS) ***Articles:*** ***FY 2016 Accomplishments:*** Continue analysis, definition and development of NEEDS capability, system architecture and design, external interface requirements, development of prototype implementation, evaluation of real-time processing load, development of WASP capabilities, and development of recorded data playback capability, and support for TIMs, Interface Control Working Groups (ICWG) and In-Process Reviews (IPR). Continue to collect real-world data	7.302 -	0.000 -	0.000 -	0.000 -	0.000 -

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603658N / *Cooperative Engagement*	**Project (Number/Name)** 2039 / *COOP Engagement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
in Software Integration Laboratory (SIL) to refine initial NEEDS Software Module and update M&S capabilities. Continue to refine Technical Performance Measures (TPM) and CEC Critical Test Integration (CTI) Notebook. ***FY 2017 Plans:*** N/A ***FY 2018 Base Plans:*** N/A ***FY 2018 OCO Plans:*** N/A					
Title: FIELD ACTIVITIES ***Articles:*** ***FY 2016 Accomplishments:*** Continue field activity support of CEC development and fielding efforts (including SE/IA, Technical Direction Agent, In-Service Engineering, Integrated Logistics Support planning) and program management support. Support ongoing Common Array Block (CAB) Antenna development effort by providing close coordination with shipyards to refine the CAB Antenna fielding plan for both forward-fit and backfit platforms. Participate in discussions to identify and resolve CEC training systems limitations for pier-side Fleet Synthetic Training (FST) events and ensure appropriate CEC configuration after each event. ***FY 2017 Plans:*** N/A ***FY 2018 Base Plans:*** N/A ***FY 2018 OCO Plans:*** N/A	7.409 -	0.000 -	0.000 -	0.000 -	0.000 -
Title: LINK 16/INTEROPERABILITY ***Articles:*** ***FY 2016 Accomplishments:*** Commence development of Far Term Interoperability Improvement Project (FTIIP) software. Coordinate Development and Integration requirements across all FTIIP programs. Commence integration of FTIIP software. ***FY 2017 Plans:***	5.200 -	0.000 -	0.000 -	0.000 -	0.000 -

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603658N / *Cooperative Engagement*	**Project (Number/Name)** 2039 / *COOP Engagement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
N/A ***FY 2018 Base Plans:*** N/A ***FY 2018 OCO Plans:*** N/A					
Title: COMMON ARRAY BLOCK (CAB) ANTENNA	15.109	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Conduct Critical Design Review (CDR) and commence build and test of Engineering Development Models (EDMs) of the CAB-Ship antenna. ***FY 2017 Plans:*** N/A ***FY 2018 Base Plans:*** N/A ***FY 2018 OCO Plans:*** N/A					
Title: NAVAL INTEGRATED FIRE CONTROL-COUNTER AIR (NIFC-CA)	2.457	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Support NIFC CA Increment I refinement against increasingly challenging test cases at White Sands Missile Range (WSMR) and At-Sea with test support, model updates, post-analysis, and software updates. Also begin development of NIFC CA Increment 2 capability with Interface Design Description (IDD) refinement, model updates and development of initial software loads for test at WSMR. Conduct System Functional Review (SFR) and System Requirement Review (SRR). ***FY 2017 Plans:*** N/A ***FY 2018 Base Plans:*** N/A ***FY 2018 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603658N / *Cooperative Engagement*	**Project (Number/Name)** 2039 / *COOP Engagement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
N/A					
Title: AIR AND MISSILE DEFENSE RADAR (AMDR)	8.762	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Begin robust AMDR Adaptive Layer development, Wrap Around Simulation Program (WASP) development and WASP certification process. Develop CEC AMDR Interface Design Description (IDD). Develop Cooperative Engagement Processor (CEP) Kernel changes and software updates. Assist in development of DT & OT plans. Provide Information Assurance assessment of new CEP interfaces. Support AMDR Joint Test Review (JTR). Develop and deliver initial CEC Sensor Adaptive Layers for all AMDR functions (Surface, Air, etc.). Conduct Trade Studies to determine the DDG-51 Flt III destroyer effort in support of AMDR integration. Install and Check Out AMDR Adaptive Layer Stand Alone CEP (SACEP), remote SACEP, and WASP at the Naval Systems Computing Center (NSCC) in Moorestown, NJ in support of Aegis Combat System Interface Support Equipment (CS ISE) development.					
FY 2017 Plans: N/A					
FY 2018 Base Plans: N/A					
FY 2018 OCO Plans: N/A					
Title: FIRE CONTROL LOOP IMPROVEMENT INITIATIVE (FCLIP) PHASE 2	7.100	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2016 Accomplishments: Commence development efforts for Fire Control Loop Improvement Project (FCLIP) phase 2. Coordinate FCLIP improvements with host combat system and other combat system elements. Integrate the updated FCLIP software to accomplish improved air object tracking, to include new interface to Close In Weapon System (CIWS) Sensor and updated interface to the SPQ-9B radar system.					
FY 2017 Plans: N/A					
FY 2018 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603658N / *Cooperative Engagement*	**Project (Number/Name)** 2039 / *COOP Engagement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
N/A ***FY 2018 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	72.472	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• SCN: *Navy, SCN*	34.100	21.200	30.400	-	30.400	18.100	12.500	12.700	12.800	51.200	507.031
• APN/0204152N: *Navy, APN*	16.263	19.886	16.897	-	16.897	13.788	14.064	14.345	10.974	57.200	397.386
• OPN/2606: *CEC*	25.695	22.034	29.376	-	29.376	31.955	31.932	31.755	32.393	40.774	1,036.578
• RDT&E/0206313M: *USMC*	0.762	2.234	2.092	-	2.092	1.255	0.752	0.730	0.730	0.000	31.177
• RDT&E/0206335M: *USMC*	0.473	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.510
• O&M,N/0206626M: *USMC*	1.725	2.291	3.157	-	3.157	3.062	2.970	2.881	2.881	0.000	28.022
• PMC/0206313M: *USMC*	0.680	7.257	8.450	-	8.450	8.070	3.550	0.000	0.000	0.000	30.711
• OPN/0900: *DDG/MOD*	2.400	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	63.911
• OPN/0960: *CG MOD*	0.000	0.000	0.000	-	0.000	0.000	0.000	6.230	6.355	0.000	12.585

