

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5						R-1 ITEM NOMENCLATURE 0604504N, AIR CONTROL			
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	
Total PE Cost	14.091	4.586	4.166	8.296	6.630	6.582	6.979	7.113	
0718 MARINE AIR TRAFFIC (MATCAL)	5.818	.640	1.170	2.287	.522	.399	.677	.691	
0993 CARRIER ATC	4.936	3.539	2.996	5.570	5.657	5.727	5.839	5.950	
1657 ATC IMPROVEMENT	.380	.407	0.000	.439	.451	.456	.463	.472	
9999 CONGRESSIONAL ADD	2.957								

**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**

Funding:	FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget:	11.499	4.603	4.975	6.651
Current BES:	14.091	4.586	4.166	8.296
Total Adjustments	2.592	-0.017	-0.809	1.645

Summary of Adjustments

Congressional Reductions				
Congressional Rescissions				
Congressional Undistributed Reductions	-0.300	-0.017		
Congressional Increases	1.475			
Economic Assumptions			0.018	0.117
Miscellaneous Adjustments	1.417		-0.827	1.528
Subtotal	2.592	-0.017	-0.809	1.645

**SCHEDULE:**

0718: This program has joined with the US Army for pre-planned product improvements (P3I). The Common Aviation Command and Control System (CAC2S) has been added to the schedule. On the ASPARCS schedule, the FY 2006 production buy moved from delivering in FY 2007 to FY 2008 due to contract negotiation delays.

0993: Schedule change reflects a restructure of the System Development for the AN/TPX-42 to support Milestone A and Milestone B. Schedule change for AN/SPN-46 Radar Control Group reflect milestone restructuring, test schedules and ship availability. Schedule change for AN/SPN-46 Computer Group reflect delay in Engineering Change proposal approval. For the AN/SPN-46 Computer Group Project, a change in the acquisition strategy (May 2006) changed the Abbreviated Acquisition Program (AAP) to an Engineering Change Proposal (ECP).

**TECHNICAL:** Not Applicable

EXHIBIT R-2a, RDT&E Project Justification

DATE: February 2007

APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL	PROJECT NUMBER AND NAME 0718, MARINE AIR TRAFFIC (MATCAL)						
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0718 MARINE AIR TRAFFIC (MATCAL)	5.818	.640	1.170	2.287	.522	.399	.677	.691
RDT&E Articles Qty								

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 (HMMWV) based PAR, ASR, and Command and Control (C2) Subsystem. Efforts commenced for requirements definition, development and engineering for the ASPARCS Preplanned 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 Tactical Digital Information Link (TADIL-J) input/output to existing software, incorporating National Imagery Mapping Agency (NIMA) functionality, enhanced simulation and training and providing increased operator workstations.

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

ASPARCS System Engineering	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.350			
RDT&E Articles Qty				

Perform systems engineering functions in support of the ASPARCS program. This effort includes coordination and planning with US Army and contractor for ASPARCS P3I, technical oversight of the ASPARCS program and Integrated Logistic Support planning and implementation for ASPARCS.

ASPARCS Improvements	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	5.468	.640	.662	.668
RDT&E Articles Qty				

Improve maintenance concept and reduce life cycle costs associated with field level repairs for ASPARCS. 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 (DII-COE) level 5 compliance, National Imagery Mapping Agency (NIMA) functionality, and enhanced simulation and training into the existing ASPARCS software. Perform studies and analyses.

ATC Interface with CAC2S	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost			.508	1.619
RDT&E Articles Qty				

Develop the ATC interface increment for the Common Aviation Command and Control System (CAC2S) in Dec 2007 and Dec 2008, which will allow the ATC detachment to exchange radar track data with the Marine Air Command and Control Squadron (MACCS) and joint agencies.

<b>C. OTHER PROGRAM FUNDING SUMMARY:</b>	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
* 56 - OPN BLI 281500, MATCAL	19.419	20.179	20.100	17.672	18.091	18.501	2.888	2.872	Continuing	Continuing

\* OPN BLI 281500, MATCAL is not limited to ASPARCS.

