CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: FEBRUARY 2006	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-4**				R-1 ITEM NOMENCLATURE **0603879N SINGLE INT AIR PICTURE (SIAP) SYS ENG**			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**19.617**	**36.170**	**50.282**	**25.959**	**0.505**	**0.436**	**0.278**
Project 3031/Single Int. Air Picture (SIAP)	**19.617**	**36.170**	**50.282**	**25.959**	**0.505**	**0.436**	**0.278**

A. (U) Mission Description and Budget Item Justification

Single Integrated Air Picture (SIAP) is the product of fused, near-real-time and real-time data from multiple sensors to allow development of common, continuous, and unambiguous tracks of all airborne objects in the surveillance area. All airborne objects must be detected, tracked, and reported. Each object must have one and only one track identifier and associated characteristics to be incorporated into SIAP. Current systems do not provide this capability. The Joint SIAP System Engineering Organization (JSSEO), approved by the Joint Requirements Oversight Council (JROC) in March 2000, was chartered in Oct 2000 by the Under Secretary of Defense (A&T) to perform "the system engineering needed to fix problems in the existing Joint Data Network (JDN) and to guide development toward a future SIAP capability."

This Joint engineering organization will develop tools/processes and perform system engineering that will identify cost effective fixes to US/coalition tactical data link systems. The resulting fixes will be addressed in incremental blocks designed to improve the SIAP. Each block will identify specific changes to be implemented in tactical systems to improve integrated air and missile defense/theater air warfare capabilities.

* Block 0 addressed four joint warfighting shortfalls selected for their impact on the Joint Data Network (JDN), their applicability across the Services, and the engineering maturity reflected by interface change proposals already on-record. The Block 0 issues addressed were a common correlation/decorrelation, formation tracking/correlation, identification taxonomy and symbology, and an identification (ID) conflict resolution matrix.

* Block 1 is addressing a set of JDN deficiencies approved by United States Joint Forces Command to provide warfighter benefits which can be implemented in the near- to mid-term. The issues being addressed are a further reduction of dual tracks, improved combat ID capability, improved data sharing (network capacity), and improved air picture for theater ballistic missile defense performance. Improvements addressing these issues will be implemented via integration of the Integrated Architecture Behavior Model (IABM) into the various Combat Systems being used or being developed by the Services including the Navy. Block 1 will also address Peer-to-Peer network and network Quality of Service issues.

This PE provides the resources for the Navy system engineering support to the Joint effort to develop SIAP capability and system engineering support to Navy Pathfinder Programs of Record (E-2, Aegis, SSDS) for integration of the Joint solution.

R-1 SHOPPING LIST - Item No 78

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: FEBRUARY 2006	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT NUMBER AND NAME **0603879N SINGLE INT. AIR PICTURE (SIAP) SYS ENG**			PROJECT NUMBER AND NAME Project 3031/Single Int. Air Picture (SIAP)			
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**19.617**	**36.170**	**50.282**	**25.959**	**0.505**	**0.436**	**0.278**
RDT&E Articles Qty	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

At the direction of the Office of the Secretary of Defense and working in conjunction with the Joint SIAP System Engineering Organization (JSSEO), the Navy mission is to support the design, development and testing of a SIAP capability which satisfies requirements mandated by the Global Information Grid (GIG), Theater Air and Missile Defense (TAMD) and Combat Identification (CID) Capstone Requirements Documents (CRD). The SIAP capability will provide the Navy warfighter with the ability to better understand the battlespace and employ weapons to the full extent of their designed capabilities. The SIAP will support the spectrum of offensive and defensive operations by US, allied, and coalition partners in the airspace within a theater of operations (e.g., attack operations, suppression of enemy air defenses, air and missile defense, intelligence preparation of the battlefield). The SIAP is accomplished through a combination of materiel and nonmateriel improvements. This effort through the application of disciplined System Engineering processes, policies, products and services will enable the delivery of an integrated, interoperable, reliable, and maintainable Joint SIAP capability in Navy warfare systems/platforms, in support of Joint and Navy Mission Capabilities.

