CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification					DATE: FEBRUARY 2004			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT NUMBER AND NAME 0604507N / Enhanced Modular Signal Processor (EMSP)				PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor			
COST ($ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		0.501	0.994	1.075	1.088	0.000	0.000	0.000
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:
The objective of this Program Element (PE) is to improve Navy Signal Processing Hardware and Software Capabilities. Efforts include the design, development and integration of a portable AN/UYS-X test set to support AN/UYS-1 and AN/UYS-2/2A platform system integration activities, development of a Portable Digital Signal Processing Operating System (PDOS) , an associated tool set that supports development of reusable signal processing application software, and replacement of obsolete, unreliable and unsupportable AN/UYS-1/2/2A legacy host computer resources.

Defense Emergency Response Funds (DERF) Funds:
Not Applicable

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 1 of 12)

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-05	0604507N / Enhanced Modular Signal Processor (EMSP	1440 / Enhanced Modular Signal Processor

B. Accomplishments/Planned Program

		FY 03	FY 04	FY 05
AN/UYS-X Portable Test Set		0.501		
RDT&E Articles Quantity				

Designed, developed and completed integration of a portable AN/UYS-X test set to support AN/UYS-1 and AN/UYS-2/2A platform system integration activities.

		FY 03	FY 04	FY 05
PDOS Development			0.230	0.250
RDT&E Articles Quantity				

Commence development of a Portable Digital Signal Processing Operating System (PDOS), an associated tool set that supports development of reusable signal processing application software.

		FY 03	FY 04	FY 05
Legacy Host Computer Replacement of AN/UYS-1/2/2A			0.764	0.825
RDT&E Articles Quantity				

Investigate and commence replacement of AN/UYS-1/2/2A legacy host computer resources which are obsolete, unreliable and unsupportable.

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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-05	0604507N / Enhanced Modular Signal Processor (EMSP)	1440 / Enhanced Modular Signal Processor

C. PROGRAM CHANGE SUMMARY:

	FY 2003	FY 2004	FY 2005
Funding:			
Previous President's Budget: (FY04 President's Controls) :	0.502	1.006	1.085
Current BES/President's Budget: (FY05 President's Controls)	0.501	0.994	1.075
Total Adjustments	-0.001	-0.012	-0.010
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions			
Congressional rescissions		-0.012	
SBIR/STTR Transfer			
Economic Assumptions			-0.009
Reprogrammings			
Other Navy/OSD Adjustments	-0.001		-0.001
Congressional increases			
Subtotal	-0.001	-0.012	-0.010

Schedule:

   None

Technical:

   None

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-05	0604507N / Enhanced Modular Signal Processor (EMSP)	1440 / Enhanced Modular Signal Processor

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
OPN BLI 2980 / Items Less Than $5M (N61 NSP portion only)	0.0	0.3	0.4	0.6	0.0	0.0	0.0	0.0	1.3

E. ACQUISITION STRATEGY:

Development work in this project is performed primarily by NAWC/Pax River and NAVSEA/Crane.

F. MAJOR PERFORMERS:

Naval Air Warfare Center/Patuxent River (NAWC/Pax River): EMSP Computer Program Support Activity (CPSA), Technical Design Agent
Naval Sea Systems Command (NAVSEA/Crane): EMSP ISEA/Hardware Support Activity

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Exhibit R-2a, RDTEN Project Justification
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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: **FEBRUARY 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**			PROGRAM ELEMENT 0604507N / Enhanced Modular Signal Processor (EMSP)			PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor						
Cost Categories	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
Signal Processor COTS Technology	Var.	Var.	3.215							0.000	3.215	
Subtotal Product Development			3.215	0.000		0.000		0.000		0.000	3.215	

Remarks:

Cost Categories	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
Software Development	WX	NAWC/Pax River, MD	3.705	0.344	12/02	0.672	11/03	0.651	11/04	Continuing	Continuing	
Hardware Development	WX	NAVSEA/Crane, IN	0.307	0.132	12/02	0.292	10/03	0.396	11/04	Continuing	Continuing	
Common Processing	Var.	Var.	0.050								0.050	
Common Processing	IP	ARI, CT	0.225								0.225	
Subtotal Support			4.287	0.476		0.964		1.047		Continuing	Continuing	

Remarks:

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 5 of 12)

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: FEBRUARY 2004		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**			PROGRAM ELEMENT 0604507N / Enhanced Modular Signal Processor (EMSP)			PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor						
Cost Categories	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
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Program Management Support	IP	TWD & Associates, VA	0.328	0.025	01/03	0.030	10/03	0.028	10/04	Continuing	Continuing	
Subtotal Management			0.328	0.025		0.030		0.028		Continuing	Continuing	
Remarks:												
Total Cost			7.830	0.501		0.994		1.075		Continuing	Continuing	
Remarks:												

