Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	121.986	133.611	123.012	-	123.012	118.817	117.581	118.672	118.705	Continuing	Continuing
0601: *Acft Handling & Service Equip*	4.496	1.849	6.522	-	6.522	7.786	8.600	7.311	3.266	Continuing	Continuing
0852: *Consolidated Auto Support System*	20.119	31.926	28.501	-	28.501	8.403	6.633	6.777	6.898	Continuing	Continuing
1041: *Acft Equip Repl/Maint Prog*	4.040	4.230	3.020	-	3.020	3.292	3.367	3.444	3.496	Continuing	Continuing
1355: *Propulsion and Power Component Improvement Program*	63.769	75.583	62.379	-	62.379	83.611	82.310	86.775	90.451	Continuing	Continuing
3189: *Digital I-TER*	0.900	-	0.001	-	0.001	-	-	-	-	0.000	0.901
3190: *Multi-Purpose Bomb Racks*	20.854	20.023	22.589	-	22.589	15.725	16.671	14.365	14.594	Continuing	Continuing
9999: *Congressional Adds*	7.808	-	-	-	-	-	-	-	-	0.000	7.808

A. Mission Description and Budget Item Justification

Project 0601 - Common Ground Equipment is a Naval Aviation Project to apply new technology to common support equipment necessary to support multiple aircraft. Project 0852 - Consolidated Automated Support System is a standardized Automated Test Equipment with computer assisted, multi-function capabilities to support the maintenance of aircraft subsystems and missiles. Project 1041 - Aircraft Equipment Reliability/Maintainability Improvement Program is the only Navy program that provides engineering support for in-service out-of-production aircraft equipment, and provides increased readiness at reduced operational and support cost. Project 1355 - Aircraft Engine Component Improvement Program develops reliability and maintainability and safety enhancements for in-service Navy aircraft engines, transmissions, propellers, starters, auxiliary power units, electrical generating systems, fuel systems, fuels, and lubricants. Project 3189 - is the Digital ITER program. The Digital ITER develops an increased capability to the existing BRU-42 Improved Triple Ejector Rack (ITER) for the AV-8B, which adds a multiple carriage capability for Smart Weapons. Project 3190 - is the Multi-Purpose Bomb Rack (MPBR). The MPBR will replace the BRU-41/42/33/55 and provide use for both tactical and training stores on one common rack. The MPBR will be integrated on the F/A-18E/F as part of this project.
Project 9999 is Congressional Adds.

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B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	134.612	133.611	135.621	-	135.621
Current President's Budget	121.986	133.611	123.012	-	123.012
Total Adjustments	-12.626	-	-12.609	-	-12.609
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-9.192	-			
• SBIR/STTR Transfer	-2.614	-			
• Program Adjustments	-	-	-11.035	-	-11.035
• Section 219 Reprogramming	-0.811	-	-	-	-
• Rate/Misc Adjustments	-	-	-1.574	-	-1.574
• Congressional General Reductions Adjustments	-0.009	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 9999: *Congressional Adds*		
Congressional Add: *Highly Conductive Lightweight Aircraft Sealant*	0.956	-
Congressional Add: *Laser Peening for P-3 Life Extension*	1.275	-
Congressional Add: *Arc Fault Circuit Breaker With Arc Location System*	0.797	-
Congressional Add: *Wireless Sensors For Navy Aircraft*	2.390	-
Congressional Add: *Lightweight Composite Structure Dev For Aerospace*	2.390	-
Congressional Add Subtotals for Project: 9999	7.808	-
Congressional Add Totals for all Projects	7.808	-

Change Summary Explanation

Schedule:

Project 0601: The Engineering Change Proposal documentation efforts for the Turboprop Engine Test Instrumentation program took longer to complete than originally scheduled. Milestones have been revised to reflect the new schedule. The contract for the prototype Shipboard Firefighting Vehicle (SFV) was awarded to The Entwistle Co. on 31 March 2010. It was a sole source type contract that took longer to award than originally anticipated. As a result, the

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Acquisition, Prototype Phase and Test and Evaluation milestones have been changed to reflect the current revised schedule. The SFV LRIP was removed after determination that it was not required.

Project 0852: No changes to the schedule since PB11.

Project 1041: No changes to schedule.

Project 3189: A FY10 BTR from PU 3190 to PU 3189 occured since PB11 to complete testing requirements for the Digital ITER program.

Project 3190: The MPBR contract was awarded in March 2010. Subsequently, the unsuccessful vendor lodged a protest which placed the contract in a stop work status. The contract was reaffirmed in September 2010. Due to the vendor protest, the following schedule changes have been made since PB11:

1) MPBR SFR changed from 4Q FY2010 to 2Q FY2011.
2) MPBR PDR changed from 4Q FY2010 to 4Q FY2011.
3) MPBR CDR changed from 2Q FY2011 to 3Q FY2012.
4) MPBR PCA changed from 2Q FY2013 to 2Q FY2014.
5) MPBR DT changed from 3Q FY2012 to 1Q FY2014.
6) MPBR OT changed from 3Q FY2013 to 2Q FY2014.
7) MPBR TRR was removed from schedule.
8) MPBR OA changed from 1Q FY2014 to 2Q FY2015.
9) MPBR OA Report changed from 1Q 2014 to 3Q 2015.
10) MPBR Vendor Testing changed from 3Q FY2011 through 2Q FY2012 to 4Q FY2011 through 4Q FY2013.
11) MPBR PRR changed from 1Q FY2014 to 2Q FY2015.
12) MPBR OARR added to 2Q FY2015.
13) MPBR OTRR changed from 4Q FY2013 to beyond FY2016.
14) MPBR LRIP 1 quantities changes from 75 units to 77 units.

Technical:
Not Applicable

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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0601: *Acft Handling & Service Equip*	4.496	1.849	6.522	-	6.522	7.786	8.600	7.311	3.266	Continuing	Continuing
Quantity of RDT&E Articles	3	2	2	0	2	0	0	0	0		

A. Mission Description and Budget Item Justification

Common Ground Equipment (CGE) is a Naval Aviation project to apply new technology to common support equipment necessary to support multiple systems/aircraft within the Navy. The common support equipment items developed with this budget are briefed to the Air Force, Army and Coast Guard for possible use in joint procurement in the production phase.

New Programs are Hydraulic Test Stand (HTS) in FY11 and Aircraft Spotting Dolly (ASD) in FY12. The HTS is an R&D program to develop next generation HTS for testing Aircraft Hydraulic system components at the intermediate level of maintenance, both ship and shore based. ASD is an R&D program to develop next generation ASD. New ASD requires low profile and alternative power to allow safe spotting of all aircraft aboard carrier/amphibious class ships.

The Expeditionary Airfields (EAF) program is a FY2012 New Start, formerly under PE 0603512N PU 2269. It will design, develop, test and field components of a heat resistant light weight airfield surfacing system and a heat resistant lighting system that will support the deployment of the Joint Strike Fighter in austere environments worldwide. These systems will provide EAF Marine Wing Support Squadrons with the required EAF equipments to install Forward Operating Bases (FOB) and Forward Arming and Refueling Points (FARP). With the deployment of this equipment, the Marine Wing Support Squadron (MWSS) can support all USMC aircraft allowing the Combatant Commanders the flexibility to deploy Aircraft Combat Elements (ACE) to meet anticipated threats.

PEMA funding supports the evaluation, testing and integration to develop Portable Electronic Maintenance Aids (PEMA) COTS solution for portable device deployments across the Naval Aviation Enterprise (NAE). PEMA is a portable device utilized by maintainers with the implementation of digital maintenance capabilities (digital publications, Interactive
Electronic Technical Manuals, Internet Protocol (IP) based data uploads, BInary digiT (BIT) data downloads, automated diagnostics, and planeside NALCOMIS). PEMAs are a mandatory display device supporting modern day Automated Maintenance Environment implemented for weapon systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Next Generation Munitions Handler (NGMH)	0.790	-	-	-	-
Articles:	1				
Description: R&D program to develop robotic weapons loader for both ship and shore with primary focus on targeting future weapons and aircraft. Plan is to support CVNX initiatives and to back-fit current CVs and amphibious ships. Utilize technology features developed under NGMH program. One lab prototype will upload/					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
download munitions in support of sea-based aviation, specifically the CVN-21 environment. It will be a self-powered diesel/electric unit with human amplification technology. Newly developed high-torque electric actuator/ motors will provide the robotics. Variable geometry Ionator wheels will provide the mobility for the vehicle. Self diagnostics for maintenance analysis will be included for the design. ***FY 2010 Accomplishments:*** Contractor and government prototype testing began in FY10. Contract for production units will be initiated in FY11.					
Title: Turboprop Engine Test Instrumentation (TETI) ***Articles:*** ***Description:*** The TETI program objective is to provide an integrated computer based measurement and automation system for Intermediate Maintenance level testing of Navy/Marine Turboprop engines. The acquisition approach is to develop, acquire, validate, deploy and support production configurations of TETI and Test Program Sets, utilizing the existing Shaft Engine Test Initiative technology, and integrate this capability into existing land based engine test systems. This enhanced capability will allow for full performance engine testing of the T56 Series Turboprop engines. An Engineering Change Proposal (ECP) will be developed to upgrade the existing engine test systems. ***FY 2010 Accomplishments:*** ECP completed. Contractor and government prototype testing will began in FY10. Contract for production units will be initiated in FY11.	1.307 1	-	-	-	-
Title: Shipboard Firefighting Vehicle (SFV) ***Articles:*** ***Description:*** The SFV program objective is to provide a safe reliable and maintainable way to support air capable ships with flight deck fire suppression during flight operations. The acquisition approach is to develop, acquire, validate, deploy and support production utilizing the lessons learned from the current firefighting vehicle and new emerging technology. This will enable integration of this capability into a new firefighting vehicle, which will be fully capable to support the current and future flight deck fire suppression missions. ***FY 2010 Accomplishments:***	2.399 1	0.910 1	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Prototype phase 50% completed in FY10. ***FY 2011 Plans:*** ECP will be completed by 4th quarter of FY11. Contractor and government prototype testing will be completed by the end of FY11. Contract for ECP kits will be initiated in 4th quarter of FY11.					
Title: Aircraft Spotting Dolly (ASD) ***Articles:*** ***Description:*** There are no commercially available towing vehicles that could even be modified to replace the capabilities of the present SD-2. An R & D effort will be required to design its replacement. Advances in batteries and alternating current motor drive systems in the past decade have made it feasible to design an electrically powered vehicle for the CV, CVN, and L-Class hanger deck spotting missions. Such a vehicle will be inherently more reliable, reduce maintenance, and eliminate the fumes and noise generated by a diesel engine. An electrically driven vehicle will provide much greater motion control for slow speeds to aid in the engagement to the aircraft nose gear. Proximity sensors will be incorporated to automatically stop the spotting dolly prior to accidental impact with the aircraft, other support equipment or bulkheads, increasing the safety of the spotting operations. The legacy ASD is close to thirty years old and experiencing parts obsolescence issues and general efficiency degradation. ***FY 2012 Base Plans:*** Initiate prototype development of ASD.	-	-	0.957 1	-	0.957 1
Title: Hydraulic Test Stand (HTS) ***Articles:*** ***Description:*** The HTS Program is to provide a single test stand to replace all of the existing hydraulic test units; HCTS, HCT-10, and Pump & Motor test stand. This will simplify supply support, reduce the stock system footprint, reduce training requirements, introduce new technology, consolidate space requirements in the hydraulic shops and eliminate the part obsolescence issues that are now beginning to emerge and grow. The requirements that cannot be met by commercial off the shelf (COTS) items are Shock, Vibration, Electromagnetic Interference, Military Van compatible, and hardened electrical components. These areas will all require R & D. ***FY 2011 Plans:***	-	0.939 1	0.388 1	-	0.388 1

