CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: FEBRUARY 2004	
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)	Prior Years	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		**67.034**	**14.411**	**20.252**	**36.958**	**50.844**	**26.004**	**0.447**
Project S3031/Single Int. Air Picture (SIAP)	**49,287**	**67.034**	**14.411**	**20.252**	**36.958**	**50.844**	**26.004**	**0.447**

PE transferred from SIAP System Engineering Task Force to the Navy starting in FY2004

A. (U) Mission Description and Budget Item Justification

A 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 SIAP System Engineering (SE) Task Force was approved by the Joint Requirements Oversight Council (JROC) in March 2000, and 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 PE is funded by all the services and controlled by the SIAP Acquisition Executive. Starting in FY2004 joint SIAP funding will transition to a US Army PE and related documentation will be provided through the US Army.

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 out integrated air and missile defense/theater air warfare capabilities. These blocks will identify the engineering specifications, supporting rationale (test results and analysis), and acquisition estimates expected to implement the changes. Once implemented by the Services, these improvements will reduce the risk of fratricide to US/coalition forces as well as allow our combatant commanders to exploit the full kinematic range of our weapons through better Joint Force integration.

R-1 SHOPPING LIST - Item No.78

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **FEBRUARY 2004**	
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 S3031/Single Int. Air Picture (SIAP)			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		**67.034**	**14.411**	**20.252**	**36.958**	**50.844**	**26.004**	**0.477**
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:

The Single Integrated Air Picture (SIAP) System Engineering (SE) Task Force (TF) is charged with implementing a disciplined systems engineering process to identify and recommend the most effective and efficient means to achieve a SIAP capability that satisfies warfighter needs. The product of the SIAP SE recommendations will be combat-ready, operationally certified equipment and computer programs that enable the warfighter to build and maintain a SIAP, as well as inputs to tactics, techniques, and procedures (TTP) necessary to operate the components of the integrated system.

• 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 fixes addressed were: improved correlelation/decorrelation, formation tracking/correlation, identification taxonomy and symbology, and an identification (ID) conflict resolution matrix. The effect of these fixes will reduce operator confusion and lay the groundwork for subsequent JDN improvements.

• 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: further reduction of dual tracks, improved combat ID capability, improved data sharing (network capacity), and improved air picture for theater ballistic missile defense performance.

Beginning in FY04 this project develops, designs, and tests Navy engineering changes for SIAP System Engineering Task Force Block upgrades in response to Joint Requirements Oversight Council (JROC) validated requirements. SIAP capability is being introduced through a series of Block improvements targeted at eliminating specific interoperability issues, providing C4I enhancements, and delivering an executable integrated architecture. Funding for planned systems upgrades (E-2C/CEC, AEGIS and Ship Self Defense System (SSDS).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
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 S3031/Single Int. Air Picture (SIAP)**

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
SIAP System Engineering Task Force		67.034	0.000	0.000

(U) FY2003 Accomplishments:

Continued developing Joint Data Network enhancements to improve the JTAMD FoS SIAP performance and continued to develop engineering concepts needed to support the Integrated Architecture. Specific products included a recommended list of Block 1 improvements which were presented to the JROC in the 1st Qtr of FY03, with the engineering specifications completed in 4th Qtr FY 03. Refined the set of metrics needed to define the completeness, continuity, and accuracy of target tracks; and a description of the systems used by the services and the capabilities and limitations of those systems in providing a Single Integrated Air Picture.

BLOCK 0: Monitor implementation of Block 0 fixes in Service systems. Conducted technical design reviews with 13 core affected weapon systems implementing Block 0 fixes.

BLOCK 1: Completed engineering of Block 1 SIAP improvements affecting 30-50 programs across DoD. Established technical configuration management of JROC approved solutions for Joint and NATO application.

BLOCK 2: Initiated definition of Block 2. Began the process of translating JROC validated requirements into equipment and computer programs with the Services and JFCOM. Coordinated design and solution development with the Services and Agencies. Developed program objectives and management plan in accordance with the SIAP system engineering process.

ARCHITECTURE: Continued development of the SIAP component of the JTAMD Integrated Architecture. Coordinated the matching of Block 1 solutions and Block 2 issues to the Joint requirements as defined in the CRDs and Integrated Architecture. Established maintenance functions to ensure that the Integrated Architecture functions as a Joint requirements engineering structure and decision making tool.

Systems Engineering Tools and Analysis: Developed analysis tools/techniques to evaluate the technical and warfighting benefits of the SIAP Block Improvements. Such analysis tools consist of modeling and simulation capabilities, hardware in the loop laboratories and data reduction of open-air live exercises. Analyzed and synchronized candidate solutions with respect to individual Services and weapon systems. Plot predicted and fielded Joint Tactical Data Link performance capabilities timelines.