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 6 of 12)

CLASSIFICATION:

EXHIBIT R4, Schedule Profile	DATE: **FEBRUARY 2004**

APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT NUMBER AND NAME 0604507N / Enhanced Modular Signal Processor (EMSP)	PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor

Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009			
	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

Portable Test Set

Acquisition Milestones

- Develop/Design System Specs for Portable Test Set
- Contract for Delivery of COTS Components
- Develop COTS Version Interfaces
- Develop SW Device Drivers
- Develop SW for COTS
- Fabricate/Integrate Systems

Test & Evaluation Milestones
- Conduct System Test

Production Milestones

- Deliveries — NAVSEA/CRANE ▲

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UNCLASSIFIED

Exhibit R-4a, Schedule Detail					DATE: **FEBRUARY 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**		PROGRAM ELEMENT 0604507N / Enhanced Modular Signal Processor (EMSP)			PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Portable Test Set System Development								
Portable Test Set System Design								
Contract for Delivery of COTS Components								
Develp COTS Version Interfaces								
Develop Software Device Drivers								
Develop Software for COTS Components		1Q-2Q						
Fabricate and Integrate Systems		1Q-3Q						
Conduct Systems Testing		3Q-4Q						
Delivery to ISEA (NAVSEA/Crane)		4Q						

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UNCLASSIFIED

Exhibit R-4, Schedule Profile
(Exhibit R-4, page 8 of 12)

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT NUMBER AND NAME 0604507N / Enhanced Modular Signal Processor (EMSP)	PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor

Fiscal Year / **PDOS and Tools**	2002				2003				2004				2005				2006				2007				2008				2009			
	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																																
PDOS & Tools Development, Research, Investigation										▭	▭																					
Develop PDOS Specification												▭	▭																			
Develop Prototype OS, Tools														▭	▭																	
Develop PDOS test suites															▭	▭																
Develop Signal Processing benchmark																▭	▭															
Test & Evaluation Milestones																																
Demonstrated PDOS																		▭														
Production Milestones																																
Work with Industry to Productize PDOS																	▭	▭														
Deliveries																				NAWC △												

Exhibit R-4, Schedule Profile
(Exhibit R-4, page 9 of 12)

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **FEBRUARY 2004**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**		PROGRAM ELEMENT 0604507N / Enhanced Modular Signal Processor (EMSP)			PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor				
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
PDOS and Tools Development			2Q-3Q					
Conduct Investigation and Research			3Q-4Q					
Develop PDOS Specification			4Q	1Q-2Q				
Publicize PDOS at DSP Conferences				2Q				
Develop Prototype OS and tools				2Q-4Q				
Develop PDOS test suites				3Q-4Q	1Q			
Develop Signal Processing benchmark				4Q	1Q-2Q			
Conduct workshops				4Q	1Q			
Demonstrate PDOS					2Q			
Capture PDOS performance metrics					2Q			
Work with industry to productize PDOS					2Q-4Q			
Delivery to CPSA (NAWC/ Pax River)					4Q			

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Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 10 of 12)

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: **FEBRUARY 2004**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**	PROGRAM ELEMENT NUMBER AND NAME 0604507N / Enhanced Modular Signal Processor (EMSP)	PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor

Fiscal Year **Legacy Host Computer Replacement**	2002				2003				2004				2005				2006				2007				2008				2009			
	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

AN/UYS-1 Investigate Legacy Computer Replacement

AN/UYS-2/2A Investigate Legacy Computer Replacement

AN/UYS-1 COTS Software Development

AN/UYS-2/2A COTS Software Development

Test & Evaluation Milestones

AN/UYS-1 Validation Testing

AN/UYS-2/2A Validation Test

Production Milestones

AN/UYS-1 Contract for Delivery of Replacement host

AN/UYS-2/2A Contract for Delivery of Replacement host

Deliveries

AN/UYS-1 (NAWC)

AN/UYS-2/2A (NAWC)

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Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 11 of 12)

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **FEBRUARY 2004**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-05**		PROGRAM ELEMENT 0604507N / Enhanced Modular Signal Processor (EMSP)			PROJECT NUMBER AND NAME 1440 / Enhanced Modular Signal Processor			
Schedule Profile		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Investigate Legacy Computer Replacement - AN/UYS-1			1Q-2Q					
Contract for delivery of replacement host computer			2Q-4Q					
Develop software for COTS components			3Q-4Q	1Q-2Q				
Validation/Regression testing				2Q-3Q				
Delivery to CPSA (NAWC/Pax River)				4Q				
Investigate Legacy Computer Replacement - AN/UYS-2/2A				3Q-4Q				
Contract for delivery of replacement host computer				4Q	1Q-2Q			
Develop software for COTS components					2Q-3Q			
Validation/Regression testing					3Q-4Q			
Delivery to CPSA (NAWC/Pax River)					4Q			

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