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E,N / BA-5	0604504N, AIR CONTROL	0718, MARINE AIR TRAFFIC (MATCAL)

**D. ACQUISITION STRATEGY:**

ASPARCS is an ACAT IVT program. Lockheed Martin was awarded the contract for this effort in Jun 2000. This effort included First Article development (Fixed Price Incentive) with (Firm Fixed Priced) production options. Schedule delays and technical issues with the PAR and ASR and integration with the operation subsystem/communication subsystem resulted in a no-cost close out to the Lockheed Martin contract in Nov 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 Jul 2006. The Marine Corps Requirements Oversight Council (MROC) Decision Memorandum 11-2005 of Dec 2004 outlined the evolutionary improvements envisioned by HQMC. This program has joined with the Army to implement pre-planned product improvements (P3I) and evolutionary product improvements.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME						
RDT&E,N / BA-5		0604504N, AIR CONTROL				0718, MARINE AIR TRAFFIC (MATCAL)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/FFP	Raytheon/Marlboro, MA	13.806								13.806	13.806
Primary Hardware Development	WX	NAWCAD S.I., MD				.508	12/07	1.619	12/08	Continuing	Continuing	
Training Development	WX	NAWCAD S.I., MD	0.175								.175	
Systems Engineering	WX	NAWCAD S.I., MD	5.131								5.131	
Ancillary Hardware Development	SS/FFP	Rockwell Collins/Rochester, NY	0.424								.424	.424
Primary Hdw Development (TTLS)	SS/FFP	ANPC/Hood River, OR	2.000								2.000	2.000
GFE	WX	NCCOSC/San Diego, CA	.175								.175	
P3I	SS/FFP	US Army/Redstone Arsenal, AL	6.213								6.213	6.213
SUBTOTAL PRODUCT DEVELOPMENT			27.924			.508		1.619		Continuing	Continuing	

Remarks: The program has joined with the U.S. Army for pre-planned product improvements.

Integrated Logistics Support	SS/FFP	US Army/Redstone Arsenal, AL	0.336								.336	.336
Configuration Management	WX	NAWCAD S.I., MD	0.284								.284	
Technical Data	WX	NAWCAD S.I., MD	0.479								.479	
Development Support MATCAL	WX	NAWCAD S.I., MD.	0.205								.205	
Studies and Analyses	SS/FFP	Raytheon/Largo, FL		.640	02/07	.662	02/08	.668	02/09		1.970	1.970
SUBTOTAL SUPPORT			1.304	.640		.662		.668			3.274	

Remarks:

Developmental Test & Evaluation	WX	NAWCAD S.I., MD	7.261								7.261	
Operational Test & Evaluation	WX	MCOTEA/Quantico, VA	1.072								1.072	
SUBTOTAL TEST & EVALUATION			8.333								8.333	

Remarks:

Program Management Support	WX	NAWCAD S.I., MD	0.467								.467	
Travel	TO	NAVAIR HQ, PATUXENT RIVER, MD	0.081								.081	
SUBTOTAL MANAGEMENT			.548								.548	

Remarks:

Total Cost			38.109	.640		1.170		2.287		Continuing	Continuing	
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CLASSIFICATION:

EXHIBIT R4, Schedule Profile																										DATE:						
ASPARCS																										February 2007						
APPROPRIATION/BUDGET ACTIVITY													PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME									
RDT&E,N / BA-5													0604504N, AIR CONTROL										0718, MARINE AIR TRAFFIC (MATCAL)									
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
ASPARCS System																																
<div style="display: flex; justify-content: space-between;"> <span>IOC</span> <span>△</span> </div>																																
Pre-Planned Improvements																																
<div style="display: flex; justify-content: space-between;"> <span>Obsolescence Studies</span> <span>System Development</span> </div>																																
<b>Test &amp; Evaluation Milestones</b>																																
Development Test																																
Operational Test																																
<b>Production Milestones</b>																																
ASPARCS Systems																																
Production Option FY 06 (2)																																
Follow on Production FY 07 (2)																																
Follow on Production FY 08 (2)																																
Follow on Production FY 09 (2)																																
Follow on Production FY 10 (2)																																
Follow on Production FY 11 (2)																																
Production Deliveries																																



CLASSIFICATION:

EXHIBIT R4, Schedule Profile																								DATE:								
CAC2S																								February 2007								
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME								
RDT&E,N / BA-5												0604504N, AIR CONTROL												0718, MARINE AIR TRAFFIC (MATCAL)								
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
CAC2S																																
ATC Interface Increment Development																																
<div style="border: 1px solid black; display: inline-block; padding: 2px;">System Deveopment</div>																																
<b>Production Milestones</b>																																
CAC2S Systems																																
Follow on Production (FY 10)																																
Follow on Production (FY 11)																																
Follow on Production (FY 12)																																
Follow on Production (FY 13)																																
Production Deliveries																																



EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL			PROJECT NUMBER AND NAME 0993, CARRIER ATC				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
0993 CARRIER ATC		4.936	3.539	2.996	5.570	5.657	5.727	5.839	5.950
RDT&E Articles Qty			1						

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

Shipboard Air Traffic Control 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 effect 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 (ECP's), and the Life Cycle Extension (LCE) program transitional changes include a re-architecture of its radar control group process with 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. Because the Navy requires an air traffic control radar, this project unit will include engineering efforts to identify requirements and develop a suitable replacement 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 IFF, and integrating a flat panel monitor into the AN/UYQ-70 console. The development of an Air Traffic Control common console will reduce operational costs, improve reliability, and provide compatible interfaces and commonality for all ATC workstations.

**Test Article Descriptions:**

For AN/SPN-46 Radar Control Group, three test articles were procured to perform concurrent testing in January 2005 and completed in September 2006. The test article is a direct replacement of the Radar Control Group equipment rack, employing a set of Vera Module Eurocards to improve the performance of antenna control, antenna position reporting and radar timing control functions.

For AN/SPN-46 Computer Group, a test article is required to perform a series of tests beginning January 2008 and completing in September 2009. This test article will replace two existing computer racks with a single rack utilizing a set of state-of-the-art Versa Module Eurocard processors and software rewritten in a high order program language ("C").

For AN/TPX-42, Air Traffic Control Common Console a test article is required to perform operational assessment in 4th quarter FY2007. The test article is best described primarily in terms of its functionality. It will combine the existing AN/TPX-42 console's hardware with the functionality to display targets processed by AN/TPX-42, AN/SPN-46 and the Joint Precision Approach and Landing System (JPALS).

**B. ACCOMPLISHMENTS / PLANNED PROGRAM:**

AN/APN-46 Radar Control Group	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	1.520	0.000	0.000	0.000
RDT&E Articles Qty				

Conduct critical design review, complete system development, build test articles and conduct environmental testing, conduct configuration audits, conduct a test readiness review and operational assessment, and obtain Full Rate Production decision. Three test articles procured in FY 2005 are required to perform concurrent testing. These test articles can best be described as a direct replacement of the Radar Control Group equipment rack, employing a set of Versa Module Eurocards to improve the performance of antenna control, antenna position reporting and radar timing control functions.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL	PROJECT NUMBER AND NAME 0993, CARRIER ATC

AN/SPN-46 Computer Group Replacement	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	1.606	3.539	2.996	4.613
RDT&E Articles Qty		1		

This subproject replaces the AN/AYK-14 processor and converts software from CMS to "C" language . Conduct a software requirements review and develop a specification. Develop software and hardware, build a test article, and integrate and test it in a lab environment. Conduct a test readiness review, developmental test and operational test. The test article is required to perform a series of tests in December 2007. This test article will replace two existing computer racks with a single rack utilizing a set of state-of-the-art Versa Module Eurocard processors and software rewritten in a high order program language ("C").

AN/TPX-42 Improvements	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	1.810			.957
RDT&E Articles Qty				

Complete development of a Field Change 3 configuration to integrate Mode 5 capability, using the console from AN/TPX-42A(V)14 with Field Change 2 as the core technology. Conduct requirements and design reviews, and conduct an Operational Assessment. Following successful Full Rate Production approval, the design change will be introduced into the production of 'E', 'F' and 'G' Kits. Begin development of the final Air Traffic Control Console configuration in December 2008 to include JPALS interface and replacement of SPN-35 Operator displays. It is anticipated that this technology insertion will result in a formal nomenclature change for the AN/TPX-42 system, so the identification of the modification kits will change to 'H' Kits.

Test article bought in FY2005 are required to perform environmental, shock, and vibration in 4th quarter FY2007. The test article can be described primarily in terms of its functionality. It combines the existing AN/TPX-42 console's hardware with the functionality to display targets processed by a Mode 5 interrogator.