Validation and Certification of SIAP Block 0/1 improvements: Identified and provided SIAP-specific fidelity improvements in national testing and certification facilities. These enhancements to the current land-based infrastructure are necessary to support accurate validation and certification of the implementation of SIAP Block improvements. SIAP Block Improvements will be tested and certified for operational use and the land based testing infrastructure will be used to validate achievement of SIAP's Measures of Effectiveness (MOEs) and Measures of Performance (MOPs).

Program Management: Continued to support SIAP TF infrastructure requirements such as rent, LAN (local area network), telephone, computers, VTC(video teleconferences) center, conference rooms, office equipment, facilities management / construction and contract office support.

Starting in FY2004 the Joint Siap Task Force will be funded in a US Army PE and the Navy SIAP Upgrade program is being realigned to this PE.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
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 S3031/Single Int. Air Picture (SIAP)**

B. Accomplishments/Planned Program (Cont.)

		FY 03	FY 04	FY 05
Navy Block Upgrade Implementation		0.000	14.411	20.252

(U) FY2004 PLAN:
Begins development of a SIAP reference implementation through the development of a “platform” independent behavior model and follow-on “platform” specific performance model in a digital computing environment. Navy Program Office engineering is required to assure common development of highly reusable software to accomplish the functionality required for each issue (e.g., data registration), and its integration with the functionality required for each system. FY 03 work is to design reference algorithms for priority core command and control systems: AEGIS, SSDS and E-2C/CEC.

(U) FY2005 PLAN:
Completes Block 1 design phase of the reference algorithms for the priority core command and control systems and initiates the code, debug and software testing phase in a simulation/stimulation environment. The Block 0 and Block 1 implementation funding for the Aegis, ACDS, SSDS and E2C programs have been consolidated into this PE stating this year.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **FEBRUARY 2004**
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 S3031/Single Int. Air Picture (SIAP)**

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 04 Pres Controls)	73.966	15.053	7.831
Current President's Budget: (FY05 Pres Controls)	67.034	14.411	20.252
Total Adjustments	-6.932	-0.642	12.421
Summary of Adjustments			
Management Reform/Reprogramming	-0.294	-0.168	-0.339
Congressional action	-0.524	-0.458	0.000
Programmatic Adjustment	0.000	0.000	12.846
BTR/SBIR	-4.918	0.000	0.000
Economic Assumptions	-1.196	-0.016	-0.086
Subtotal	-6.932	-0.642	12.421

Schedule: See Atached R4.

Technical: Not Applicable

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **DATE: FEBRUARY 2004**
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 S3031/Single Int. Air Picture (SIAP)**

D. OTHER PROGRAM FUNDING SUMMARY: Block 0/1

Line Item No. & Name

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

PE 0605853N S3039 (CHENG)
PE 0205604N X2126 (CDLMS)
PE 0603582N S0164(DEP)
PE 0604307N K1447 (AEGIS)
PE 0604755N K2178 (SSDS)
PE 0604518N K1604 (ACDS)
PE 0603658N K2039 (CEC)
PE 0204136N E1662 (F/A 18)
PE 0204152N E0463 (E2C)

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

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Exhibit R-3 Cost Analysis (page 1) | DATE: FEBRUARY 2004

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NAME AND NUMBER
RDT&E, N/BA-4	**0603879N**	S3031 - SINGLE INTEGRATED AIR PICTURE SYS ENG TASK FORCE