SIAP capability is being introduced through a series of improvements called Configurations (Capability Drops), targeted at eliminating specific interoperability issues, providing C4I enhancements, and delivering an executable integrated architecture. The engineering specifications and requirements developed by each configuration system engineering effort will be incorporated into the successive versions of the Joint IABM developed within a two year spiral capability improvement process. The delivered IABM will be used to develop the successive versions of the platform specific applications to be implemented in the Navy combat systems which will provide the Joint SIAP capability. The IABM will also be used as a standard against which to assess performance of the Navy combat systems in terms of Joint Force interoperability. The Navy is investing in the Open Architecture construct for many reasons, one of which is to create the combat system computing architecture which will permit the most rapid and least expensive implementation of the IABM and other Joint applications. To that end, this effort is also providing some resources to the Open Architecture system engineering process.

Implementation of a platform specific application in the Navy Pathfinder combat systems (E-2, Aegis, and SSDS), will reduce the risk of fratricide to US/coalition forces caused by incorrect correlation and ID association and enable our combatant commanders to exploit the full kinematic range of our weapons through better Joint Force integration.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: FEBRUARY 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA 4	**0603879N SINGLE INT AIR PICTURE (SIAP) SYS ENG**	**Project 3031/Single Int. Air Picture (SIAP)**

B. Accomplishments/Planned Program (Cont.)

	FY05	FY06	FY07	
Navy Block Upgrade Implementation	19.617	36.170	50.282	

(U)FY2005 ACCOMPLISHMENTS:
The FY05 Block 1 effort was focused on completion of the reference algorithms for use in the IABM. Other FY05 efforts included completing alignment of the SIAP Integrated Architecture and Navy Open Architecture functional allocations. The host combat systems (Aegis, SSDS, E-2) continued migration efforts towards an open architecture computing environment to enable integration of the Joint IABM functionality. Navy Stakeholders continued required system engineering efforts including identification and correction of integration issues, and testing of the IABM software and functionality in a simulation/stimulation environment. Configuration 05 was delivered as an engineering prototype. Risk mitigations were conducted. Continued Block 0 efforts focused on completing implementation of the Common Correlation Algorithm in ACDS Block 0.

(U) FY2006 PLAN:
The FY06 Block 1 System Engineering effort is focused on completion of the IABM required to support Configuration 2007 (Capabilty Drop 1) delivery at the end of FY07. In addition, the Pathfinder Combat Systems (Aegis, SSDS, E-2) will continue to migrate to an open architecture computing environment in accordance with the Navy Open Architecture Roadmap. This will enable integration of the Joint IABM functionality. In support of integration, prototype adaptation layers and associated interface design specifications for the IABM will be developed this year. Engineering Assessments and developmental testing of the IABM software to validate and verify functionality in a simulation/stimulation environment will be conducted throughout the year. During the last quarter of this year, the Navy will conduct an at sea demonstration of a reference implementation of the IABM using the Common Network Interface as a host. Block 0 efforts are focused on integration of Interface Change Proposal TJ00-004 (ID Taxonomy) in the F/A-18 mission computer, verifying integration of ICP TM98-035 (Common Correlation Algorithm) in the E-2 mission computer, and supporting migration to open architecture in the Aegis and SSDS combat systems.

(U) FY2007 PLAN:
The FY07 System Engineering effort will be focused on completion of the adaptation layers and associated interface design specifications for the IABM which will support Capability Drop 1. These efforts include validation of the functionality to be delivered and review of the engineering artifacts which support development of the IABM based host specific applications for implementation. The Navy will continue engineering risk reduction efforts in support of IABM integration. The purpose of these system engineering efforts is to ultimately enable seamless integration of the IABM into host Navy Combat Systems. In addition, system engineering will continue in support of the joint spiral development of the IABM Configuration 2009 to be delivered in support of Capability Drop 2. Block 0 efforts will complete this year with the validation of the integration of Interface Change Proposal TJ00-004 (ID Taxonomy) in the F/A-18 mission computer and migration to open architecture in the Aegis and SSDS combat systems.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	**0603879N SINGLE INT AIR PICTURE (SIAP) SYS ENG**	**Project 3031/Single Int. Air Picture (SIAP)**

C. PROGRAM CHANGE SUMMARY:

Funding:	FY2005	FY2006	FY2007
FY06 President's Budget	19.957	36.721	50.837
FY 07 President's Budget	19.617	36.170	50.282
Total Adjustments	-0.340	-0.551	-0.555
Summary of Adjustments			
General provisions	-0.011	-0.551	0.000
Programmatic changes	0.000	0.000	-0.555
SBIR	-0.329	0.000	0.000
Subtotal	-0.340	-0.551	-0.555

Schedule: See Atached R4.

