Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy										DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*				R-1 ITEM NOMENCLATURE PE 0604504N: *Air Control*							
COST ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**Cost To Complete**	**Total Cost**
Total Program Element	5.511	5.521	5.633	-	5.633	6.084	6.181	6.248	6.370	Continuing	Continuing
0718: *MATCALS*	0.347	0.620	0.630	-	0.630	0.633	0.645	0.650	0.663	Continuing	Continuing
0993: *Carrier ATC*	4.760	4.507	4.603	-	4.603	5.049	5.129	5.186	5.288	Continuing	Continuing
1657: *ATC Improvement*	0.404	0.394	0.400	-	0.400	0.402	0.407	0.412	0.419	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element provides for the development, integration, and testing of Automated Air Traffic Control (ATC) hardware and software required to provide improved flight safety and more reliable all-weather ATC and landing system capabilities at Naval Air Stations (NASs) and Marine Corps Air Stations (MCASs) and Fleet Area Control and Surveillance Facilities (FACSFAC) worldwide. Funded programs are required to upgrade or replace aging ATC and landing system equipment on aircraft, aircraft carriers, amphibious ships, NASs, MCASs and Navy/Marine Corps tactical/expeditionary airfields and remote landing sites.

B. Program Change Summary ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	5.665	5.521	5.618	-	5.618
Current President's Budget	5.511	5.521	5.633	-	5.633
Total Adjustments	-0.154	-	0.015	-	0.015
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.113	-			
• SBIR/STTR Transfer	-0.012	-			
• Program Adjustments	-	-	-0.003	-	-0.003
• Rate/Misc Adjustments	-	-	0.018	-	0.018
• Congressional General Reductions Adjustments	-0.029	-	-	-	-

Change Summary Explanation

Schedule:
Proj. 0993: Prototype deliveries of TPX-42 will commence 3rd quarter 2017; Developmental Testing of TPX-42 will commence in 4th quarter 2017.
Technical: Not applicable.

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy	DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	**R-1 ITEM NOMENCLATURE** PE 0604504N: *Air Control*

FY 11- Reprogrammed $.113 million for higher priority Department needs.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604504N: *Air Control*	PROJECT 0718: *MATCALS*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0718: *MATCALS*	0.347	0.620	0.630	-	0.630	0.633	0.645	0.650	0.663	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program provides for continued development, integration, and testing of hardware and software to meet requirements for all-weather operation and improved flight safety of Air Traffic Control and Landing Systems at Marine Corps expeditionary airfields. Current program includes approved transition to Air Surveillance and Precision Approach Radar Control System (ASPARCS). The ASPARCS will replace the legacy Air Traffic Control (ATC) Precision Approach Radar (PAR), Air Surveillance Radar (ASR), and Communications and Control Subsystem with a High Mobility Multipurpose Wheeled Vehicle based PAR, ASR, and Command and Control (C2) Subsystem. Efforts have begun for requirements definition, development and engineering for the ASPARCS Pre-Planned Product Improvements (P3I), in accordance with Marine Corps Requirements Oversight Council (MROC) Decision Memorandum 11-2005 dated December 2004. P3I includes the design and development of software code to interface C2 input/output to existing software, incorporating Radar Range Extension and Mapping functionality, enhanced simulation and training and providing increased operator workstations.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Title: ASPARCS Improvements	0.347	0.620	0.630
Articles:	0	0	0
Description: Investigate and resolve obsolescence issues. Perform studies and analyses to implement P3I and other evolutionary improvements. Develop criteria for existing ASPARCS software to achieve Defense Information Infrastructure-Common Operating Environment Level 5 compliance, Information Assurance, Radar Range Extension and Mapping functionality, and enhanced simulation and training into the existing ASPARCS software. Perform studies and analyses.			
FY 2011 Accomplishments: Completed a study on development of TACAN interface to the ASPARCS AN/TSQ-263 (Work Station Expansion). Conducted liaison and assisted the Ground Air Task Oriented Radar System (GATOR) Program Office in developing Capability Production Document (CPD).			
FY 2012 Plans: Fund the development of a Capabilities Development Document for Replacement Expeditionary ATC Tower. Initial Capabilities Document for ATC states that a deployable, mobile, scalable (the size of airfield) tower with enhanced night vision device capability, and equipped with a certified tower radar display, is a capability gap in fielded Marine Air Traffic Control and Landing System (MATCALS) equipment. Current tower has increasing obsolescence issues and is reaching its service life limits.			
FY 2013 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604504N: *Air Control*	PROJECT 0718: *MATCALS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Conduct investigation on obsolescence issues. Continue integration of Ground Air Task Oriented Radar System (GATOR) and Common Aviation Command and Control Suite (CAC2S) with ASPARCS.			
Accomplishments/Planned Programs Subtotals	0.347	0.620	0.630