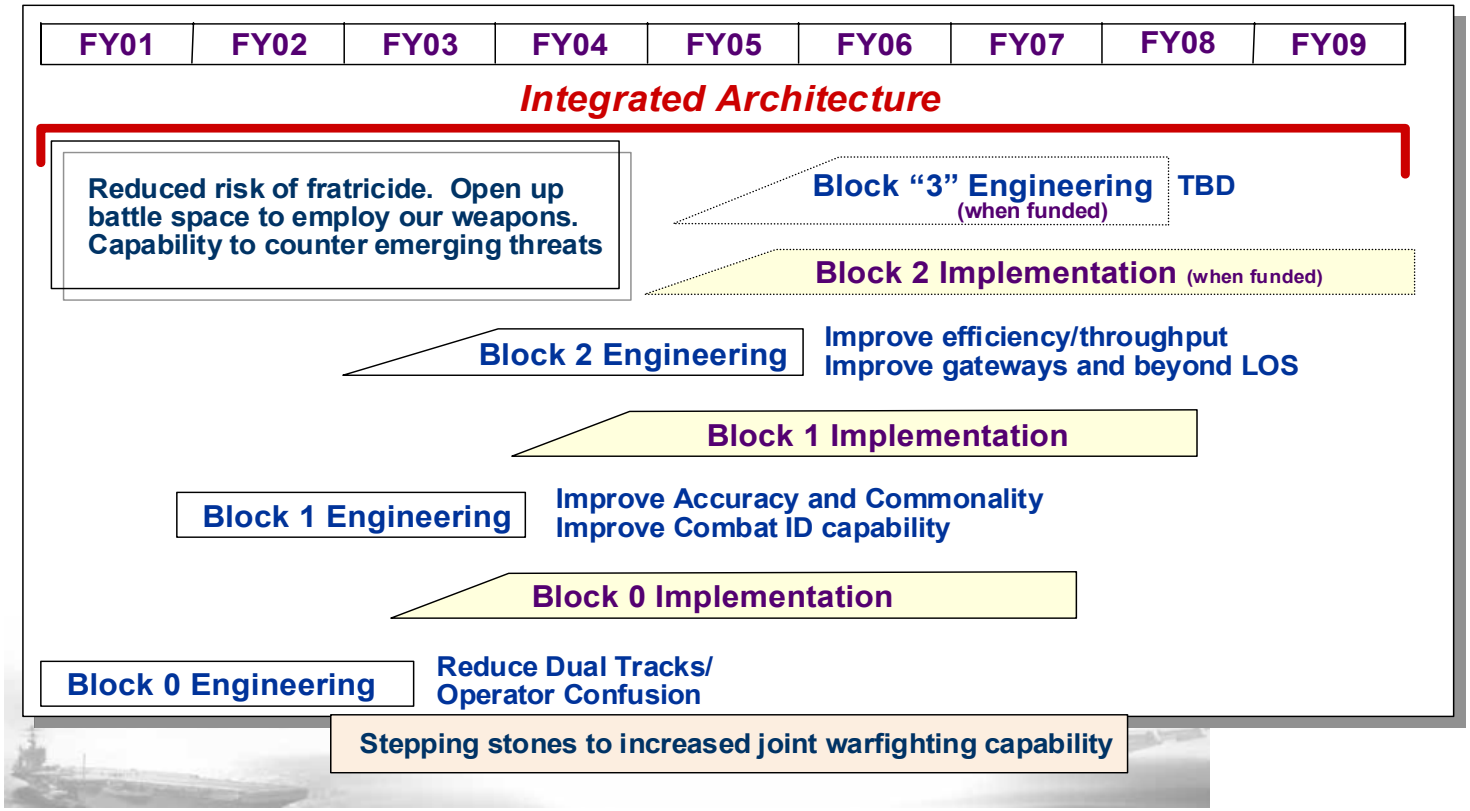
Cost Categories (Tailor to WBS, or System/Item Req't)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	**FY 03 Cost**	FY 03 Award Date	**FY 04 Cost**	FY 04 Award Date	**FY 05 Cost**	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Block 0	MIPR	Army PEO/AMD, Huntsville AL	0.838	0.041	VAR	0.000	VAR	0.000	VAR	0.000	0.000	
	MIPR	Navy PEO/TSC, Arlington VA	1.086	0.043		0.000		0.000		0.000	0.000	
	MIPR	Air Force ESC, Boston MA	1.283	0.046		0.000		0.000		0.000	0.000	
	MIPR	Marine MARCOR, Quantico VA	0.601	0.020		0.000		0.000		0.000	0.000	
	VAR	Contract Supt, Various	4.109	1.046		0.000		0.000		0.000	0.000	
Subtotal Block 0			7.916	1.196		0.000		0.000				
Block 1	MIPR	Army PEO/AMD, Huntsville AL	8.707	6.633	VAR	0.000	VAR	0.000	VAR	0.000	0.000	
	MIPR	Navy PEO/TSC, Arlington VA	9.180	6.905		0.000		0.000		0.000	0.000	
	MIPR	AF ESC/DI, Boston MA	9.866	7.248		0.000		0.000		0.000	0.000	
	MIPR	Marine MARCOR, Quantico VA	4.256	2.789		0.000		0.000		0.000	0.000	
	VAR	Contract Supt, Various	8.208	12.491		0.000		0.000		0.000	0.000	
	WX	NAVAIR, Pax River MD	0.000	0.000		0.000		0.000		0.000	0.000	
	WX	NSWC, Dahlgren VA	0.000	0.000		0.000		0.000		0.000	0.000	
	FAD	APL, Laurel MD	0.000	0.000		0.000		0.000		0.000	0.000	
	PD	SPAWAR, San Diego CA	0.000	0.000		0.000		0.000		0.000	0.000	
	VAR	Contract Supt, Various	0.000	0.000		0.000		0.000		0.000	0.000	
Subtotal Block 1			40.216	36.066		0.000		0.000		0.000	0.000	
Block 2	MIPR	Army PEO/AMD, Huntsville AL	0	2.060	VAR	0.000	VAR	0.000	VAR	0.000	0.000	
	MIPR	Navy PEO/TSC, Arlington VA	0	2.266		0.000		0.000		0.000	0.000	
	MIPR	AF ESC/DI, Boston MA	0	2.369		0.000		0.000		0.000	0.000	
	MIPR	Marine MARCOR, Quantico VA	0	1.030		0.000		0.000		0.000	0.000	
	VAR	Contract Supt, Various	0	2.271		0.000		0.000		0.000	0.000	
Subtotal Block 2				9.996		0.000		0.000				
Architecture	MIPR	Army PEO/AMD, Huntsville AL	0	1.536	VAR	0.000	VAR	0.000	VAR	0.000	0.000	
	MIPR	Navy PEO/TSC, Arlington VA	0	1.625		0.000		0.000		0.000	0.000	
	MIPR	AF ESC/DI, Boston MA	0	1.684		0.000		0.000		0.000	0.000	
	MIPR	Marine MARCOR, Quantico VA	0	0.786		0.000		0.000		0.000	0.000	
	VAR	Contract Supt, Various	0	2.364		0.000		0.000		0.000	0.000	
Subtotal Architecture				7.995		0.000		0.000				
System Engineering	MIPR	Army PEO/AMD, Huntsville AL	0	0.988	VAR	0.000	VAR	0.000	VAR	0.000	0.000	
Tools & Analysis	MIPR	Navy PEO/TSC, Arlington VA	0	0.876		0.000		0.000		0.000	0.000	
	MIPR	AF ESC/DI, Boston MA	0	1.206		0.000		0.000		0.000	0.000	
	MIPR	Marine MARCOR, Quantico VA	0	0.520		0.000		0.000		0.000	0.000	
	VAR	Contract Supt, Various	0	1.191		0.000		0.000		0.000	0.000	
Subtotal SE Tools & Analysis				4.781		0.000		0.000		0.000		
Validation and Certification	WR	Navy DEP/JDEP, NSWC-DD, Dahlgren VA	0	7.000		0.000		0.000				
BLOCK 1 TIER 2							VAR		VAR		CONT	
TIER 2	VAR	NAVSEA, Washington DC		0.000		1.250		1.230		CONT	CONT	
TIER 2	PD	PEO IWS, Washington, DC		0.000		4.476		6.000		CONT	CONT	
TIER 2	WX	NAVAIR, Pax River, MD		0.000		4.757		10.722		CONT	CONT	
TIER 2	PD	SPAWAR, San Diego, CA		0.000		3.428		1.800		CONT	CONT	
TIER 2	PD	CHENG, Washington, DC		0.000		0.500		0.500		CONT	CONT	
Subtotal BLOCK 1 TIER 2			0.000	0.000		14.411		20.252		CONT	CONT	
SUBTOTAL			48.132	67.034		14.411		20.252		CONT	CONT	