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Initiate prototype development and contractor/government testing of HTS. ***FY 2012 Base Plans:*** Continue contractor/government testing of HTS.					
Title: Portable Electronic Maintenance Aid (PEMA) ***Articles:*** ***FY 2012 Base Plans:*** Evaluate, test and integrate evolving COTS solutions. Conduct test & evaluation of T/M/S peculiar software/ hardware requirements and network connectivity compliance across the GIG prior to deployment to the fleet by a yearly release cycle.	-	-	0.472 0	-	0.472 0
Title: Expeditionary Airfields (EAF) Matting ***Articles:*** ***Description:*** This program is a FY2012 New Start. The Expeditionary Airfields (EAF) program will design, develop, test and field components of a heat resistant light weight airfield surfacing system and a heat resistant lighting system that will support the deployment of the Joint Strike Fighter in austere environments worldwide. These systems will provide EAF Marine Wing Support Squadrons with the required EAF equipments to install Forward Operating Bases (FOB) and Forward Arming and Refueling Points (FARP). With the deployment of this equipment, the Marine Wing Support Squadron (MWSS) can support all USMC aircraft allowing the Combatant Commanders the flexibility to deploy Aircraft Combat Elements (ACE) to meet anticipated threats. ***FY 2012 Base Plans:*** Develop system requirements and Acquisition/Contract documentation to support the procurement and life cycle support of heat resistant/lightweight matting and heat resistant lighting. System Design and Development Contract will be awarded.	-	-	4.705 0	-	4.705 0
Accomplishments/Planned Programs Subtotals	4.496	1.849	6.522	-	6.522

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APN/0705: *Ground Support Equipment*	143.308	142.148	121.673	10.800	132.473	134.454	136.078	144.063	138.870	0.000	971.394
• OPN/4208: *Expeditionary Airfields*	45.662	8.429	8.561	47.000	55.561	8.728	8.877	9.030	9.183	0.000	145.470
• OPN/4264: *Portable Electronic Maintenance Aids*	4.895	12.812	7.875	0.000	7.875	8.075	5.676	4.392	4.472	0.000	48.197

D. Acquisition Strategy

CGE: This is a non ACAT program. Field activities propose tentative projects. Internal panel merits and selects projects. Field activities develop projects and submit results. Operational Advisory Group process selects projects to transition to procurement.

EAF: The program will use Full and Open competition contract for the system design and development of the EAF matting and lighting.

PEMA: The management approach includes the Program Management Office residing in the NAVAIR with MDA delegated to the NAVAIR CIO. The evolutionary development approach will be used to execute requirements. Contracting for the prime integrator will be via competitively awarded IDIQ contracts.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Dev-SFV	SS/CPFF	ENTWISTLE:HUDSON, MA	2.018	0.512	Mar 2011	-		-		-	0.000	2.530	2.530
Primary Hardware Dev-HTS	C/CPFF	TBD:TBD	-	0.586	Mar 2011	-		-		-	0.000	0.586	0.586
Systems Engineering-SFV	WR	NAWCAD:LAKEHURST, NJ	0.726	0.398	Nov 2010	-		-		-	0.000	1.124	
Systems Engineering-HTS	WR	NAWCAD:LAKEHURST, NJ	-	0.353	Nov 2010	0.299	Nov 2011	-		0.299	Continuing	Continuing	Continuing
Primary Hardware Dev--ASD	C/FFP	TBD:TBD	-	-		0.516	Mar 2012	-		0.516	0.000	0.516	0.516
Systems Engineering-ASD	WR	NAWCAD:LAKEHURST, NJ	-	-		0.441	Nov 2011	-		0.441	Continuing	Continuing	Continuing
Prior Year Prod Dev	Various	Various:Various	13.763	-		-		-		-	0.000	13.763	
Primary Hardware Dev-EAF	C/FFP	TBD:TBD	-	-		1.505	Apr 2012	-		1.505	7.925	9.430	9.430
Systems Engineering-EAF	WR	NAWCAD:LAKEHURST, NJ	-	-		1.960	Oct 2011	-		1.960	6.360	8.320	
		Subtotal	16.507	1.849		4.721		-		4.721			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Support	Various	Various:Various	8.857	-		-		-		-	0.000	8.857	8.857
Integrated Logistics Support-EAF	WR	NAWCAD:LAKEHURST, NJ	-	-		0.700	Dec 2011	-		0.700	1.300	2.000	
Eng & Tech Support-EAF	WR	NAWCAD:LAKEHURST, NJ	-	-		0.540	Oct 2011	-		0.540	4.840	5.380	
		Subtotal	8.857	-		1.240		-		1.240	6.140	16.237	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation - HTS	WR	NAWCAD:LAKEHURST, NJ	-	-		0.089	Dec 2011	-		0.089	Continuing	Continuing	Continuing
Operational T & E - PEMA	WR	NAWCAD:PAX RIVER, MD	-	-		0.472	Nov 2011	-		0.472	0.000	0.472	
Prior Year T & E	Various	Various:Various	0.500	-		-		-		-	0.000	0.500	
		Subtotal	0.500	-		0.561		-		0.561			

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	25.864	1.849		6.522		-		6.522			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
NEXT GENERATION MUNITIONS HANDLER (NGMH)				
Acquisition Milestones: Milestones: NGMH-MILESTONE C (MS C)	1	2011	1	2011
Acquisition Milestones: Milestones: NGMH-FULL RATE PRODUCTION (FRP) DECISION	3	2012	3	2012
Systems Development: NGMH-SHIPBOARD PROTOTYPE PHASE	1	2010	3	2010
Test & Evaluation: NGMH-CONTRACTOR AND GOVT RUN TESTING	1	2010	4	2010
Production Milestones: Milestones: NGMH-START LOW RATE INITIAL PRODUCTION (LRIP) 1 - OPN	1	2011	1	2011
Production Milestones: Milestones: NGMH-LOW RATE INITIAL PRODUCTION (LRIP) 3 DELIVERY - OPN	1	2012	1	2012
Production Milestones: Milestones: NGMH-FULL RATE PRODUCTION (FRP) START	3	2012	3	2012
TURBOPROP ENGINE TEST INSTRUMENTATION (TETI)				
Acquisition Milestones: Milestones: TETI-FULL RATE PRODUCTION (FRP) DECISION	3	2011	3	2011
Systems Development: Hardware Development: TETI-ECP DEV (TPS & ASSOCIATED HARDWARE)	1	2010	1	2010
Systems Development: Hardware Development: TETI-ECP COMPLETE	1	2010	1	2010
Test & Evaluation: TETI-GOVT RUN TESTING	1	2010	4	2010
Production Milestones: TETI-FULL RATE PRODUCTION (FRP) START	3	2011	3	2011
SHIPBOARD FIREFIGHTING VEHICLE (SFV)				
Acquisition Milestones: SFV-FULL RATE PRODUCTION (FRP) DECISION	4	2011	4	2011
Systems Development: Hardware Development: SFV-ECP DEVELOPMENT PROTOTYPE PHASE	1	2010	2	2011
Systems Development: Hardware Development: SFV-ECP COMPLETE	4	2011	4	2011