Technical: Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	**0603879N SINGLE INT AIR PICTURE (SIAP) SYS ENG**	**Project 3031/Single Int. Air Picture (SIAP)**

D. OTHER PROGRAM FUNDING SUMMARY: Block 1

Line Item No. & Name

Related RDT&E: Computer programs developed under these programs are tested in their integrated configuration.

PE 0605853N 3039 (CHENG)
PE 0205604N 2126 (CDLMS)
PE 0603582N 0164(DEP)
PE 0604307N 1447 (AEGIS)
PE 0604755N 2178 (SSDS)
PE 0604518N 1604 (ACDS)
PE 0603658N 2039 (CEC)
PE 0204136N 1662 (F/A 18)
PE 0204152N 0463 (E2C)

E. Acquisition Strategy: Not Applicable

F. MAJOR PERFORMERS:

Naval Surface Warfare Center, Dahlgren VA - Surface Combatant System Engineering and Computer Integration
Naval Air Warfare Center Aircraft Division, Patuxent River MD - Aircraft Platform Integration and System Engineering
Space and Warfare Systems Command, San Diego CA - System Communication

Exhibit R-3 Cost Analysis (page 1) UNCLASSIFIED DATE: FEBRUARY 2006

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NAME AND NUMBER
RDT&E, N/BA-4	**0603879N**	3031 - SINGLE INTEGRATED AIR PICTURE SYS ENG TASK FORCE

Cost Categories (Tailor to WBS, or System/Item Req't)	Contract Method & Type	Performing Activity & Location	Total *PY s Cost	**FY 05 Cost**	FY 05 Award Date	**FY 06 Cost**	FY 06 Award Date	**FY 07 Cost**	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Block 0 (JSSEO)	MIPR	Army PEO/AMD, Huntsville AL	0.879	0.000	VAR	0.000	VAR	0.000	VAR			0.000	0.000	
	MIPR	Navy PEO/TSC, Arlington VA	1.129	0.000		0.000		0.000				0.000	0.000	
	MIPR	Air Force ESC, Boston MA	1.329	0.000		0.000		0.000				0.000	0.000	
	MIPR	Marine MARCOR, Quantico VA	0.621	0.000		0.000		0.000				0.000	0.000	
	VAR	Contract Supt, Various	5.155	0.000		0.000		0.000				0.000	0.000	
Subtotal Block 0			10.308	0.000		0.000		0.000						
Block 1 (JSSEO)	MIPR	Army PEO/AMD, Huntsville AL	15.340	0.000	VAR	0.000	VAR	0.000	VAR			0.000	0.000	
	MIPR	Navy PEO/TSC, Arlington VA	16.085	0.000		0.000		0.000				0.000	0.000	
	MIPR	AF ESC/DI, Boston MA	17.114	0.000		0.000		0.000				0.000	0.000	
	MIPR	Marine MARCOR, Quantico VA	7.045	0.000		0.000		0.000				0.000	0.000	
	VAR	Contract Supt, Various	20.699	0.000		0.000		0.000				0.000	0.000	
Subtotal Block 1			76.282	0.000		0.000		0.000				0.000	0.000	
Block 2 (JSSEO)	MIPR	Army PEO/AMD, Huntsville AL	2.060	0.000	VAR	0.000	VAR	0.000	VAR			0.000	0.000	