Remarks

D. Acquisition Strategy

CEC Acquisition Strategy (AS) approved by OSD (AT&L) on 19 January 2010. CEC Acquistion Plan (AP) approved September 2013. Full Rate Production for CEC AN/USG-3B variant approved April 2014.

Contracts:
Common Array Block (CAB) antenna - contract competitively awarded 4Qtr FY2013.
CEC Design Agent/Engineering Services (DA/ES) follow-on sole source contract awarded 4Qtr FY2013.
CEC Production - Contract competitively awarded in 2Qtr FY2015.
CEC DA/ES contract will be competitively awarded 1Qtr FY2019.

E. Performance Metrics

- Complete the adaptive layer development for the E-2D aircraft. Provide technical support for installation and integration in the Northrop Grumman Systems Integration Laboratory, on board the test aircraft and support the Developmental testing. Continue E-2D Advanced Hawkeye aircraft CEC integration efforts.
- Continue AEGIS Advanced Capability Builds CEC integration and demonstration efforts.

Exhibit R-2A, RDT&E Project Justification: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603658N / *Cooperative Engagement*	**Project (Number/Name)** 2039 / *COOP Engagement*

- Continue Naval Integrated Fire Control - Counter Air (NIFC-CA) CEC integration and demonstration efforts.
- Continue Crypto Modernization Tech Refresh efforts.