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test & Evaluation: SFV-CONTRACTOR AND GOVT RUN TESTING	1	2011	4	2011
AIRCRAFT SPOTTING DOLLY (ASD)				
Acquisition Milestones: Milestones: ASD-MILESTONE B	1	2012	1	2012
Acquisition Milestones: Milestones: ASD-MILESTONE C	4	2015	4	2015
Systems Development: Hardware Development: ASD-PROTOTYPE PHASE	1	2012	4	2014
Test & Evaluation: ASD-CONTRACTOR AND GOVT RUN TESTING	1	2013	3	2015
HYDRAULIC TEST STAND (HTS)				
Acquisition Milestones: Milestones: HTS-MILESTONE B	1	2011	1	2011
Acquisition Milestones: Milestones: HTS-MILESTONE C	4	2013	4	2013
Systems Development: Hardware Development: HTS-PROTOTYPE PHASE	1	2011	2	2013
Test & Evaluation: HTS-CONTRACTOR AND GOVT RUN TESTING	4	2011	4	2013
Production Milestones: HTS-START LOW RATE INITIAL PRODUCTION (LRIP) 1 - APN	2	2014	2	2014
Production Milestones: HTS-FULL RATE PRODUCTION (FRP) START	1	2015	1	2015
PORTABLE ELECTRONIC MAINTENANCE AIDS (PEMA)				
Systems Development: Contract Award: Contract Award 3	1	2012	1	2012
Systems Development: Contract Award: Contract Award 4	1	2013	1	2013
Systems Development: Contract Award: Contract Award 5	1	2014	1	2014
Systems Development: Contract Award: Contract Award 6	1	2015	1	2015
Systems Development: Contract Award: Contract Award 7	1	2016	1	2016
Systems Development: Requirements: Requirements Study Complete 3	2	2012	2	2012
Systems Development: Requirements: Requirements Study Complete 4	2	2013	2	2013
Systems Development: Requirements: Requirements Study Complete 5	2	2014	2	2014
Systems Development: Requirements: Requirements Study Complete 6	2	2015	2	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 0601: *Acft Handling & Service Equip*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Systems Development: Requirements: Requirements Study Complete 7	2	2016	2	2016
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 3	3	2012	3	2012
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 4	3	2013	3	2013
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 5	3	2014	3	2014
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 6	3	2015	3	2015
Systems Development: Engineering Change Proposal By T/M/S: Engineering Change Proposal By T/M/S, ECP 7	3	2016	3	2016
Systems Development: Image Development By T/M/S: Image Development By T/M/S 3	3	2012	3	2012
Systems Development: Image Development By T/M/S: Image Development By T/M/S 4	3	2013	3	2013
Systems Development: Image Development By T/M/S: Image Development By T/M/S 5	3	2014	3	2014
Systems Development: Image Development By T/M/S: Image Development By T/M/S 6	3	2015	3	2015
Systems Development: Image Development By T/M/S: Image Development By T/M/S 7	3	2016	3	2016
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 3	4	2012	4	2012
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 4	4	2013	4	2013
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 5	4	2014	4	2014
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 6	4	2015	4	2015
Test & Evaluation: Functional Regression Testing: Functional/Regression Testing 7	4	2016	4	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 3	4	2012	4	2012
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 4	4	2013	4	2013
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 5	4	2014	4	2014
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 6	4	2015	4	2015
Test & Evaluation: Independent Validation & Verification Testing: Independent Validation & Verification Testing 7	4	2016	4	2016
Deliveries: Production Deliveries: Production Delivery, Release 3	4	2012	4	2012
Deliveries: Production Deliveries: Production Delivery, Release 4	4	2013	4	2013
Deliveries: Production Deliveries: Production Delivery, Release 5	4	2014	4	2014
Deliveries: Production Deliveries: Production Delivery, Release 6	4	2015	4	2015
Deliveries: Production Deliveries: Production Delivery, Release 7	4	2016	4	2016
EXPEDITIONARY AIRFIELDS (EAF) MATTING				
Systems Development: System Design & Development: EAF-SYSTEM DESIGN & DEVELOPMENT (SDD)	1	2012	1	2015
Systems Development: Reviews: EAF-PROGRAM DESIGN REVIEW	1	2013	1	2013
Systems Development: Reviews: EAF-CRITICAL DESIGN REVIEW	4	2013	4	2013
Test & Evaluation: Formal Testing: EAF-FORMAL TESTING	1	2014	4	2015
Production Milestones: Contract Awards: EAF-CONTRACT AWARD	3	2012	3	2012

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 0852: *Consolidated Auto Support System*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0852: *Consolidated Auto Support System*	20.119	31.926	28.501	-	28.501	8.403	6.633	6.777	6.898	Continuing	Continuing
Quantity of RDT&E Articles	2	7	7	0	7	0	0	0	0		

A. Mission Description and Budget Item Justification

The eCASS (electronic Consolidated Automated Support System) project is the system design and development of the latest generation of the US Navy's CASS family of automatic test systems. The legacy CASS system was designed and developed in the 1980's and commenced fielding in 1992. As such, it is reaching the end of its useful life due to obsolescence issues. eCASS is the replacement system for legacy CASS systems, which provides Naval aircraft avionics component maintenance and repair support at Intermediate and Depot maintenance facilities both shore-based and afloat. As a CASS replacement program, the eCASS program objectives remain the same as that of CASS. Specifically: (1) increase material readiness; (2) reduce life cycle costs; (3) improve tester sustainability at depot and intermediate maintenance levels; (4) reduce proliferation of unique test equipment, and (5) provide test capability for existing and emerging avionics/electronics aircraft weapon systems.

The Test Technology Development project involves analysis, application, maturation, integration and testing of emerging electronic, mechanical and optical test technologies for potential military utility in support of Naval avionics testing and repair. Specific technologies being developed include synthetic instruments, new Advanced Targeting Forward Looking Infrared (ATFLIR) electro-optics capabilities, multi-analog test capability to enable functional testing, and modernization elements for the CASS family of automatic test systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: eCASS Development	19.406	31.107	27.676	-	27.676
Articles:	1	6	6		6
Description: Develop, integrate and test an Automatic Test System (ATS) to replace legacy CASS systems. The new ATS will be compatible with and capable of hosting the hundreds of existing Test Programs that are currently utilized on legacy CASS at the Intermediate and Depot levels of maintenance, as well as any emerging Test Programs that may require greater test capability than provided by legacy CASS.					
FY 2010 Accomplishments: Awarded contract to develop, integrate and test an ATS to replace legacy CASS systems. Completed CASS Characterization, performed Management Systems Assessment, performed Schedule Risk Assessment, established Earned Value Management baseline, and performed System Requirements Review.					
FY 2011 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 0852: *Consolidated Auto Support System*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Perform eCASS system Preliminary Design Review (PDR) and perform Advance Development Model integration. ***FY 2012 Base Plans:*** Perform eCASS system Critical Design Review, procure initial Engineering Development Models, initiate Test Program Set integration, conduct Test Readiness Reviews, and commence Developmental Test (DT)-B1 and DT-B2 test events.					
Title: Test Technology Development ***Articles:*** ***Description:*** Develops, integrates, and evolves enhanced test capabilities and technologies for insertion into the CASS family of test systems. As weapon system electronics evolve, new test capabilities are required to support advanced systems. Existing test capabilities must be extended in range, accuracy, time and frequency domains in order to sustain the required test accuracy ratios for weapon systems support (the automatic test system must be four times as accurate as the asset being tested). ***FY 2010 Accomplishments:*** Initiated the development, integration, and evolution of enhanced test capabilities and technologies for insertion into the CASS family of test systems. ***FY 2011 Plans:*** Continue to develop, integrate, and evolve enhanced test capabilities and technologies for insertion into the CASS family of test systems. ***FY 2012 Base Plans:*** Continue to develop, integrate, and evolve enhanced test capabilities and technologies for insertion into the CASS family of test systems.	0.713 1	0.819 1	0.825 1	-	0.825 1
Accomplishments/Planned Programs Subtotals	20.119	31.926	28.501	-	28.501

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APN/0705: *Common Ground Equip APN-7*	59.491	52.909	75.614	0.000	75.614	96.364	97.642	99.460	100.587	0.000	582.067

D. Acquisition Strategy

Formal test technology reviews with industry are conducted annually (cooperative Joint Services initiative) to define maturity of needed technologies. Further studies are conducted as needed. Procurement strategy is determined by market survey and cooperative opportunities.

E. Performance Metrics

Milestone Reviews

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hdw Dev eCASS	C/CPIF	LOCKHEED MARTIN:ORLANDO, FL	16.088	24.600	Dec 2010	23.426	Dec 2011	-		23.426	Continuing	Continuing	Continuing
Primary Hdw Dev Test Technology	C/CPFF	Various:Various	0.413	0.469	Mar 2011	0.450	Dec 2011	-		0.450	Continuing	Continuing	Continuing
Prior Year Prod Dev	Various	Various:Various	28.397	-		-		-		-	0.000	28.397	
		Subtotal	44.898	25.069		23.876		-		23.876			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
eCASS Support	WR	Various:Various	0.700	4.278	Jan 2011	2.000	Jan 2012	-		2.000	Continuing	Continuing	Continuing
eCASS Support	WR	NAWC AD:Lakehurst, NJ	2.400	2.000	Jan 2011	2.000	Jan 2012	-		2.000	Continuing	Continuing	Continuing
Test Technology Support	WR	Various:Various	0.200	0.250	Jan 2011	0.275	Jan 2012	-		0.275	Continuing	Continuing	Continuing
Prior Year Support	Various	Various:Various	12.403	-		-		-		-	0.000	12.403	
		Subtotal	15.703	6.528		4.275		-		4.275			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
eCASS Travel	WR	Various:Various	0.218	0.229	May 2011	0.250	May 2012	-		0.250	Continuing	Continuing	Continuing
Test Tech Travel	WR	Various:Various	0.100	0.100	May 2011	0.100	May 2012	-		0.100	Continuing	Continuing	Continuing
Prior Year Mgmt	Various	Various:Various	1.669	-		-		-		-	0.000	1.669	
		Subtotal	1.987	0.329		0.350		-		0.350			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy			DATE: February 2011
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	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	62.588	31.926		28.501		-		28.501			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0205633N: *Aviation Improvements*	**PROJECT** 0852: *Consolidated Auto Support System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
electronic Consolidated Automated Support System (eCASS)				
Acquisition Milestones: Milestones: eCASS Milestone B	2	2010	2	2010
Systems Development: Hardware and Software Development: eCASS Development Contract Award	2	2010	2	2010
Systems Development: Hardware and Software Development: eCASS System Development	2	2010	2	2015
Test & Evaluation: Development Testing: eCASS DT-B1 & B2 Testing	3	2012	4	2012
Test & Evaluation: Development Testing: eCASS DT-C1 Testing	3	2013	4	2013
Test & Evaluation: Development Testing: eCASS DT-C2 Testing	3	2014	4	2014
Production Milestones: eCASS LRIP 1	2	2013	2	2013
Production Milestones: eCASS LRIP 2	2	2014	2	2014