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
57 - OPN BLI 283100 Shipboard Air Traffic Control	7.928	7.446	7.719	8.062	8.158	9.419	9.590	11.264	Continuing	Continuing
58 - OPN BLI 283200 Automatic Carrier Landing Systems	15.938	17.932	18.403	19.077	19.423	19.655	20.043	20.403	Continuing	Continuing

**D. ACQUISITION STRATEGY:**

AN/SPN-46 Radar Control Group redesign and AN/SPN-46 Computer Group replacement subprojects are part of the AN/SPN-46 Life Cycle Extension (LCE) project, which is anticipated to be designated ACAT IV. Initial contract was awarded in November 2003 for the Radar Control Group, and the contract for the Computer Group was awarded in December 2005. The AN/SPN-46 LCE project, in May 2006, was downgraded from an Abbreviated Acquisition Program (AAP) to an ECP.

AN/TPX-42 Common Console is an anticipated ACAT IV program, with improvements being incorporated into the production of AN/TPX-42 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.

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5		PROGRAM ELEMENT 0604504N, AIR CONTROL				PROJECT NUMBER AND NAME 0993, CARRIER ATC						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2007 Cost	FY 2007 Award Date	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Primary Hdw Develop - SPN-46	WX	NAWCAD, Pax River, MD	11.238	0.310	11/06						11.548	
Primary Hdw Develop - SPN-46	SS/CPIF	SNC, Sierra, NV	6.086	0.270	12/06						6.356	6.356
Primary Hdw Develop - TPX-42	WX	NAWCAD, Pax River, MD	2.623								2.623	
SUBTOTAL PRODUCT DEVELOPMENT			19.947	0.580							20.527	

Remarks:

SUPPORT												
Software Development - SPN-46	WX	NAWCAD, Pax River, MD	4.014	0.332	11/06	1.218	11/07	0.379	11/08	Continuing	Continuing	
Software Development - SPN-46	C/CPFF	TBD		2.569	12/06	0.623	12/07	3.063	12/08		6.255	6.255
Software Development - TPX-42	WX	NAWCAD, Pax River, MD	2.929					0.957	11/08		3.886	
Integrated Logistics Support - TPX-42	WX	NAWCAD, Pax River, MD	0.632								0.632	
Studies & Analyses - SPN-46	WX	NAWCAD, Pax River, MD	0.273								0.273	
SUBTOTAL SUPPORT			7.848	2.901		1.841		4.399		Continuing	Continuing	

Remarks:

TEST & EVALUATION												
Developmental Test & Eval - SPN-46	WX	NAWCAD, Pax River, MD	0.626			1.059	12/07	1.117	12/08	Continuing	Continuing	
Developmental Test & Eval - TPX-42	WX	NAWCAD, Pax River, MD	0.748								0.748	
Operational Test & Eval - TPX-42	WX	OPTEVFOR, Norfolk, VA	0.062								0.062	
SUBTOTAL TEST & EVALUATION			1.436			1.059		1.117		Continuing	Continuing	

Remarks:

MANAGEMENT												
Program Management Support	C/CPAF	NTA, Patuxent River, MD	1.296	0.043	12/06	.081	12/07	.039	12/08		1.459	1.459
Travel	TO	NAVAIRHQ, Pax River, MD	0.060	0.015	11/06	.015	11/07	.015	11/08	Continuing	Continuing	
SUBTOTAL MANAGEMENT			1.356	0.058		.096		.054		Continuing	Continuing	

Remarks:

Total Cost			30.587	3.539		2.996		5.570		Continuing	Continuing	
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EXHIBIT R4, Schedule Profile																								DATE:								
AN/TPX-42 Air Traffic Control Common Console Field Change 3																								February 2007								
APPROPRIATION/BUDGET ACTIVITY								PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME																
RDT&E,N / BA-5								0604504N, AIR CONTROL								0993, CARRIER ATC																
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
System Development of AN/TPX-42 Field Change 3																																
EDM Radar Delivery																																
Test Readiness Review																																
<b>Test &amp; Evaluation Milestones</b>																																
Operational Assessment																																
<b>Production Milestones</b>																																
AN/TPX-42 ATC Common Console FC3 Full Rate Production (FRP) Decision																																
Production Deliveries																																