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603658N / *Cooperative Engagement*	Project (Number/Name) 2039 / *COOP Engagement*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
AN/USG-2/3 Design Agent/Engineering Services	C/CPFF	Raytheon : St. Petersburg, FL	120.912	6.858	Feb 2016	0.000		0.000		-		0.000	0.000	127.770	-
TDA	C/CPFF	JHU/APL : Laurel, MD	71.399	6.751	Feb 2016	0.000		0.000		-		0.000	0.000	78.150	-
SI/DA	C/CPAF	General Dynamics : Fairfax, VA	23.979	0.000		0.000		0.000		-		0.000	0.000	23.979	-
SI/DA	C/CPAF	Award Fees : Not Specified	2.903	0.000		0.000		0.000		-		0.000	0.000	2.903	-
DDG 1000	C/CPAF	Raytheon : Massachusetts	10.983	0.000		0.000		0.000		-		0.000	0.000	10.983	-
DDG 1000	C/CPAF	Award Fees : Not Specified	0.447	0.000		0.000		0.000		-		0.000	0.000	0.447	-
NIFC-CA Integration	TBD	Various : Not Specified	39.342	2.457	Jan 2016	0.000		0.000		-		0.000	0.000	41.799	-
In-Service Engineering Activity	WR	NSWC : Port Hueneme, CA	4.638	2.387	Dec 2015	0.000		0.000		-		0.000	0.000	7.025	-
Software Support Activity/ SEIA	WR	NSWC : Dahlgren, VA	17.561	2.720	Dec 2015	0.000		0.000		-		0.000	0.000	20.281	-
Production Engineering Activity	WR	NSWC : Crane, IN	5.694	0.141	Dec 2015	0.000		0.000		-		0.000	0.000	5.835	-
JTRS	TBD	Various : Not Specified	8.500	0.000		0.000		0.000		-		0.000	0.000	8.500	-
Various	TBD	Miscellaneous : Not Specified	29.133	0.000		0.000		0.000		-		0.000	0.000	29.133	-
NAVSSI	WR	SPAWAR : San Diego, CA	0.368	0.000		0.000		0.000		-		0.000	0.000	0.368	-
Certification	MIPR	NSA : Fort Meade, MD	1.200	0.000		0.000		0.000		-		0.000	0.000	1.200	-
Certification	WR	SPAWAR : Charleston, SC	0.930	0.000		0.000		0.000		-		0.000	0.000	0.930	-
Joint Exercises	WR	Various : Not Specified	3.744	0.000		0.000		0.000		-		0.000	0.000	3.744	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603658N / *Cooperative Engagement*	**Project (Number/Name)** 2039 / *COOP Engagement*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
LBTS Testing	WR	CDSA Damneck : Virginia Beach, VA	6.995	0.435	Dec 2015	0.000		0.000		-		0.000	0.000	7.430	-
LBTS Testing	WR	SCSC : Wallops Island, VA	6.383	0.550	Jan 2016	0.000		0.000		-		0.000	0.000	6.933	-
E-2D Integration	TBD	Various : Not Specified	44.258	3.500	Dec 2015	0.000		0.000		-		0.000	0.000	47.758	-
MSI/NCCT	MIPR	Wright Patterson AFB : Dayton, OH	1.228	0.000		0.000		0.000		-		0.000	0.000	1.228	-
Common Array Block Development	C/CPFF	Various : Not Specified	25.452	15.109	Jan 2016	0.000		0.000		-		0.000	0.000	40.561	-
NEEDS	C/CPFF	Various : Not Specified	24.628	7.302	Feb 2016	0.000		0.000		-		0.000	0.000	31.930	-
AMDR	C/CPFF	Various : Not Specified	3.250	8.762	Feb 2016	0.000		0.000		-		0.000	0.000	12.012	-
JTMC	C/CPFF	Raytheon : St. Petersburg, FL	1.000	0.000		0.000		0.000		-		0.000	0.000	1.000	-
FCLIP	C/CPFF	Various : Not Specified	0.000	7.100	Feb 2016	0.000		0.000		-		0.000	0.000	7.100	-
		Subtotal	454.927	64.072		0.000		0.000		-		0.000	0.000	518.999	-

Remarks

Explanations for the use of "WR and Reqn" in the Contract method & type" column are as follows:
- When using "WR", these documents are sent to Navy activities who obligate funding on their vehicles to accomplish tasking for CEC. These activities are the only ones who can accomplish these tasks for the program.
- E-2D Integration/NIFC-CA "Various/TBDs" are for classified programs and several document types.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test/ACB Support	C/CPFF	Raytheon : St. Petersburg, FL	4.098	1.016	Feb 2016	0.000		0.000		-		0.000	0.000	5.114	-
Test/ACB Support	C/CPFF	JHU/APL : Laurel, MD	1.660	1.016	Feb 2016	0.000		0.000		-		0.000	0.000	2.676	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603658N / *Cooperative Engagement*	Project (Number/Name) 2039 / *COOP Engagement*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Support	WR	NRL : Washington, DC	0.313	0.000		0.000		0.000		-		0.000	0.000	0.313	-
Test/ACB Support	WR	NSWC : Port Hueneme, CA	22.591	1.795	Feb 2016	0.000		0.000		-		0.000	0.000	24.386	-
Air Operations Test Support	WR	NAVAIR (PMA207) : Patuxent River, MD	9.162	1.025	Feb 2016	0.000		0.000		-		0.000	0.000	10.187	-
Test Data Reduction Analysis	WR	NWAS : Corona, CA	16.061	1.873	Feb 2016	0.000		0.000		-		0.000	0.000	17.934	-
Test Support	WR	COMOPTEVFOR : Norfolk, VA	11.456	1.151	Feb 2016	0.000		0.000		-		0.000	0.000	12.607	-
Test/ACB Support	WR	NSWC : Dahlgren, VA	1.766	0.524	Feb 2016	0.000		0.000		-		0.000	0.000	2.290	-
		Subtotal	67.107	8.400		0.000		0.000		-		0.000	0.000	75.507	-