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1041: *Acft Equip Repl/Maint Prog*	4.040	4.230	3.020	-	3.020	3.292	3.367	3.444	3.496	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Aircraft Equipment Reliability/Maintainability Improvement Program (AERMIP) is the only Navy program which provides Research, Development, Test & Evaluation engineering support specifically for in-service, out-of-production aircraft equipment. AERMIP increases readiness through Reliability and Maintainability (R&M) and safety improvements to existing systems and equipment installed in Naval aircraft. It also provides a transition vehicle to deploy Total Ownership Cost reduction initiatives through flight-test support and Fleet Test & Evaluation. It meets affordable readiness objectives by providing a cost-effective solution to obsolescence problems encountered when service lives are extended. AERMIP promotes commonality and standardization across aircraft platform lines and among the services through extension of application and use of non-developmental items. AERMIP also decreases life cycle costs through reduced operational and support costs. AERMIP facilitates the Operational, Safety and Improvement Program by applying proven low-risk solutions to current fleet problems. AERMIP also funds high-priority flight testing which is not associated with any acquisition or development program under the Flight Test General task. AERMIP will demonstrate the feasibility of using cavitation peening for survivability improvement of ceramic armor and validate innovative coating techniques to enhance erosion resistance of engine blades and rotor blades in support of overseas operations.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Avionics and Wiring	1.075	0.997	0.860	-	0.860
Articles:	0	0	0		0
FY 2010 Accomplishments: Transitioned Arc Fault Circuit breaker technology to the field through development of specifications with the appropriate Society of Automotive Engineers committee, assisting with qualification of the technology and placing Arc Fault technology on the Qualified Products List. Generated operating data from physics-based models for generator diagnostics and health management. Silicon-Controlled Rectifier tester circuit design and simulations for power, sensing and data acquisition circuits completed. Continued refinement of algorithm software and hardware for battery testing and prognostics including testing at contractor and government sites. Performed ground testing on front-line aircraft.					
FY 2011 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Qualify materials or pieces of equipment and the procedures/process required for their implementation. Pursue next-generation wiring, battery, and generator diagnosis and prognostics methods, and prove the applicability to Naval aviation. Address avionics-related reliability issues impacting multiple aircraft platforms. ***FY 2012 Base Plans:*** Qualify additional materials or pieces of equipment and the procedures/process required for their implementation. Test and evaluate off-board diagnostic equipment for generator diagnostics/prognostics. Refine algorithms for multiple battery models, including lithium chemistries. Continue testing in aircraft simulated environment. Pursue next-generation wiring, battery, and generator diagnosis and prognostics methods, and prove the applicability to Naval aviation. Address avionics-related reliability issues impacting multiple aircraft platforms.					
Title: Air Vehicle	1.748	1.582	1.350	-	1.350
Articles:	0	0	0		0
FY 2010 Accomplishments: Completed preliminary testing of low-temperature paints and primers. Fabricated calibrated notches on titanium tubing, made replicas of the notches and evaluated measurement technologies. Selected the best technology and initiated procurement of test item. Prepared screening matrix and panels for testing of non chromate adhesive bond primers. Completed phase 1 of evaluation of primers and analysis of failure modes. Demonstrated sand erosion capability using accelerated sand to test erosion characteristics of critical flight components. Completed evaluation of high nitrogen stainless steel for use in environments requiring high strength and resistance to corrosion. Evaluate new methods of corrosion prevention control, including human factors approach. ***FY 2011 Plans:*** Qualify materials or pieces of equipment and the procedures/process required for their implementation. Develop new methods of structural repair. Evaluate new methods of corrosion prevention control. Evaluate non-solvent plasma method to remove hydraulic contamination. Pursue subsystem improvements by increasing component reliability. Finalize titanium tubing crack detection methodology and tooling. Qualify and implement advanced non-chrome primers with corrosion protection properties. ***FY 2012 Base Plans:*** Qualify additional materials or pieces of equipment and the procedures/process required for their implementation. Develop new methods of structural repair with focus on lightweight, high-cost, and low					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
observability platforms. Expand focus of human factors and advanced materials/coatings in corrosion prevention control. Expand use of protective coatings on aircraft components to resist abrasion, wear, and corrosion, while lowering maintenance hours and cost.					
Title: Systems Engineering Revitalization ***Articles:*** ***FY 2010 Accomplishments:*** Incorporated systems engineering process approach to identify reliability and maintainability assessments during the system development phase of the program, successfully demonstrate R&M levels during test and evaluation, and sustain R&M levels throughout the system's life-cycle. Refined effort on correlations of applied leading indicators and validation of the findings. Expanded into an aligned four-phase system engineering process and developed improvements to the Systems Engineering Technical Review (SETR) process. Developed an effective communications strategy to maximize program execution. Developed a web-based tool for the SETR checklists and updated two of the fourteen SETR event checklists. ***FY 2011 Plans:*** Continue validation of leading indicators for effectiveness. Continue development of improved four-phase system and SETR process. Using communications strategy developed in previous year and web-based tool, deliver usable validated products to engineering and program teams. ***FY 2012 Base Plans:*** Complete initial version of the SETR web-based checklist tool. Identify web-tool critical limitations and implement changes and improvements within the tool. Investigate systems engineering processes and tools across Naval Air Systems Command domains inclusive of end item performance derivation from operational requirements and the associated concept of operations, with the derivation remaining relevant to the mission and system architectures.	0.936 0	0.939 0	0.810 0	-	0.810 0
Title: NAE Corrosion ***Articles:*** ***FY 2010 Accomplishments:*** Flight Line Canopy Shelters technical report was drafted. Documenting reduction in corrosivity effects, increased maintenance capability in mildly inclement weather, and improved maintainer quality of life for ongoing EA-6B and F/A-18 studies. Preliminary field evaluations of tape and adhesive remover completed at North Island, California, on F/A-18 radomes and leading edge tapes. Draft NAVAIR technical authorization package was	0.281 0	0.712 0	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
initiated, including process caveats and restrictions. National Stock Numbers were issued through Defense Logistics Agency for Tape and Adhesive Residue Remover material kits in 1 gallon/1 pint sizes. Controlled Solidification Investment Cast (CSIC) aluminum gearbox trade study assessment was completed and reported for the H-60 Main Gearbox. Improvements in corrosion resistance, stiffness, and component flight-hour lifetimes are expected. Identified and formulated developmental conductive fillers and resin systems. Currently producing laboratory scale materials for full corrosion, electromagnetic interference, and conductivity characterizations. ***FY 2011 Plans:*** Continue to design, test, and implement CSIC aluminum gearboxes as alternatives to magnesium alloy gearboxes. Demonstrate and validate conducting paint and sealants with less noble galvanic potential and which provide acceptable electrical performance with much lower propensity to cause corrosion of airframe and components. Investigate products such as advanced performance topcoats designed to decrease cost of re-painting aircraft by extending service life of paint.					
Accomplishments/Planned Programs Subtotals	4.040	4.230	3.020	-	3.020

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

This is a non-ACAT program. Procurement strategy is determined by market survey and cooperative opportunities.

E. Performance Metrics

The AERMIP program will, at a minimum, fund 8 to 15 projects a year that investigate and evaluate R&M improvements to in-service, out-of-production aircraft equipment. AERMIP projects will have a greater than 75% success rate of insertion into Department of the Navy warfighting systems or support infrastructure.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
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Product Development ($ in Millions)