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• OPN/2815: *MATCALS*	39.747	13.368	5.861	0.000	5.861	5.999	13.638	6.322	6.438	Continuing	Continuing

D. Acquisition Strategy

Air Surveillance and Precision Approach Radar Control System (ASPARCS) is an ACAT IVT program. Lockheed Martin was awarded the contract for this effort in June 2000. This effort included First Article development (Fixed Price Incentive) with (Firm Fixed Priced) production options. Schedule delays and technical issues with the Precision Approach Radar (PAR) and Air Surveillance Radar (ASR) and integration with the operation subsystem/communication subsystem resulted in a no-cost close out to the Lockheed Martin contract in November 2004. An Acquisition Decision Memorandum was signed in Jan 2005 approving the procurement of the Army AN/TPN-31 System to fulfill the ASPARCS requirement for July 2006. The MROC Decision Memorandum 11-2005 of December 2004 outlined the evolutionary improvements envisioned by Headquarters Marine Corps. This program has joined with the Army to implement P3I and evolutionary product improvements.

E. Performance Metrics

The MATCALS RDTEN funding will develop a planned replacement for the current ASR.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604504N: *Air Control*	PROJECT 0993: *Carrier ATC*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0993: *Carrier ATC*	4.760	4.507	4.603	-	4.603	5.049	5.129	5.186	5.288	Continuing	Continuing
Quantity of RDT&E Articles	1	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Shipboard Air Traffic Control (ATC) Central systems, interfacing with versions of the AN/TPX-42(V) Direct Altitude and Identity Readout system (DAIR), allow Shipboard Air Traffic Controllers to identify, marshal, and direct aircraft within a 50 Nautical Mile (NM) radius of the ship. At closer range (8NM) a ship's Automatic Carrier Landing System (ACLS) and Independent Landing Monitor (ILM) are operationally required to affect safe landing on the moving decks of ships. The AN/SPN-41 ILM and AN/SPN-46 ACLS provide verification of aircraft approach glideslope position and precise aircraft automatic control respectively during its final approach and landing sequence to an aircraft carrier. Dual efforts are underway to improve the AN/SPN-46 system availability and supportability until at least September 2020. These efforts include various Engineering Change Proposals (ECPs), and the Life Cycle Extension (LCE) program transitional changes include a re-architecture of its radar control group process with Commercial Off the Shelf (COTS) technology, replacement of the computer group processing hardware, and conversion of system program software from CMS-2 to the more commonly used 'C' programming language. In recent years, the top 25% of the AN/SPN-43 frequency band has been reallocated to the Fixed Wireless Access community prohibiting ATC radar operation within 50 miles of the coast. Because the Navy requires an air traffic control radar, this project unit will include engineering efforts to identify requirements and develop a suitable replacement and/or a Service Life Extension Plan (SLEP) before the AN/SPN-43 becomes operationally ineffectual. Finally, the AN/TPX-42A(V)14 DAIR underwent several phased upgrades that have resulted in three field changes. System improvements include replacing militarized front-end equipment in the track processor with COTS technology, converting the operational program software to more commonly used and flexible 'C' language, integrating and interface with Mode 5 Identification Friend or Foe, and integrating a flat panel monitor into the AN/UYQ-70 console. The development of an ATC common console will reduce operational costs, improve reliability, and provide compatible interfaces and commonality for all ATC workstations.