Remarks

Explanation for the use of "WR" in the "Contract method & type" column are as follows:

When using "WR", these documents are sent to Navy activities who obligate funding on their vehicles to accomplish tasking for CEC. These activities are the only ones who can accomplish these tasks for the program.

Test support also includes the following funding for ACB integration support:
FY14 - $3.0M

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2016 Cost	FY 2016 Award Date	FY 2017 Cost	FY 2017 Award Date	FY 2018 Base Cost	FY 2018 Base Award Date	FY 2018 OCO Cost	FY 2018 OCO Award Date	FY 2018 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/FFP	Booz Allen & Hamilton : Washington, DC	5.070	0.000		0.000		0.000		-		0.000	0.000	5.070	-
Program Management Support	C/FFP	Tech Marine Business : Washington, DC	0.360	0.000		0.000		0.000		-		0.000	0.000	0.360	-
		Subtotal	5.430	0.000		0.000		0.000		-		0.000	0.000	5.430	-

Exhibit R-3, RDT&E Project Cost Analysis: FY 2018 Navy			Date: May 2017
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603658N / *Cooperative Engagement*	Project (Number/Name) 2039 / *COOP Engagement*	

	Prior Years	FY 2016		FY 2017		FY 2018 Base		FY 2018 OCO		FY 2018 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	527.464	72.472		0.000		0.000		-		0.000	0.000	599.936	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603658N / *Cooperative Engagement*	**Project (Number/Name)** 2039 / *COOP Engagement*