				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sys Eng - Avionics/Wiring	WR	NAWCAD:Patuxent River, MD	3.793	0.805	Nov 2010	0.512	Nov 2011	-		0.512	Continuing	Continuing	Continuing
Sys Eng - Avionics/Wiring	C/FFP	Various:Various	0.314	0.192	Mar 2011	-		-		-	Continuing	Continuing	Continuing
Sys Eng - Avionics/Wiring	C/FFP	GEM Power:Redlands, CA	-	-		0.108	Mar 2012	-		0.108	0.000	0.108	
Sys Eng - Avionics/Wiring	C/FFP	PCKA:West Lafayette, IN	-	-		0.146	Mar 2012	-		0.146	0.000	0.146	
Sys Eng - Air Vehicle	WR	NAWCAD:Patuxent River, MD	5.158	0.971	Nov 2010	0.795	Nov 2011	-		0.795	Continuing	Continuing	Continuing
Sys Eng - Air Vehicle	WR	FRC:San Diego, CA	0.458	0.050	Dec 2010	0.109	Dec 2011	-		0.109	Continuing	Continuing	Continuing
Sys Eng - Air Vehicle	WR	FRC:Cherry Point, NC	0.378	0.050	Dec 2010	0.108	Dec 2011	-		0.108	Continuing	Continuing	Continuing
Sys Eng - Air Vehicle	WR	FRC:Jacksonville, FL	0.410	0.050	Dec 2010	0.103	Dec 2011	-		0.103	Continuing	Continuing	Continuing
Sys Eng - Air Vehicle	C/FFP	Various:Various	0.615	0.100	Apr 2011	0.089	Mar 2012	-		0.089	0.717	1.521	1.529
Sys Eng - SE Revitalization	WR	NAWCAD:Patuxent River, MD	0.778	0.022	Dec 2010	0.008	Dec 2011	-		0.008	Continuing	Continuing	Continuing
Sys Eng - SE Revitalization	C/FFP	L-3 Communications:Marlton, NJ	1.142	0.917	Apr 2011	0.802	Mar 2012	-		0.802	Continuing	Continuing	Continuing
Sys Eng - NAE Corrosion	WR	NAWCAD:Patuxent River, MD	0.257	0.357	Dec 2010	-		-		-	Continuing	Continuing	Continuing
Sys Eng - NAE Corrosion	WR	FRC:San Diego, CA	-	0.100	Dec 2010	-		-		-	Continuing	Continuing	Continuing
Sys Eng - NAE Corrosion	WR	FRC:Cherry Point, NC	-	0.125	Dec 2010	-		-		-	Continuing	Continuing	Continuing
Sys Eng - NAE Corrosion	WR	FRC:Jacksonville, FL	-	0.130	Dec 2010	-		-		-	Continuing	Continuing	Continuing
Prior Year Prod Dev	Various	Various:Various	1.504	-		-		-		-	0.000	1.504	
		Subtotal	14.807	3.869		2.780		-		2.780			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Studies & Analyses - NAE Corrosion	WR	NAWCAD:Patuxent River, MD	0.025	0.091	Dec 2010	-		-		-	0.000	0.116	
Prior Year Support	Various	Various:Various	12.364	-		-		-		-	0.000	12.364	
		Subtotal	12.389	0.091		-		-		-	0.000	12.480	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD:Patuxent River, MD	0.955	0.250	Nov 2010	0.240	Nov 2011	-		0.240	Continuing	Continuing	Continuing
Travel	WR	NAWCAD:Patuxent River, MD	0.074	0.020	Nov 2010	-	Nov 2011	-		-	Continuing	Continuing	Continuing
Prior Year Mgmt	Various	Various:Various	1.877	-		-		-		-	0.000	1.877	
		Subtotal	2.906	0.270		0.240		-		0.240			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	30.102	4.230		3.020		-		3.020			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acft Equip Repl/Maint Prog				
Avionics & Wiring: High-Speed Bus Switching	1	2010	4	2011
Avionics & Wiring: Aircraft Battery Diagnostic & Prognostic System	1	2010	4	2012
Avionics & Wiring: Generator System Diagnostics & Health	1	2010	4	2012
Avionics & Wiring: Investigate High Value Return on Investment	1	2010	4	2016
Avionics & Wiring: Wiring Diagnostics and Prognostics	1	2010	4	2013
Avionics & Wiring: Avionics Reliability Enhancements	1	2010	1	2011
Air Vehicle: Improved Corrosion Preventative Compounds	1	2010	4	2015
Air Vehicle: Corrosion Prevention and Control	1	2010	4	2013
Air Vehicle: Advanced Methods of Structural Repair	1	2010	4	2013
Air Vehicle: Subsystem Improvement Initiatives	1	2010	4	2013
Air Vehicle: Sand & Erosion Resistance of APU Impeller	1	2010	4	2011
Air Vehicle: Non-Solvent Plasma	1	2011	4	2012
Air Vehicle: Titanium Tubing for Hydraulic Systems	1	2010	4	2011
Air Vehicle: Investigate High Value Return on Investment	1	2010	4	2016
Air Vehicle: Ambient Temperature Bonding	1	2011	4	2012
SE Revitalization: Improved Technical Excellence of Acquisition Programs	1	2010	4	2016
NAE Corrosion Improvement: Flight Line Canopy Shelters	1	2010	4	2011
NAE Corrosion Improvement: Tape & Adhesive Remover	1	2010	4	2011
NAE Corrosion Improvement: Aluminum Gearboxes	1	2010	4	2011
NAE Corrosion Improvement: Conducting Paints & Sealants	1	2010	4	2011
NAE Corrosion Improvement: Investigate High Value Return on Investment	1	2010	4	2011

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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
1355: *Propulsion and Power Component Improvement Program*	63.769	75.583	62.379	-	62.379	83.611	82.310	86.775	90.451	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Aircraft Engine Component Improvement Program (CIP) provides the only source of critical design and development engineering support to resolve safety, reliability and maintainability deficiencies of in-service Navy aircraft propulsion systems. The highest priority issues CIP addresses concern safety-of-flight deficiencies which account for approximately 80% of CIP efforts. The program also corrects service-revealed deficiencies, improves Operational Readiness and Reliability and Maintainability, and reduces platform Life Cycle Cost. Budgets are allocated across platform-specific teams and multi-platform product support teams based upon long term strategies to achieve safety and affordable readiness goals; the R-3 exhibit details annual portions of those long-term plans. CIP tasks have reduced the rate of in-flight aborts, safety incidents, non-mission capable rates, scheduled and unscheduled engine removals, maintenance work hours, and overall cost of ownership. This is accomplished through the maintenance and validation of specification performance, testing to qualify engineering changes, verifying life limits, and improving the inherent reliability of the propulsion system as an integral part of Reliability Centered Maintenance initiatives. Historically, the missions, tactics, and environmental exposure of military aircraft systems change to meet new threats or operational demands, and often result in unforeseen problems, which if not corrected, can cause critical safety/readiness degradation, such as those experienced during OPERATIONS DESERT SHIELD/DESERT STORM, ENDURING FREEDOM, and IRAQI FREEDOM due to sand erosion. In addition, new problems arise through actual fleet deployment and usage of the aircraft. System Development programs, while geared to resolve as many problems as possible before deployment, cannot duplicate actual operations or account for the vast array of environmental and usage variables, particularly when aircraft missions vary from those that the aircraft was designed to perform. Therefore, it has been found that CIP can provide an immediate engineering response to these flight-critical problems and accelerated engine testing can avoid potential problems. CIP starts after development and Navy acceptance of the first production article and addresses usage and life problems not covered by warranties. CIP addresses engines, transmissions, propellers, starters, auxiliary power units, electrical generating systems, aircraft wiring, and fuel and lubricant systems. CIP efforts continue over the system's life, gradually decreasing to a minimum level sufficient to maintain the reliability, and decrease the operating costs, of older inventory. CIP is a highly leveraged and cooperative tri-service program with Foreign Military Sales participation.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: P3, E2, C2, C130 (T56)	6.283	4.873	5.990	-	5.990
Articles:	0	0	0		0
FY 2010 Accomplishments: A 150 Reduction Gear Box (RGB) Rig test was completed to demonstrate the NP2000 to aircraft interface for a legacy application. Completed Analytical Condition Inspections on a 6300 hr RGB and a 2100 hr Power Section. Successfully performed an engine fit check for a prototype oil supply tube which will remove a current source					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
for oil leaks. Tested an alternate method, Feature Based Life Assessment, of clearing lives on fatigue critical parts; this alternative much less expensive than spin testing. Initiated combustor liner durability improvement redesigns. Maintained life management analysis to ensure safe operation of high time parts. Evaluated new compressor blade coating -improves erosion/corrosion resistance and increases time on wing. Initiated C-2 engine reliability improvement study. ***FY 2011 Plans:*** Conduct analytical condition inspections of high time hardware in order to identify new reliability degraders. Qualify redesigned combustor liner. Maintain life management analysis to ensure safe operation of high time parts. Continue to investigate all service revealed deficiencies. Engineering change for new compressor blade coating. Redesigns for C-2 engine reliability improvements. ***FY 2012 Base Plans:*** Redesign the Aft Cone-Adaptor significant engine removal contributor. Begin design and fabrication of a replacement to the current electronic control system which will no longer be repairable due to obsolescence. Complete further testing on in-service hardware to extend the T1 blade re-use limit. Continue the Analytical Condition Inspections program. Qualify redesigned combustor liner. Continue to investigate all service revealed deficiencies. Redesigns for C-2 engine reliability improvements, Scavenge Oil System Improvements. Initiate Gearbox improvements. Improve turbine vane durability for improve engine reliability.					
Title: E2/C2/C130/P3 (Props)	3.827	1.451	1.450	-	1.450
Articles:	0	0	0		0
FY 2010 Accomplishments: Conducted analytical condition inspections of life limited hub to provide extension of life limit to the fleet and to identify any new safety or reliability failure modes. Continued to investigate all service revealed deficiencies. Initiated engineering change for Electronic Propeller Control Software Upgrade, NP2000 Bolt Torque Change, Actuator Front Yoke Plate Redesign, NP2000 Heater Lead Redesign, NP2000 Resistant Valve Upgrade, and NP2000 Check Valve Upgrade. Completed Class II engineering change for pump housing corrosion coating, NP2000 Hub Dowel Pin Repair. Continued E-2 propeller active balance development. Initiated P-3/C-130 propeller taper bore corrosion testing - improve corrosion resistance. Initiated NP2000 Control System Working model for engineering investigations and improved fleet troubleshooting charts. ***FY 2011 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Complete NP2000 rear cone analysis and redesign. Test and qualify E-2 propeller active balance system. Continue NP2000 analytical condition inspection to identify new reliability degraders. Initiate redesign of NP2000 rear cone. ***FY 2012 Base Plans:*** Continue research and testing of potential NP2000 Blade Erosion Coatings. Complete P-3/C-130 propeller taper bore corrosion testing and implement design change as required. Continue build of NP2000 Control System Working Model. Continue to investigate all service revealed deficiencies.					
Title: EA-6B (J52) ***Articles:*** ***FY 2010 Accomplishments:*** 4.5 bearing Engineering Change Proposal approved allowing installations of the new bearing to begin in FY 2011. New torque values and tools for the 4.5 bearing inner race nut will be developed. New serviceable limits will be submitted for both turbine shafts as well as the compressor rear hub allowing the reduction of scrapped hardware. Incorporate a more flexible rear fuel flow meter bracket. Maintenance awareness will be presented at Operational & Intermediate levels. ***FY 2011 Plans:*** Start incorporation of the new 4.5 bearing, new 4.5 bearing inner race nut torque value and torque tooling. Continue FY2010 plan. Maintenance awareness will be presented at Operational & Intermediate levels. Develop a Thermal Barrier Coating for the combustion chamber interior surfaces. Develop a repair for the wear found in the inlet case vane driver boss replacement. ***FY 2012 Base Plans:*** Complete incorporation of the new 4.5 bearing, new 4.5 bearing inner race nut torque value and torque tooling. Maintenance awareness will be presented at Operational & Intermediate levels. Install a Thermal Barrier Coating for the combustion chamber interior surfaces. Implement a repair for the wear found in the inlet case vane driver boss replacement.	2.616 0	2.639 0	1.620 0	-	1.620 0
Title: Mature Aircraft (J85) ***Articles:*** ***FY 2010 Accomplishments:***	0.789 0	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Approved the Main Fuel Control Engineering Change Proposal which is to address fuel leaks to save removals and address a top degrader. Implemented After Burner light off margin test and false P3 input to simulate altitude to check the health of the engine before flight. Implemented new Main Fuel Control Accel schedule calibration at Depot. After Burner no-lights have decreased.					
Title: SH-60B/F, HH-60H, MH-60R/S (T700) ***Articles:*** ***FY 2010 Accomplishments:*** Conducted tail gear box output bevel gear crack propagation testing and update fleet inspection requirements, if required. Closed out of T700 Hot Restart Investigation and begin incorporation of T700 Hot Restart stall mitigation through design changes. Identified cost and readiness degraders on the T700 and H-60 drive system. ***FY 2011 Plans:*** Complete T700 hot restart stall mitigation through design changes. Begin redesign work to reduce impact of cost and readiness drivers for the engine and drive system. ***FY 2012 Base Plans:*** Continue redesign work to reduce impact of cost and readiness drivers for the T700 engine. Continue a Fleet Leader of the Automatic Wire Analyzer at Naval Air Station North Island to train operators, develop procedures, and measure effectiveness. Continue the redesign of the Main Transmission Gearbox from Magnesium to Aluminum.	4.142 0	3.782 0	2.640 0	-	2.640 0
Title: H-1 (T400/T700) ***Articles:*** ***FY 2010 Accomplishments:*** Initiated Safety/Qualification testing on Lithium Polymer (LiPoly) battery for the AH-1W. Worked feasibility studies for T700 Enhanced Digital Engine Control Unit and T700 Overspeed. Support common T700 engine projects. ***FY 2011 Plans:*** Provide Build Process Efficiencies for increased reliability and cost reduction. Address T400 parts obsolescence. ***FY 2012 Base Plans:***	0.298 0	0.352 0	1.084 0	-	1.084 0