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EXHIBIT R4, Schedule Profile																							DATE:									
AN/TPX-42B Air Traffic Control Common Console																							February 2007									
APPROPRIATION/BUDGET ACTIVITY												PROGRAM ELEMENT NUMBER AND NAME												PROJECT NUMBER AND NAME								
RDT&E,N / BA-5												0604504N, AIR CONTROL												0993, CARRIER ATC								
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>																																
System Requirements Review of AN/TPX-42B																																
Preliminary Design Review																																
System Development																																
Critical Design Review																																
Quality Design and Build																																
EDM Radar Delivery (Qty 1)																																
Test Readiness Review																																
<b>Test &amp; Evaluation Milestones</b>																																
Operational Assessment																																
<b>Production Milestones</b>																																
Full Rate Production (FRP) Decision																																
Production Deliveries																																



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AN/SPN-46 Radar Control Group																										February 2007						
APPROPRIATION/BUDGET ACTIVITY													PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME									
RDT&E,N / BA-5													0604504N, AIR CONTROL										0993, CARRIER ATC									
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>Acquisition Milestones</b>	POC		PT2 ECP/LRIP		FRP		FCA								MSD				FOC													
Reviews	EDM TRR	PRR			PCA																											
Prototype Phase																																
<b>Test &amp; Evaluation Milestones</b>																																
Prototype: DT-IB EDM 1: DT-IB (Integration & flight) EDM 2: DT-III B (EMI/ENV/Shock & Vibe) EDM 3: DT-IV B (Shipboard)	DT-IB / Report				DT-IIB/ Report																											
		EMI / Report																														
		ENV / Report																														
			Shock / Vibe / Report																													
				DT-B III / Reports																												
								DT-IVB/ Report																								
<b>Production Milestones</b>																																
LRIP (Lot 1) FY 06 & FY 07																																
FRP (Lot 2) FY 07 & FY 08																																
FRP (Lot 3) FY 08 & FY 09																																

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Exhibit R-4a, Schedule Detail AN/SPN-46 RADAR CONTROL GROUP						DATE: February 2007		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME		
RDT&E,N / BA-5		0604504N, AIR CONTROL				0993, CARRIER ATC		
Schedule Profile	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Engineering Demonstration Model (EDM TRR)	1Q							
Preproduction Readiness Review (PRR)	2Q							
Physical Configuration Audit (PCA)	4Q	1Q						
DT-IB Testing	1Q							
DT-IIB	1Q							
DT-IIIB	1Q-3Q							
DT-IVB	4Q	1Q						
Preliminary Operational Capability (POC)	1Q							
Part 2 ECP	3Q							
Full Rate Production (FRP)		1Q						
Functional Configuration Audit (FCA)		3Q						
Initial Operational Capability (IOC)	4Q							
Material Support Date (MSD)				3Q				
Full Operational Capability (FOC)					3Q			
Production Contract Award	4Q							
Low Rate Initial Production Delivery (Lot 1)	4Q	1Q-4Q						
Full Rate Production (FRP) Lot 2		3Q-4Q	1Q-4Q					

**UNCLASSIFIED**

CLASSIFICATION:

EXHIBIT R4, Schedule Profile AN/SPN-46 COMPUTER GROUP																								DATE: February 2007											
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5												PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL												PROJECT NUMBER AND NAME 0993, CARRIER ATC											
Fiscal Year	FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011				FY 2012				FY 2013						
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4			
Acquisition Milestones												Part 1 ECP												Part 2 ECP											
Contract Award																																			
Software Development of AN/SPN-46 Computer Group												[Bar: FY 2006 Q1-Q4, FY 2007 Q1-Q2]																							
Hardware Development												[Bar: FY 2007 Q3-Q4]																							
EDM Radar Delivery												1 [Triangle: FY 2008 Q1]																							
System Integration and Test												Lab Intearation [Bar: FY 2008 Q2]																							
Test & Evaluation Milestones																																			
Test Readiness Review												[Triangle: FY 2008 Q3]																							
Developmental Test												[Bar: FY 2008 Q4]																							
Operational Test												[Bar: FY 2009 Q1-Q2]																							
Production Milestones																																			
FRP Start FY 09																								[Bar: FY 2009 Q3-Q4]											
																								FRP AWARD [Triangle: FY 2009 Q4]											
Production Deliveries																								Lot 1 (2) [Arrow: FY 2010 Q1]											



EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2007			
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL			PROJECT NUMBER AND NAME 1657, ATC IMPROVEMENT				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
1657 ATC IMPROVEMENT		.380	.407	0.000	.439	.451	.456	.463	.472
RDT&E Articles Qty									

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This program provides for engineering development, integration, adaption, 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 effecting 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 Preplanned Product Improvements, with additional RDT&E efforts required for modified commercial-off-the-shelf (COTS) ATC systems and equipment for modernization and recapitalization of these systems at our NAS, MCAS & Fleet Area Control & Surveillance Facilities (FACSFAC)s worldwide. Landing Systems initiatives include re-engineering and technology insertion efforts for the Precision Approach Radar (PAR), Tactical Air Navigation System (TACAN), and other landing systems.