	MIPR	Navy PEO/TSC, Arlington VA	2.266	0.000		0.000		0.000				0.000	0.000	
	MIPR	AF ESC/DI, Boston MA	2.369	0.000		0.000		0.000				0.000	0.000	
	MIPR	Marine MARCOR, Quantico VA	1.030	0.000		0.000		0.000				0.000	0.000	
	VAR	Contract Supt, Various	2.271	0.000		0.000		0.000				0.000	0.000	
Subtotal Block 2			9.996	0.000		0.000		0.000						
Architecture (JSSEO)	MIPR	Army PEO/AMD, Huntsville AL	1.536	0.000	VAR	0.000	VAR	0.000	VAR			0.000	0.000	
	MIPR	Navy PEO/TSC, Arlington VA	1.625	0.000		0.000		0.000				0.000	0.000	
	MIPR	AF ESC/DI, Boston MA	1.684	0.000		0.000		0.000				0.000	0.000	
	MIPR	Marine MARCOR, Quantico VA	0.786	0.000		0.000		0.000				0.000	0.000	
	VAR	Contract Supt, Various	2.364	0.000		0.000		0.000				0.000	0.000	
Subtotal Architecture			7.995	0.000		0.000		0.000						
System Engineering	MIPR	Army PEO/AMD, Huntsville AL	0.988	0.000	VAR	0.000	VAR	0.000	VAR			0.000	0.000	
Tools & Analysis	MIPR	Navy PEO/TSC, Arlington VA	0.876	0.000		0.000		0.000				0.000	0.000	
(JSSEO)	MIPR	AF ESC/DI, Boston MA	1.206	0.000		0.000		0.000				0.000	0.000	
	MIPR	Marine MARCOR, Quantico VA	0.520	0.000		0.000		0.000				0.000	0.000	
	VAR	Contract Supt, Various	1.191	0.000		0.000		0.000				0.000	0.000	
Subtotal SE Tools & Analysis			4.781	0.000		0.000		0.000				0.000		
Validation and Certificatior	WR	Navy DEP/JDEP, NSWC-DD, Dahlgren VA	7.000	0.000		0.000		0.000						
BLOCK 0 (NAVY)					VAR		VAR		VAR				CONT	
	VAR	NAVSEA, Washington DC	1.174	0.000		0.000		0.000				CONT	CONT	
	VAR	PEO IWS, Washington, DC	4.476	1.400		1.600		1.200				CONT	CONT	
	WX/VAR	NAVAIR, Pax River, MD	4.757	0.000		0.000		0.000				CONT	CONT	
	PD/FAD	SPAWAR, San Diego, CA	3.428	0.000		0.000		0.000				CONT	CONT	
	PD	CHENG, Washington, DC	0.500	0.000		0.000		0.000				CONT	CONT	
Subtotal BLOCK 0			14.335	1.400		1.600		1.200				CONT	CONT	
BLOCK 1 (NAVY)					VAR		VAR		VAR				CONT	
	VAR	NAVSEA, Washington DC	0.000	3.450		11.658		1.691				CONT	CONT	
	VAR	PEO IWS, Washington, DC	0.000	7.082		10.094		28.682				CONT	CONT	
	WX/VAR	NAVAIR, Pax River, MD	0.000	4.493		9.188		12.939				CONT	CONT	
	PD/FAD	SPAWAR, San Diego, CA	0.000	3.192		3.630		5.770				CONT	CONT	
	PD	CHENG, Washington, DC	0.000	0.000		0.000		0.000				CONT	CONT	
Subtotal BLOCK 1			0.000	18.217		34.570		49.082				CONT	CONT	
SUBTOTAL			130.697	19.617		36.170		50.282		0.000		CONT	CONT	