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Begin development of T700-401 engine harness testor. Complete LiPoly battery for H-1 upgrades. Continue support of common T700 engine projects.					
Title: AV-8B (F402) ***Articles:*** ***FY 2010 Accomplishments:*** Engineering Change Proposals (ECPs) submitted for improvements to oil breather vent pipe, low pressure compressor stage one vanes with damping foil and low plasticity burnishing, incipient blockage indicator, low pressure compressor stage three sealing strips, high pressure turbine stage one nozzle guide vane locating ring, anti-vibration mount for compressor discharge pressure transducer, low pressure compressor stage two and three with hard face coating, fuel metering unit pressure drop regulator, hydro mechanical unit modifications, and revised bearing oil feed pipe. Designed activity for low pressure compressor stage one, two, and three blades for increased foreign object damage tolerance through application of low plasticity burnishing, analysis for extending the lives for critical rotating part lives, redesign for fuel leak for Enhanced Variable Inlet Guide Vane Control System (EVICS), Hydromechanical Unit (HMU) permanent magnet alternator, redesign for fuel manifold pipe leakage. ***FY 2011 Plans:*** ECPs submission for EVICS torque motor roll cage redesign. ECPs submission for Low Pressure Compressor 1, Low Pressure Compressor 2, Low Pressure Compressor 3 blade airfoil Low Plasticity Burnishing. Detailed design effort to extend critical rotating part lives. ***FY 2012 Base Plans:*** ECPs for low plasticity burnishing of low pressure compressor stage one, two and three blades, fuel leak redesign of EVICS, HMU permanent magnet alternator, fuel manifold pipe leakage redesign, meandering wire magnetometer inspection technique for low pressure compressor stage one blade dovetails.	6.113 0	5.013 0	4.200 0	-	4.200 0
Title: H-53/H-46/H-3 (T58/T64) ***Articles:*** ***FY 2010 Accomplishments:*** H-46/H-53 (T58) Investigated Pressure Relief Valve diaphragm failures and develop corrective action. Test and possibly qualify Next Generation Coating for 1st stage compressor blades. H-53 (T64)	8.615 0	5.640 0	6.090 0	-	6.090 0

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Improved compressor blade retention effort will be completed. Gas Generator Turbine nozzle doublets and mid sump improvements continued. Modernized torque sensor effort initiated. Life management analysis and Reliability Centered Maintenance efforts continued. ***FY 2011 Plans:*** H-46/H-3 (T58) Continued qualification of Next Generation Coating for 1st stage compressor blades. H-53 (T64) Mid sump improvements and modernized torque sensor effort continue. Fuel control reliability improvement program initiated. Life management analysis and Reliability Centered Maintenance efforts continue. ***FY 2012 Base Plans:*** H-46/H-3 (T58) Complete qualification of Next Generation Coating for 1st stage compressor blades. H-53 (T64) Complete mid sump improvements and modernized torque sensor effort continue. Continue Fuel control reliability improvement program. Continue life management analysis and Reliability Centered Maintenance efforts.					
Title: F-18 C/D/E/F (F414/F404)	14.008	10.629	18.020	-	18.020
Articles:	0	0	0		0
FY 2010 Accomplishments: Software changes demonstrated improved engine stall performance. Component analysis for service life extension continued. Improved Stage 1 fan blade dovetail coating. Aircraft electrical load data collected and analyzed. ***FY 2011 Plans:*** Oil system improvements to address pressure cautions. Component analysis for service life extension. Full Authority Digital Electronic Control software modifications for reduced removals for engine stalls. ***FY 2012 Base Plans:*** Flameholder attachment redesign. Full Authority Digital Electronic Control obsolescence redesign. Turbine disk dovetail edge of contact improvements. Near real time damage assessment. Field performance management.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
High Pressure Compressor throat wear limit expansion. Oil pressure cautions. Main Fuel Control improvements to reduce mission aborts.					
Title: T-45 (F405) ***Articles:*** ***FY 2010 Accomplishments:*** Completed cold and hot section reliability improvement design change task. ***FY 2011 Plans:*** Address top safety issues reported from fleet. Analysis and redesign components based on service revealed deficiencies. ***FY 2012 Base Plans:*** Continue to address safety issues reported from fleet. Analysis and redesign components based on service revealed deficiencies.	1.813 0	2.198 0	2.000 0	-	2.000 0
Title: V-22 Propulsion ***Articles:*** ***FY 2010 Accomplishments:*** Assessed engine in-service power availability performance. Improve drive system including Proprotor gearbox lead-the-fleet testing. Continue to address emergent safety of flight issues. ***FY 2012 Base Plans:*** Initiate Drive system corrosion improvement project, drive system lead the fleet, Full Authority Digital Engine Control Troubleshooting, constant frequency generator to Accessory gearbox casting change. Continue Infrared suppressor removal study, software generation, upper Nacelle system and compressor coating Trade Studies. Complete engine and system management plans. V22 Component Improvement Program (CIP) funding added to FY12.	1.582 0	-	6.600 0	-	6.600 0
Title: Multi-Platform Product Support Teams ***Articles:*** ***FY 2010 Accomplishments:*** Projects provided common support to multiple platforms in the areas of improved drive systems, secondary power and mechanical systems; improved tools for performance analysis, modeling and simulation, diagnostics, engine reliability assessment, and structural integrity; improve products and processes for fuels, lubricants,	13.683 0	12.006 0	12.685 0	-	12.685 0

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
and refueling equipment; and improve electrical system product support, wiring, and battery systems. Includes funding for Government Furnished Equipment fuel provided in support of engine developmental and qualification testing. ***FY 2011 Plans:*** Continue FY2010 Plan. ***FY 2012 Base Plans:*** Continue projects to provide common support to multiple platforms in the areas of improved drive systems, secondary power and mechanical systems; improved tools for performance analysis, modeling and simulation, diagnostics, engine reliability assessment, and structural integrity; improve products and processes for fuels, lubricants, and refueling equipment; and improve electrical system product support, wiring, and battery systems. Includes funding for Government Furnished Equipment fuel provided in support of engine developmental and qualification testing.					
Title: F-35 (JSF) (F135) ***Articles:*** ***FY 2011 Plans:*** Begin accelerated mission testing of the F135 engine as a lead-the-fleet test program. This program requires dedicated test assets be procured or refurbished as well as significant test cell run time to ensure flight safety and optimized readiness as the Marine Corps Short Take Off/Vertical Landing aircraft enter service in 2012. Component level work will also begin in order to extend life limits of parts that are critical to extended time on wing and reduce cost of ownership.	-	27.000 0	-	-	-
Accomplishments/Planned Programs Subtotals	63.769	75.583	62.379	-	62.379

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

This is a NON-ACAT program. Procurement strategy is determined by market survey and cooperative opportunities.