Test Article Descriptions:

The AN/TPX-42 ATC Console Engineering Development Model delivered in FY 2012 will be used to support developmental testing to verify system performance against established requirements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Title: AN/TPX-42	1.822	1.239	1.742
Articles:	0	0	0
Description: This project funds development of the final ATC Console configuration to include JPALS interface, Dual Band Radar interface, and replacement of AN/SPN-35 Operator displays. It is anticipated that this technology insertion will result in a formal nomenclature change for the AN/TPX-42 system, as such the identification of the modification kits will change to 'H' Kits. "H" Kits will also identify and test Voice Recorder replacement technology and obsolete components.			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604504N: *Air Control*	PROJECT 0993: *Carrier ATC*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
FY 2011 Accomplishments: Continued development of ADS B interface requirements, Completed Field Change 4 testing and commenced testing of Field Change 5 to AN/TPX-42. ***FY 2012 Plans:*** Continue development of ADS B interface requirements; continue Field Change 5 testing to AN/TPX-42. ***FY 2013 Plans:*** Complete Field Change 5 testing for the AN/TXP-42. Develop Requirements Documentation for ATC Console.			
Title: AN/SPN-43C	2.938	3.268	2.861
Articles:	1	0	0
Description: This project funds development of the final ATC Console configuration to include Joint Precision Approach and Landing System (JPALS) interface, Dual Band Radar interface, and replacement of AN/SPN-35 Operator displays. It is anticipated that this technology insertion will result in a formal nomenclature change for the AN/TPX-42 system, as such the identification of the modification kits will change to 'H' Kits. "H" Kits will also identify and test Voice Recorder replacement technology and obsolete components. This project funds development of an AN/SPN-43C replacement or SLEP. ***FY 2011 Accomplishments:*** Commenced Block 1 of the AN/SPN-43C SLEP. ***FY 2012 Plans:*** Complete system development of the AN/SPN-43C SLEP. Perform quality design and build of AN/SPN-43C. ***FY 2013 Plans:*** Continue system development and begin design of a receiver ECP prototype for the AN/SPN-43C SLEP testing. Deliver AN/SPN-43C prototype.			
Accomplishments/Planned Programs Subtotals	4.760	4.507	4.603

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• OPN/2831: *Shipboard Air Traffic Control*	7.617	7.394	8.362	0.000	8.362	9.225	9.914	10.050	10.269	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604504N: *Air Control*	PROJECT 0993: *Carrier ATC*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• OPN/2832: *Automatic Carrier Landing Systems*	10.724	17.018	15.685	0.000	15.685	17.897	19.137	19.456	19.841	Continuing	Continuing

D. Acquisition Strategy

AN/SPN-46 Computer Group replacement subprojects are part of the AN/SPN-46 LCE project, which is an ECP. Initial contract was awarded in November 2003 for the Radar Control Group, and the contract for the Computer Group was awarded in December 2005. AN/TPX-42 Voice/Video recorder replacement, JPALS Interface, Shipboard trainer, and ATC Console are all anticipated ECPs, with improvements being incorporated into the production of AN/TPX-42 upgrade kits. AN/SPN-43 SLEP will consist of a receiver, pedestal, and transmitter ECPs and will be incorporated into AN/SPN-43 upgrade kits.

All other projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce these technology advancements that either satisfy user requirements, such as all weather operation, or address supportability and cost of ownership problems.