Exhibit R-3 Cost Analysis (page 1)

Remarks:

Exhibit R-3 Cost Analysis (page 2)										DATE: FEBRUARY 2004		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-4**			PROGRAM ELE **0603879N**	PROJECT NAME AND NUMBER S3031 - 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 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 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	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support			0.975									
Travel			0.180									
Labor (Research Personnel)												
Rent/Const/Utilities/Computers												
Subtotal Management			1.155	0.000		0.000		0.000		CONT	CONT	
Remarks:												
Total Cost			49.287	67.034		14.411		20.252		CONT	CONT	
Remarks:												

EXHIBIT R4, Schedule Profile		DATE: FEBRUARY 2004
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 S3031/Single Int. Air Picture (SIAP)



CLASSIFICATION:

Exhibit R-4a, Schedule Detail							**FEBRUARY 2004**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E BA-4**	PROGRAM ELEMENT 0603879N SINGLE INT. AIR PICTURE (SIAP) SYS ENG				PROJECT NUMBER AND NAME Project S3031/Single Int. Air Picture (SIAP)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Sustaining Engineering/Infrastructure (Navy)	1Q							4Q
Block 0 Implementation		1Q					4Q	
Block 1 Implementation				4Q			4Q	

R-1 SHOPPING LIST - Item No. 78