**B. ACCOMPLISHMENTS / PLANNED PROGRAM:**

NAS MOD VIDS	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.186	.287	0.000	.324
RDT&E Articles Qty				

Continue engineering development of pre-planned product improvements for the Visual Information Display Systems (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.

Landing Systems PAR & TACAN	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.100	.100	0.000	.095
RDT&E Articles Qty				

Initiate re-engineering and technology insertion efforts for the PAR, the TACAN and other Landing Systems and Navigation Aids.

Fleet ATC Systems	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost				.020
RDT&E Articles Qty				

Research efforts to determine the best technical approach to integrate various data link and communication system upgrades into the FACSFAC System including the Digital Airport Surveillance Radar into the FACSFAC FACTS 3200 system. Evaluate alternatives for future processor/display systems.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2007
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL	PROJECT NUMBER AND NAME 1657, ATC IMPROVEMENT

FACSFAC	FY 2006	FY 2007	FY 2008	FY 2009
Accomplishments / Effort / Sub-total Cost	.094	.020		
RDT&E Articles Qty				

Research efforts to determine the best technical approach to integrate various data link and communication system upgrades into the FACSFAC System including the Digital Airport Surveillance Radar into the FACSFAC FACTS 3200 system. Evaluate alternatives for future processor/display systems.

C. OTHER PROGRAM FUNDING SUMMARY:	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
59 - OPN BLI 284000 National Air Space System	18.200	27.319	25.331	29.206	29.857	30.298	30.883	31.456	Continuing	Continuing
60 - OPN BLI 284500 Fleet Air Traffic Control Systems	3.904	18.053	7.935	8.245	8.453	8.620	8.781	8.947	Continuing	Continuing
61 - OPN BLI 284600 Landing Systems	7.765	9.120	9.384	10.599	10.857	11.059	11.257	11.454	Continuing	Continuing
62 - OPN BLI 284700 FACSFAC	3.262	2.266	0.000	0.000	0.000	0.000	0.000	0.000	0.000	166.854

Note: FACSFAC (284700) OPN Budget is being merged with the Fleet Air Traffic Control Systems budget (BLI 284500) effective FY2008.

**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.

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2007																		
APPROPRIATION/BUDGET ACTIVITY RDT&E,N / BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604504N, AIR CONTROL			PROJECT NUMBER AND NAME 9999, CONGRESSIONAL ADD																			
COST (\$ in Millions)			FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013															
			2.957																						
RDT&E Articles Qty																									
<p><b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b> Congressional Add</p>																									
<p><b>B. ACCOMPLISHMENTS / PLANNED PROGRAM:</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">9564</td> <td style="width: 12.5%;">FY 2006</td> <td style="width: 12.5%;">FY 2007</td> <td style="width: 12.5%;">FY 2008</td> <td style="width: 12.5%;">FY 2009</td> </tr> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td style="text-align: center;">2.957</td> <td></td> <td></td> <td></td> </tr> <tr> <td>RDT&amp;E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>											9564	FY 2006	FY 2007	FY 2008	FY 2009	Accomplishments / Effort / Sub-total Cost	2.957				RDT&E Articles Qty				
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Accomplishments / Effort / Sub-total Cost	2.957																								
RDT&E Articles Qty																									
<p>Transportable Transponder Landing System (TTLS) Funding supports development and testing of hardware and software modifications to the existing Transportable Transponder Landing Systems (TTLS) product to enhance operational capabilities compatible with expeditionary U.S. Marine Corps Air Traffic Control requirements. Improvements include interoperability, software compatibility, and hardware upgrades including miniaturization to support improved transportability. Provides engineering, logistical and technical services in support of evaluation of TTLS.</p>																									