E. Performance Metrics

Prototype Delivery will occur in First Quarter FY13 for the AN/SPN-43.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604504N: *Air Control*	PROJECT 0993: *Carrier ATC*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary HDW Develop-SPN-46	WR	NAWCAD:PAX River, MD	11.546	-		-		-		-	0.000	11.546	
Primary HDW Develop-SPN-46	SS/CPIF	SNC:Sierra, NV	6.356	-		-		-		-	0.000	6.356	6.356
Primary HDW Develop-TPX-42	WR	NAWCAD:PAX River, MD	2.948	0.794	Dec 2011	0.219	Dec 2012	-		0.219	Continuing	Continuing	Continuing
Primary HDW Develop - SPN-43	WR	NAWCAD:PAX River, MD	-	1.703	Dec 2011	2.711	Dec 2012	-		2.711	Continuing	Continuing	Continuing
		Subtotal	20.850	2.497		2.930		-		2.930			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development-SPN-46	WR	NAWCAD:PAX River, MD	13.120	-		-		-		-	0.000	13.120	
Software Development-TPX-42	WR	NAWCAD:PAX River, MD	11.257	1.153	Dec 2011	1.160	Dec 2012	-		1.160	Continuing	Continuing	Continuing
Integrated Logistics Support-TPX-42	WR	NAWCAD:PAX River, MD	0.732	0.075	Dec 2011	0.050	Dec 2012	-		0.050	Continuing	Continuing	Continuing
Studies & Analysis- SPN-46	WR	NAWCAD:PAX River, MD	0.273	-		-		-		-	0.000	0.273	
Studies & Analysis- SPN-43	WR	NAWCAD:PAX River, MD	1.350	0.050	Dec 2011	0.050	Dec 2012	-		0.050	Continuing	Continuing	Continuing
Studies & Analysis- TPX-42	WR	NAWCAD:PAX River, MD	0.250	0.050	Dec 2011	0.050	Dec 2012	-		0.050	Continuing	Continuing	Continuing
Integrated Logistics Support - SPN-43	WR	NAWCAD:PAX River, MD	-	0.075	Dec 2011	0.100	Dec 2012	-		0.100	Continuing	Continuing	Continuing
		Subtotal	26.982	1.403		1.410		-		1.410			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604504N: *Air Control*	PROJECT 0993: *Carrier ATC*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation- SPN-46	WR	NAWCAD:PAX River, MD	1.645	-		-		-		-	0.000	1.645	
Developmental Test & Evaluation- TPX-42	WR	NAWCAD:PAX River, MD	1.050	0.458	Dec 2011	0.157	Dec 2012	-		0.157	Continuing	Continuing	Continuing
OperationalTest & Evaluation- TPX-42	WR	OPTEVOR:Norfolk, VA	0.062	-		-		-		-	0.000	0.062	
		Subtotal	2.757	0.458		0.157		-		0.157			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	American Electronics, Inc.:California, MD	1.937	0.046	Dec 2011	0.046	Dec 2012	-		0.046	Continuing	Continuing	Continuing
Program Management Support	WR	NAWCAD:PAX River, MD	-	0.103	Dec 2011	0.060	Dec 2012	-		0.060	Continuing	Continuing	Continuing
Travel	WR	NAVAIRHQ:PAX River, MD	0.135	-		-		-		-	0.000	0.135	
		Subtotal	2.072	0.149		0.106		-		0.106			

	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	52.661	4.507		4.603		-		4.603			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604504N: *Air Control*	PROJECT 0993: *Carrier ATC*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604504N: *Air Control*	PROJECT 0993: *Carrier ATC*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Carrier ATC				
Acquisition Milestones: Milestones: Configuration Control Board (SPN43) - Part 1	1	2011	1	2011
Acquisition Milestones: Milestones: Configuration Control Board (TPX42)	4	2014	4	2014
Acquisition Milestones: Milestones: Configuration Control Board (SPN43) - Part 2	2	2014	2	2014
System Development: Hardware Development: AN/SPN-43C	1	2011	4	2016
System Development: Hardware Development: System Requirement Review (SRR) (SPN43)	1	2011	1	2013
System Development: Hardware Development: System Development (SPN43)	1	2011	1	2012
System Development: Hardware Development: Quality Design and Build (SPN43)	1	2012	4	2012
System Development: Hardware Development: Prototype Delivery (SPN43)	1	2013	1	2013
System Development: Software Development: System Requirement Review (SRR) (TPX42)	1	2011	3	2014
System Development: Software Development: System Development (TPX42)	1	2015	1	2016
System Development: Software Development: Quality Design and Build (TPX42)	1	2016	2	2017
Test and Evaluation: Developmental Testing/Operational Testing (SPN43)	1	2013	1	2014
Test and Evaluation: Developmental Testing (TPX42)	4	2017	4	2017
Deliveries: Production Deliveries (SPN43)	1	2015	4	2016
Deliveries: Prototype Deliveries (TPX-42)	3	2017	4	2017