E. Performance Metrics

The Component Improvement Program (CIP) will support engineering design and development efforts for 100% of the safety of flight issues on in-service propulsion & power systems covered under the program. In FY11, this equates to more than 200 individual Engineering Project Descriptions (EPDs). CIP will also address reliability

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and maintainability deficiencies equating to at least another 150 individual EPDs. Similar projects have increased the aggregate engine reliability across the USN/ USMC fleet, as measured by the mean flight hours between engine removals, by 40% over the past six years.

Program execution will be actively managed on 100% of the projects via contractor earned value data and overall obligation and expenditure rates as reflected in Navy ERP. Data will be analyzed and measured against OSD/FMB benchmarks on a monthly basis.

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Sys Eng F402 Engine Program	WR	NAWCAD:PAX RIVER, MD	8.446	1.490	Oct 2010	1.302	Oct 2011	-		1.302	Continuing	Continuing	Continuing
Sys Eng F402 Engine Program	SS/CPFF	ROLLS ROYCE:UK	51.868	3.318	Dec 2010	2.898	Dec 2011	-		2.898	0.000	58.084	58.084
Sys Eng T58/T64 Engine Program	SS/CPFF	GE:MASS	71.973	2.508	Oct 2010	3.532	Dec 2011	-		3.532	0.000	78.013	78.013
Sys Eng T58/T64 Engine Program	WR	NAWCAD:PAX RIVER, MD	21.671	2.824	Oct 2010	2.558	Oct 2011	-		2.558	Continuing	Continuing	Continuing
Sys Eng J52 Engine Program	SS/CPFF	P&W:FLORIDA	36.363	1.605	Oct 2010	1.073	Oct 2011	-		1.073	0.000	39.041	39.041
Sys Eng J52 Engine Program	WR	NAWCAD:PAX RIVER, MD	9.945	1.367	Oct 2010	0.547	Oct 2011	-		0.547	Continuing	Continuing	Continuing
Sys Eng T56 Engine Program	SS/CPFF	ROLLS ROYCE:IN	31.712	3.599	Feb 2011	4.194	Feb 2012	-		4.194	0.000	39.505	39.505
Sys Eng T56 Engine Program	WR	NAWCAD:PAX RIVER, MD	22.818	1.542	Oct 2010	1.796	Oct 2011	-		1.796	Continuing	Continuing	Continuing
Sys Eng F405 Engine Program	SS/CPFF	ROLLS ROYCE:UK	24.539	1.274	Dec 2010	1.166	Dec 2011	-		1.166	0.000	26.979	26.979
Sys Eng F405 Engine Program	WR	NAWCAD:PAX RIVER, MD	1.810	0.912	Oct 2010	0.834	Oct 2011	-		0.834	Continuing	Continuing	Continuing
Sys Eng F414/F404 Engine Program	SS/CPFF	GE:MASS	81.282	8.476	Dec 2010	12.684	Dec 2011	-		12.684	0.000	102.442	102.442
Sys Eng F414/F404 Engine Program	WR	NAWCAD:PAX RIVER, MD	10.402	3.566	Oct 2010	5.336	Oct 2011	-		5.336	Continuing	Continuing	Continuing
Sys Eng T700 Engine Program	SS/CPFF	GE:MASS	21.861	2.388	Jan 2011	1.849	Jan 2012	-		1.849	0.000	26.098	26.098
Sys Eng T700 Engine Program	WR	NAWCAD:PAX RIVER, MD	9.418	1.022	Oct 2010	0.791	Oct 2011	-		0.791	Continuing	Continuing	Continuing
Sys Eng T400 Engine Program	SS/CPFF	P&W:FLORIDA	4.878	0.332	Dec 2010	0.200	Dec 2011	-		0.200	0.000	5.410	5.410
Sys Eng T400	WR	NAWCAD:PAX RIVER, MD	-	-		0.884	Dec 2011	-		0.884	0.000	0.884	
Sys Eng Props Program	SS/CPFF	HAM SUNSTRAND:CON	12.426	1.313	Dec 2010	1.450	Dec 2011	-		1.450	0.000	15.189	15.189

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Sys Eng Lab Fld Activity-1.0 or more	WR	NAWCAD:PAX RIVER, MD	177.827	9.046	Oct 2010	10.965	Oct 2011	-		10.965	Continuing	Continuing	Continuing
Sys Eng F135 Engine Program	SS/CPFF	P&W:CON	-	27.000	Oct 2010	-		-		-	0.000	27.000	43.500
GFE*	Reqn	DES/DLA:Various	9.603	1.310	Oct 2010	1.000	Dec 2011	-		1.000	Continuing	Continuing	Continuing
Sys Eng V-22 Propulsion Program	SS/FFP	Bell- Boeing:Ft. Worth, TX	3.400	-		4.500	Jan 2012	-		4.500	0.000	7.900	
Sys Eng V-22 Propulsion Program	WR	NAWCAD:PAX RIVER, MD	1.800	-		2.100	Nov 2011	-		2.100	0.000	3.900	
Sys Eng Other In-House Spt	Various	Various:Various	19.243	0.274	Oct 2010	0.300	Oct 2011	-		0.300	Continuing	Continuing	Continuing
Prior Year Prod Dev	Various	Various:Various	53.921	-		-		-		-	0.000	53.921	
		Subtotal	687.206	75.166		61.959		-		61.959			

Remarks

GFE includes expected cost of fuel necessary to support engine development and qualification testing.
This budget submittal realigns JSF CIP funds to Multi-Platform Support and V-22 based on resource sponsor direction and in concert with program schedule adjustment.
Total may be off due to rounding.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	Various	Various:Various	7.316	0.307	Dec 2010	0.310	Dec 2011	-		0.310	Continuing	Continuing	Continuing
		Subtotal	7.316	0.307		0.310		-		0.310			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	Various	Various:Various	3.226	0.053	Dec 2010	0.053	Oct 2011	-		0.053	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 1355: *Propulsion and Power Component Improvement Program*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	3.226	0.053		0.053		-		0.053			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Travel	Various	NAWCAD:PAX RIVER, MD	0.545	0.057	Oct 2010	0.057	Oct 2011	-		0.057	Continuing	Continuing	Continuing
Prior Year Mgmt Svcs	Various	Various:Various	1.447	-		-		-		-	0.000	1.447	1.447
		Subtotal	1.992	0.057		0.057		-		0.057			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	699.740	75.583		62.379		-		62.379			

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 3189: *Digital I-TER*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3189: *Digital I-TER*	0.900	-	0.001	-	0.001	-	-	-	-	0.000	0.901
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project develops an increased capability to the existing BRU-42 Improved Triple Ejector Rack (ITER) for the AV-8B, which adds a multiple carriage capability for Smart Weapons such as Joint Direct Attack Munition (JDAM). Using existing ITERs as Government Furnished Material, the electronics tray will be replaced with a more capable electronics package allowing for smart weapons capability.

FY09 and FY10 funds realigned to PE 0604214N, Project Unit 2634. These funds were realigned to meet the appropriate intent and strategy of upgrading the AV-8B software to ensure the aircraft receives an increased capability while utilizing an upgraded BRU-42 Improved Triple Ejector Rack (ITER).

FY10 funds realigned within PE 0604214N, Project Unit 3190 to 3189 to cover extended POP and minor redesign to address integration platform software limitations.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: DIGITAL ITER KIT DEVELOPMENT	0.900	-	0.001	-	0.001
Articles:	0		0		0
FY 2010 Accomplishments: Completed Digital ITER development and Delivery of functional Test Units. Continued aircraft integration and support equipment redesign.					
FY 2012 Base Plans: There are no funded efforts planned in FY12 for Digital ITER.					
Accomplishments/Planned Programs Subtotals	0.900	-	0.001	-	0.001

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 3189: *Digital I-TER*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APN-7/072000: *War Consumables*	0.000	7.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.400

D. Acquisition Strategy

Digital ITER development plans to leverage an Air Force contract that upgrades their TER-9 system. Integration and software development on the AV-8B will be done through NAWC AD Patuxent River, MD and NAWC WD China Lake, CA. A sole source, APN-7 firm-fixed price contract is planned in FY11 to procure 147 racks.

E. Performance Metrics

Project is currently in testing phase.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 3190: *Multi-Purpose Bomb Racks*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3190: *Multi-Purpose Bomb Racks*	20.854	20.023	22.589	-	22.589	15.725	16.671	14.365	14.594	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	10	10	0	0		

Note

Wind Tunnel Testing was realigned from Multi-Purpose Bomb Racks (MPBR) Development to Testing to more clearly depict the function of the funds.