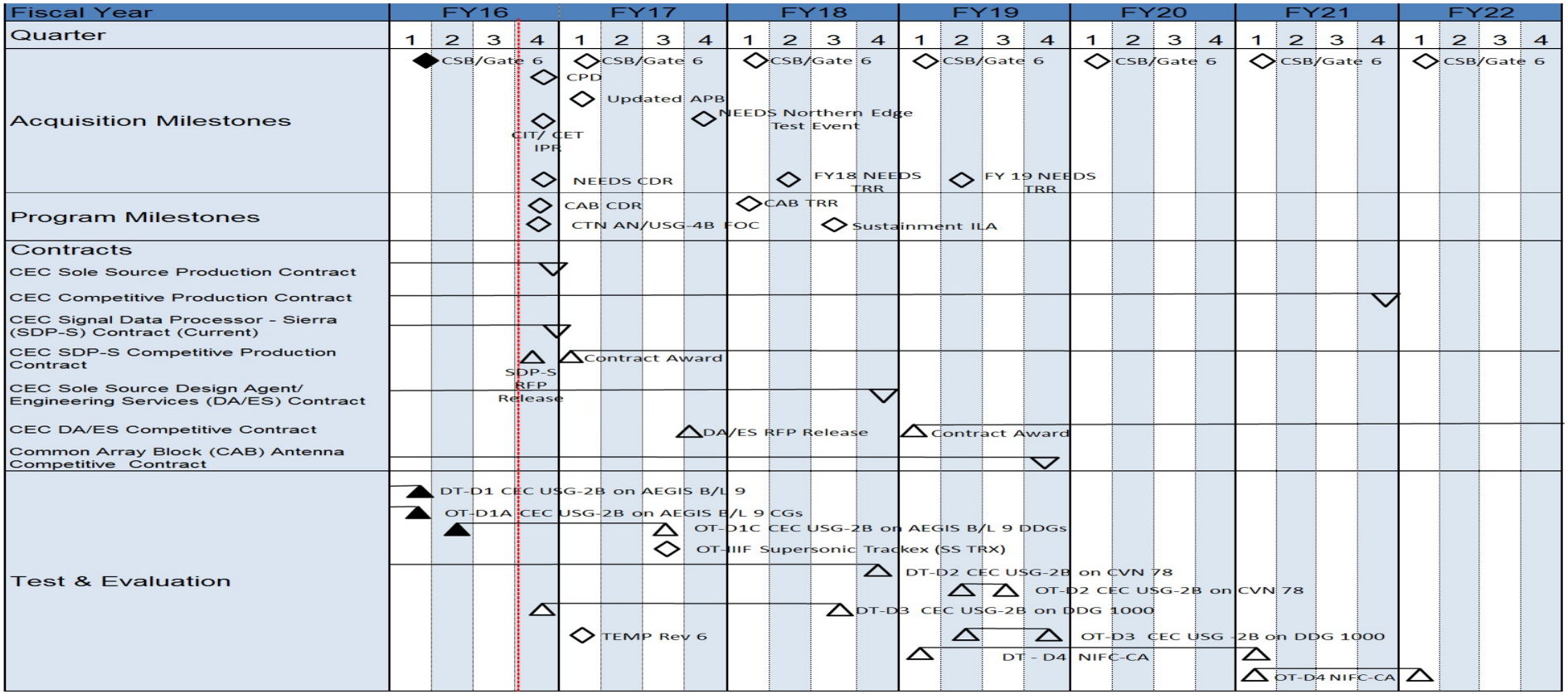

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603658N / *Cooperative Engagement*	**Project (Number/Name)** 2039 / *COOP Engagement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2039				
FY16 CSB/Gate 6	1	2016	1	2016
FY17 CSB/Gate 6	1	2017	1	2017
FY18 CSB/Gate 6	1	2018	1	2018
FY19 CSB/Gate 6	1	2019	1	2019
FY20 CSB/Gate 6	1	2020	1	2020
FY21 CSB/Gate 6	1	2021	1	2021
FY22 CSB/Gate 6	1	2022	1	2022
CPD	4	2016	4	2016
Updated APB	1	2017	1	2017
CIT/CET IPR	4	2016	4	2016
NEEDS Northern Edge Test Event	4	2017	4	2017
NEEDS CDR	4	2016	4	2016
FY18 NEEDS TRR	2	2018	2	2018
FY19 NEEDS TRR	2	2019	2	2019
CAB CDR	4	2016	4	2016
CTN AN/USG-4B FOC	4	2016	4	2016
CAB TRR	1	2018	1	2018
Sustainment ILA	3	2018	3	2018
CEC Sole Source Production Contract	1	2016	4	2016
CEC Competitive Production Contract	1	2016	4	2021
CEC Signal Data Processor - Sierra (SDP-S) Contract (Current)	1	2016	4	2016
SDP-S RFP	4	2016	4	2016

Exhibit R-4A, RDT&E Schedule Details: FY 2018 Navy		Date: May 2017
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603658N / *Cooperative Engagement*	**Project (Number/Name)** 2039 / *COOP Engagement*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
CEC SDP-S Competitive Production Contract	1	2017	4	2022
CEC Sole Source Design Agent/Engineering Services (DA/ES) Contract	1	2016	4	2018
DA/ES RFP Release	4	2017	4	2017
CEC DA/ES Competitive Contract	1	2019	4	2022
Common Array Block (CAB) Antenna Competitive Contract	1	2016	4	2019
DT-D1 CEC USG-2B on AEGIS B/L 9	1	2016	1	2016
OT-D1A CEC USG-2B on AEGIS B/L 9 CGs	1	2016	1	2016
OT-D1C CEC USG-2B on AEGIS B/L 9 DDGs	2	2016	3	2017
OT-IIIF Supersonic Trackex (SS TRX)	3	2017	3	2017
DT-D2 CEC USG-2B on CVN 78	1	2016	4	2018
OT-D2 CEC USG-2B on CVN 78	2	2019	3	2019
DT-D3 CEC USG-2B on DDG 1000	4	2016	3	2018
OT-D3 CEC USG-2B on DDG 1000	2	2019	4	2019
TEMP Rev 6	1	2017	1	2017
DT-D4 NIFC-CA	1	2019	1	2021
OT-D4 NIFC-CA	1	2021	1	2022