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604504N: *Air Control*	PROJECT 1657: *ATC Improvement*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
1657: *ATC Improvement*	0.404	0.394	0.400	-	0.400	0.402	0.407	0.412	0.419	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This program provides for engineering development, integration, adaptation, and testing of new and/or modernized Air Traffic Control (ATC) systems, air navigational aids, landing systems, and ATC communication systems for Naval and Marine Corps Air Stations (NAS/MCAS) and Fleet Air Traffic Control Systems. These systems are critical to Naval Aviation and provide for safe, efficient air operations. Additionally, the Federal Aviation Administration (FAA) is affecting major modernization of the National Airspace System (NAS). The Navy must maintain compatibility with FAA-developed ATC systems in order to ensure seamless interoperability within the NAS. NAS modernization initiatives in Project 1657 include the Visual Information Display System (VIDS) and follow-on Pre-Planned Product Improvements, with additional RDT&E efforts required for modified commercial-off-the-shelf ATC systems and equipment for modernization and recapitalization of these systems at our NAS, MCAS & Fleet Area Control & Surveillance Facilities (FACSFACs) worldwide. Landing Systems initiatives include re-engineering and technology insertion efforts for the Precision Approach Radar, Tactical Air Navigation System, and other landing systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Title: NAS MOD VIDS	0.387	0.194	0.200
Articles:	0	0	0
Description: Continue engineering development of pre-planned product improvements for the VIDS and initiate efforts to incorporate VIDS into the FACSFACs. Research display alternatives for Navy ATC systems, and evaluate alternatives for future communication and radar systems.			
FY 2011 Accomplishments: Continued engineering development of Pre-Planned Product Improvements for VIDS to develop additional capabilities into VIDS.			
FY 2012 Plans: Continue engineering development of Pre-Planned Product Improvements for VIDS to incorporate multiple weather source inputs. Continue Standard Terminal Automation Replacement System and VIDS engineering development for technology insertion. Begin engineering efforts to maintain interoperability with the FAA's next generation air traffic control system.			
FY 2013 Plans: Continue engineering development of Pre-Planned Product Improvements for VIDS to incorporate multiple weather source inputs. Continue Standard Terminal Automation Replacement System and VIDS engineering development for technology insertion. Continue engineering efforts to maintain interoperability with the FAA's next generation air traffic control system.			
Title: Fleet ATC Systems	0.017	0.200	0.200

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604504N: *Air Control*	PROJECT 1657: *ATC Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Articles:	0	0	0
Description: Research efforts to determine the best technical approach to integrate various data link and communication system upgrades into Navy/Marine Corps ATC Systems including but not limited to the Digital Airport Surveillance Radar (DASR) into the FACSFAC Fleet Area Control Tracking System (FACTS) 3200 system. Evaluate alternatives for future processor/display, sensor and communication systems. ***FY 2011 Accomplishments:*** Identified components for Navy Scheduling System (NAVSKED)/FACTS Technology Refresh. Began engineering efforts to maintain interoperability with the FAA's next generation air traffic control system. ***FY 2012 Plans:*** Continue engineering development for NAVSKED/FACTS Technology Refresh and engineering efforts to maintain interoperability with the FAA's next generation air traffic control system. ***FY 2013 Plans:*** Continue engineering development for NAVSKED/FACTS Technology Refresh and engineering efforts to maintain interoperability with the FAA's next generation air traffic control system.			
Accomplishments/Planned Programs Subtotals	0.404	0.394	0.400

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• OPN/2840: *National Air Space System Modernization*	17.436	24.581	16.919	0.000	16.919	19.405	28.392	28.550	29.176	Continuing	Continuing
• OPN/2845: *Fleet Air Traffic Control Systems*	6.814	7.213	6.828	0.000	6.828	7.691	8.262	8.353	8.513	Continuing	Continuing

D. Acquisition Strategy

All projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce technology advancements that either satisfy emergent requirements or address supportability and cost of ownership problems.

E. Performance Metrics

The ATC Improvement program goal is to continue to research, evaluate and develop display and other alternatives for Navy ATC, communication and radar systems.