Remarks:

CLASSIFICATION:

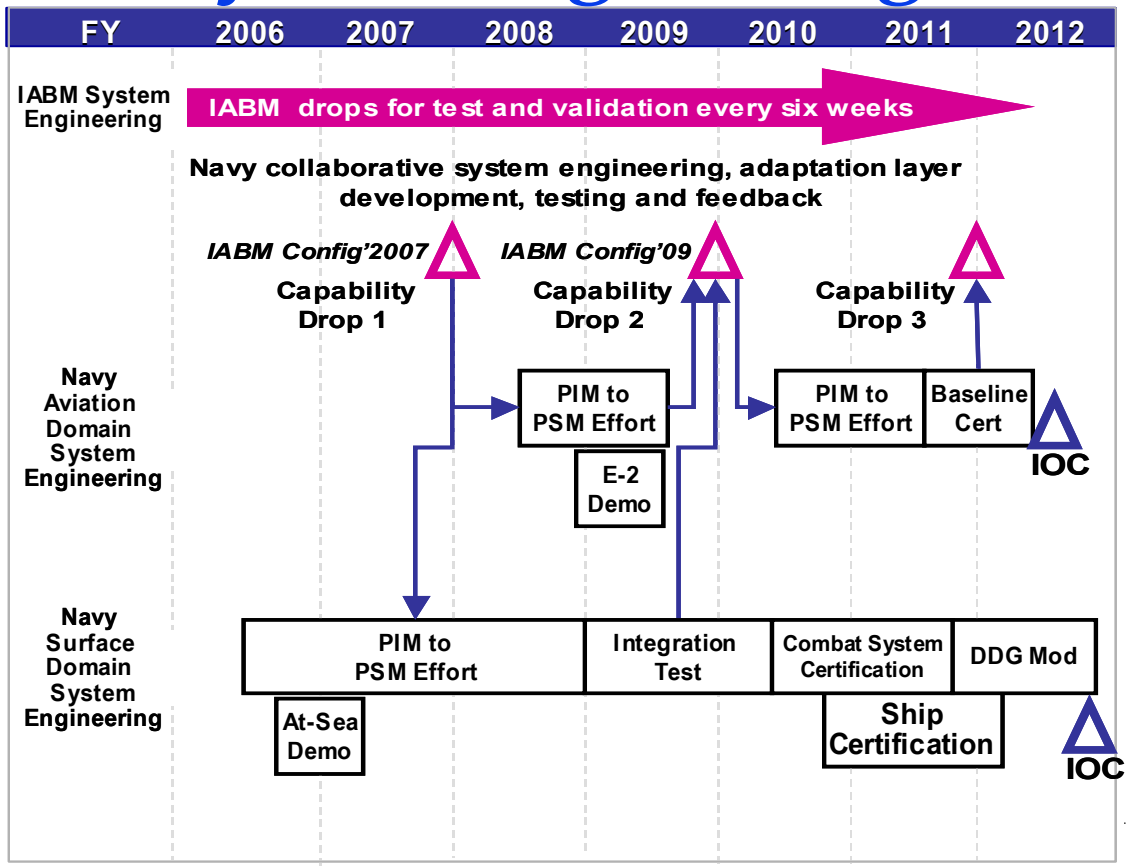
Exhibit R-3 Cost Analysis (page 2)									DATE: FEBRUARY 2006					
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-4**			PROGRAM ELEME **0603879N**	PROJECT NAME AND NUMBER 3031 - SINGLE INTEGRATED AIR PICTURE SYS ENG TASK FORCE										
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation														
Operational Test & Evaluation														
Tooling														
GFE														
Subtotal T&E			0.000	0.000		0.000		0.000		0.000			0.000	
Remarks:														
Contractor Engineering Support														
Government Engineering Support														
Program Management Support			0.975											
Travel			0.180											
Labor (Research Personnel)														
Rent/Const/Utilities/Computers														
Subtotal Management (JSSEO)			1.155	0.000		0.000		0.000		0.000		CONT	CONT	
Remarks:														
Total Cost			131.852	19.617		36.170		50.282		0.000		CONT	CONT	
Remarks:														

R-1 SHOPPING LIST - Item No. 78

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: FEBRUARY 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E,N/BA-4**	PROGRAM ELEMENT NUMBER AND NAME 0603879N SINGLE INTEGRATED AIR PICTURE (SIAP) SYS ENG	PROJECT NUMBER AND NAME Project 3031/Single Int. Air Picture (SIAP)

Navy SIAP System Engineering Schedule



R-1 SHOPPING LIST - Item No. 78

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: FEBRUARY 2006					
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-4**	PROGRAM ELEMENT 0603879N SINGLE INT. AIR PICTURE (SIAP) SYS ENG				PROJECT NUMBER AND NAME Project 3031/Single Int. Air Picture (SIAP)					
Schedule Profile	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
Sustaining Engineering/Infrastructure (Navy)								4Q		
Block 0 Common Correlation/Decorrelation Algorithm						4Q				
Start Config' 2007 (Capability Drop 1) System Engineering	1Q									
IABM Configuration 05 (Engineering Prototype) delivered	4Q									
IABM SFR		4Q								
IABM Reference Implementation At-Sea Demo		4Q								
IABM PDR			1Q							
Start Config'2009 (Capability Drop 2) System Engineering			1Q							
IABM (PIM) Adaptation Layers completed/delivered			4Q							
IABM Configuration 07 (Capability Drop 1) delivered				1Q						
E-2 and Aegis Capability Drop 1 PSM delivered					1Q					
E-2 IABM Implementation Demo					1Q					
IABM Configuration 09 (Capability Drop 2) delivered						1Q				
Capability Drop 1 PSM Integration Testing completed						2Q				
E-2 Capability Drop 2 PSM delivered							2Q			
Aegis (DDG) Installation Availiability begins							3Q			
Combat System Certification (Capability Drop 1)							4Q			
Aegis Ship Certification (Capability Drop 1)								1Q		
E-2 Baseline Certification (Capability Drop 2)								2Q		
Navy Joint (Air and Surface) SIAP Capability IOC								3Q		

R-1 SHOPPING LIST - Item No. 78