A. Mission Description and Budget Item Justification

3190- Multi-Purpose Bomb Racks (MPBR): The MPBR will replace the BRU-41 / 42 / 33 / 55 for the F/A-18E/F platform and provide for the carriage and release of both tactical and training stores on one common rack. FY13 includes 10 units for Developmental Test and Evaluation (DT&E) and FY14 includes 10 units for Operational Test and Evaluation (OT&E).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Title: Multi-Purpose Bomb Rack (MPBR) Dev.	14.335	14.572	15.018	-	15.018
Articles:	0	0	0		0
Description: The MPBR funding develops a bomb rack to replace the BRU-41 / 42 / 33 / 55 for the F/A-18E/F. The vendors effort will be required not only in rack development, but also in a support role throughout the integration effort. ***FY 2010 Accomplishments:*** Continued MPBR design and development. ***FY 2011 Plans:*** Begin MPBR prototype development and fabrication after electrical and mechanical designs are complete. Once integration assets are available the design and/or modification of Support Equipment (SE) will occur. This effort will occur at both the rack and at the system/platform level. ***FY 2012 Base Plans:*** Continue prototype development. Finalize SE design for both the rack and the platform to rack interface.					
Title: Multi-Purpose Bomb Rack Software Dev.	4.183	4.022	4.094	-	4.094
Articles:	0	0	0		0

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 3190: *Multi-Purpose Bomb Racks*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Description: The MPBR funding will be used to develop the aircraft software required to interface the bomb rack and the stores it will carry with the aircraft. This interface is essential to the safe carriage and successful stores release. ***FY 2010 Accomplishments:*** Continued MPBR refinement of the rack and platform software requirements. ***FY 2011 Plans:*** Provide MPBR software to test activities to identify deficiencies and make corrections as required. Additional coding will be performed as expanded stores integration occurs. ***FY 2012 Base Plans:*** Finalize first build of software and port results into the next build for envelope expansion.					
Title: Multi-Purpose Bomb Rack Testing	2.336	1.429	3.477	-	3.477
Articles:	0	0	0		0
Description: The MPBR testing will include ground (aircraft and test stand) and flight integration testing. These efforts will begin prior to delivery and will occur throughout the Engineering and Manufacturing Development (EMD) efforts of this rack. They will begin with prototype design coordination, initial test planning and will progress to ground and flight test events. ***FY 2010 Accomplishments:*** Continued MPBR design and development and prepared for vendor wind tunnel testing. ***FY 2011 Plans:*** Perform MPBR initial test planning for ground rack testing with a build-up toward first flight testing. Schedule wind tunnel test and generate wind tunnel models. ***FY 2012 Base Plans:*** Begin vendor full up rack testing and proceed toward production of development test assests. Perform wind tunnel testing and analysis.					
Accomplishments/Planned Programs Subtotals	20.854	20.023	22.589	-	22.589

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 3190: *Multi-Purpose Bomb Racks*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• APN-7/072000: *War Consumables*	0.000	0.000	0.000	0.000	0.000	0.000	21.637	20.016	20.376	457.250	519.279

D. Acquisition Strategy

The design and development of the MPBR will be a Cost Plus Incentive Fee competitive contract. The aircraft software integration will be done by the F/A-18 Advanced Weapons Laboratory at NAWC-WD China Lake and through a Cost Type contract with Boeing awarded through China Lake, CA.

The MPBR contract was awarded in March 2010. Subsequently, the unsuccessful vendor lodged a protest which placed the contract in a stop work status. The decision to continue with award occurred on 23 September 2010 and is currently executing.

E. Performance Metrics

FY10: EMD contract awarded.
FY11: Successfully complete milestones: System Readiness Review, System Functional Review, and Preliminary Design Review.
FY12: Successfully complete milestones: Critical Design Review

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 3190: *Multi-Purpose Bomb Racks*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPIF	RAYTHEON:INDIANAPOLIS, IN	16.933	11.200	May 2011	12.007	Mar 2012	-		12.007	3.300	43.440	43.440
		Subtotal	16.933	11.200		12.007		-		12.007	3.300	43.440	43.440

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Support	WR	NAWCAD:LAKEHURST, NJ	-	-		0.212	Mar 2012	-		0.212	2.488	2.700	
Software Development	C/CPIF	BOEING:ST. LOUIS, MO	5.556	4.022	Apr 2011	3.882	Mar 2012	-		3.882	12.133	25.593	25.593
		Subtotal	5.556	4.022		4.094		-		4.094	14.621	28.293	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development Test & Evaluation	WR	NAWCAD:PATUXENT RIVER, MD	2.212	0.575	Nov 2010	0.894	Nov 2011	-		0.894	29.611	33.292	
Operational Test & Evaluation	WR	COTF:NORFOLK, VA	0.057	0.063	Dec 2010	-		-		-	2.676	2.796	
Wind Tunnel Testing	TBD	TBD:TBD	-	1.015	Sep 2011	2.583	Nov 2011	-		2.583	0.000	3.598	
		Subtotal	2.269	1.653		3.477		-		3.477	32.287	39.686	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	SS/CPFF	SAIC:SAN DIEGO, CA	0.876	0.322	Nov 2010	0.657	Nov 2011	-		0.657	1.366	3.221	3.221

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 3190: *Multi-Purpose Bomb Racks*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NAWCAD:PATUXENT RIVER, MD	2.897	0.750	Nov 2010	0.453	Nov 2011	-		0.453	3.502	7.602	
Government Engineering Support	WR	NAWCWD:CHINA LAKE, CA	3.945	1.000	Nov 2010	0.876	Nov 2011	-		0.876	3.397	9.218	
Program Management Support	WR	NAWCAD:PATUXENT RIVER, MD	2.079	0.645	Nov 2010	0.650	Nov 2011	-		0.650	0.000	3.374	
Program Management Support	C/FFP	EMA:PATUXENT RIVER, MD	0.229	0.231	Feb 2011	0.200	Nov 2011	-		0.200	0.000	0.660	0.660
Travel	Various	NAWCAD:PATUXENT RIVER, MD	0.400	0.200	Oct 2010	0.175	Oct 2011	-		0.175	0.700	1.475	
		Subtotal	10.426	3.148		3.011		-		3.011	8.965	25.550	

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	35.184	20.023		22.589		-		22.589	59.173	136.969	

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 3190: *Multi-Purpose Bomb Racks*

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0205633N: *Aviation Improvements*	**PROJECT** 3190: *Multi-Purpose Bomb Racks*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Multi-Purpose Bomb Racks				
Acquisition Milestones: Milestone C	2	2014	2	2014
Systems Development: Hardware Development: Development Phase - Engineering and Manufacturing Development (EMD)	1	2011	2	2014
Systems Development: Reviews: System Functional Review (SFR)	2	2011	2	2011
Systems Development: Reviews: Preliminary Design Review (PDR)	4	2011	4	2011
Systems Development: Reviews: Critical Design Review (CDR)	3	2012	3	2012
Systems Development: Reviews: Physical Configuration Audit (PCA)	2	2014	2	2014
Systems Development: Contract Awards: Engineering and Manufacturing Development Contract Award	2	2010	2	2010
Delivery of Test Units: Delivery of Test Assets (DT)	4	2013	4	2013
Delivery of Test Units: Delivery of Test Assets (OT)	4	2014	4	2014
Test & Evaluation Milestones: Technical Evaluation: Vendor Testing	4	2011	4	2013
Test & Evaluation Milestones: Technical Evaluation: Developmental Test and Evaluation (DT&E)	1	2014	4	2016
Test & Evaluation Milestones: Operational Evaluation: Integrated Test and Evaluation (IT&E)	2	2014	4	2016
Test & Evaluation Milestones: Operational Evaluation: Operational Assessment Readiness Review (OARR)	2	2015	2	2015
Test & Evaluation Milestones: Operational Evaluation: Operational Assessment (OA)	2	2015	3	2015
Test & Evaluation Milestones: Operational Evaluation: Operational Assessment (OA) Report	3	2015	3	2015
Production Milestones: Reviews: Production Readiness Review (PRR)	2	2015	2	2015
Production Milestones: Contract Awards: LRIP 1 Award, APN-7	2	2014	2	2014

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 3190: *Multi-Purpose Bomb Racks*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: Contract Awards: LRIP 2 Award, APN-7	2	2015	2	2015
Production Milestones: Contract Awards: LRIP 3 Award, APN-7	2	2016	2	2016
Production Milestones: Production Deliveries: LRIP 1 Delivery, APN-7	2	2015	1	2016
Production Milestones: Production Deliveries: LRIP 2 Delivery, APN-7	2	2016	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0205633N: *Aviation Improvements*	PROJECT 9999: *Congressional Adds*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: *Congressional Adds*	7.808	-	-	-	-	-	-	-	-	0.000	7.808
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional Add

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
Congressional Add: Highly Conductive Lightweight Aircraft Sealant ***FY 2010 Accomplishments:*** A proposal was received from the contractor in response to a Broad Agency Announcement, and the Navy has evaluated the proposal. Contract award is pending receipt of funds. Resolve the viscosity versus conductivity stalemate. Find ways to adjust viscosity or conductivity without adversely impacting the other. Resolve corrosion issues. Optimize processing and application methods.	0.956	-
Congressional Add: Laser Peening for P-3 Life Extension ***FY 2010 Accomplishments:*** A proposal was received from the contractor in response to a Broad Agency Announcement, and the Navy has evaluated the proposal. Contract is in negotiation. Funding will support technology development of processes to increase life expectancy of components, starting with the United States Navy's P-3 Orion fleet, thereby reducing maintenance costs and improving safety and reliability.	1.275	-
Congressional Add: Arc Fault Circuit Breaker With Arc Location System ***FY 2010 Accomplishments:*** Began creating inversion algorithm software to locate arc faults at distances closer than 10 feet. Continue creation of inversion algorithm software. Perform blind/functional test.	0.797	-
Congressional Add: Wireless Sensors For Navy Aircraft ***FY 2010 Accomplishments:*** Continued to demonstrate critical elements in laboratory setting. Proceed to limited system-level demonstration if full flight test is successful.	2.390	-
Congressional Add: Lightweight Composite Structure Dev For Aerospace ***FY 2010 Accomplishments:*** Manufactured component to demonstrate CH-53K cargo ramp. Awarded contract.	2.390	-
Congressional Adds Subtotals	7.808	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0205633N: *Aviation Improvements*	**PROJECT** 9999: *Congressional Adds*

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

Not required for Congressional Adds

E. Performance Metrics

Not required for Congressional Adds