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EXHIBIT R-2, FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N
 PROGRAM ELEMENT TITLE: Battle Group Passive Horizon Extension System

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & Title	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Program
X2134 SHIPBOARD IW EXPLOIT	850	824	710	723	736	752	770	Cont.	Cont.
X2135 CHBDL-ST	2,008	957	1,522	1,552	1,586	1,621	1,656	Cont.	Cont.
Total	2,858	1,781	2,232	2,275	2,322	2,373	2,426	Cont.	Cont.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Battle Group Passive Horizon Extension System - Surface Terminal (BGPHEs-ST) extends the Battle Group's line-of-sight radio horizon by using remote receivers in an airborne sensor payload, and sends this information via the Common High Bandwidth Data Link - Surface Terminal (CHBDL-ST) to the surface ships.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

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EXHIBIT R-2a, FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Battle Group Passive Horizon Extension System PROJECT TITLE: Shipboard IW Exploit

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & Title	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Program
X2134 SHIPBOARD IW EXPLOIT	850	824	710	723	736	752	770	Cont.	Cont.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Battle Group Passive Horizon Extension System Surface Terminal (BGPHEs-ST) extends the Battle Group's line-of-sight radio horizon via the Common High Bandwidth Data Link Shipboard Terminal (CHBDL-ST). BGPHEs-ST will be located in LHD, LHA, CV/CVN, LCC, and AGF Ships Signal Exploitation Space (SSES). The BGPHEs-ST 5-position, 6-rack cryptologic control, analysis and reporting center uses Navy-standard DTC/TAC-N series workstations and integral local intercept receivers. The design downsizes and corrects deficiencies from the 14-rack AN/SLQ-50 (XN-1) model tested on USS EISENHOWER (CVN-69) during FY87 (factory verification completion in fall 1989). Development will proceed in two stages, first reducing risk by demonstrating operation with the ship's local receivers (the Ship's Signals Exploitation Equipment (SSEE) Upgrade)), then (timed to meet CHBDL-ST development) adding control and use of the remote airborne payload (RS-6BN).

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$405) Continued development effort to access upgrade USAF U-2S PME, including special signals.
- (U) (\$ 290) Initiated and complete development design engineering of BGPHEs-ST on the LCC/AGF class.
- (U) (\$ 120) Initiated development effort to rehost software to TAC-(N+1) computer and definition of software enhancements to host ship's C⁴I system.

UNCLASSIFIED

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PROGRAM ELEMENT TITLE: Battle Group Passive Horizon Extension System PROJECT TITLE: Shipboard IW Exploit

Sub- • (U) (\$35) Continued P³I development effort to access EP-3E Joint SIGINT Avionics Family (JSAF) Low Band System (LBSS).

2. (U) FY 2000 PLAN:

- (U) (\$483) Complete development effort to allow interoperability with USAF upgrade PME.
- (U) (\$171) Continue development effort to rehost software and be IT-21 compatible (formerly TAC-N1 development).
- (U) (\$170) Complete P3I development efforts to access EP-3E Joint SIGINT Avionics Family (JSAF) Low Band Sub-System (LBSS).

3. (U) FY 2001 PLAN:

- (U) (\$548) Integrate new GCCS-M functionality into BGPHEs-ST baseline.
- (U) (\$162) Improve EP3 (air platform) interoperability.

B. (U) PROGRAM CHANGE SUMMARY EXPLANATION:

(U) Funding:

FY 1999: -\$919K for Below Threshold Reprogramming, -\$46K for FY99 SBIR/STTR Transfer, -\$11K for inflation savings.

FY 2000: -\$5K for miscellaneous adjustments.

FY 2001: -\$8K for miscellaneous reductions.

(U) Technical: Not Applicable.

UNCLASSIFIED

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PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Battle Group Passive Horizon Extension System PROJECT TITLE: Shipboard IW Exploit

C. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete	Total Program
OPN Line 2360	0	51,156	61,688	62,978	64,977	104,786	102,655	Cont.	Cont.
OPN Line 2434	55,176	36,959	0	0	0	0	0	Cont.	Cont.
O&M,N 4B7N	1,517	1,393	1,470	1,346	1,514	1,265	1,293	Cont.	Cont.

(U) RELATED RDT&E: PE 0305885G, Project 05500, BGPHEs-ST.

UNCLASSIFIED

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DATE: FEB 2000

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2134

PROGRAM ELEMENT TITLE: Battle Group Passive Horizon Extension System PROJECT TITLE: Shipboard IW Exploit

D. (U) ACQUISITIONS STRATEGY:

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>To Complete</u>
Program Milestones				
Engineering Milestones	-P ³ I Development	-P ³ I Development	-P ³ I Development	-P ³ I Development
T&E Milestones	-Interoperability Testing	-JSAF Interoperability Testing -T&E TAC 4 -T&E SIGINT	-Interoperability Testing	-Advanced Sensor Testing
Contract Milestones				

UNCLASSIFIED

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BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N
 PROGRAM ELEMENT TITLE: Battle Group Passive Horizon Extension System

DATE: FEB 2000
 PROJECT NUMBER: X2135
 PROJECT TITLE: CHBDL-ST

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & Title	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Program
X2135 CHBDL-ST	2,008	957	1,522	1,552	1,586	1,621	1,656	Cont.	Cont.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Common High Bandwidth Data Link-Ship Terminal (CHBDL-ST) equipment will provide a common high bandwidth data link shipboard terminal for the receipt of signal, imagery, second counter-intelligence data from remote airborne sensors and the transmission of link and sensor control data to airborne platforms. Signal intelligence data is received from the Battle Group Passive Horizon Extension System (BGPHEs) Airborne Component (AC) and delivered to the BGPHEs Shipboard Terminal. Imagery intelligence data is received from various tactical airborne reconnaissance systems and delivered to the Joint Service Imagery Processing System - Navy (JSIPS-N). Acoustic intelligence data is received from various tactical airborne reconnaissance systems and delivered to the Aircraft Carrier Tactical Support Center.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$ 91) Completed development of dual simultaneous link capability.
- (U) (\$306) Initiated development efforts for interoperability with other emerging sensor systems.
- (U) (\$325) Continued development efforts for ship-to-ship data connectivity.
- (U) (\$451) Initiated multi-queing capability development.

UNCLASSIFIED

EXHIBIT R-2a, FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2135

PROGRAM ELEMENT TITLE: Battle Group Passive Horizon Extension System

PROJECT TITLE: CHBDL-ST

- (U) (\$455) Continued development of wideband encryption (KG-135) enhancements.
- (U) (\$380) Continued Test and Evaluation with other systems such as Joint Services Imagery Processing System (JSIPS) ATARS, GUARDRAIL, U-2 AIP, and HAE UAVs.

3. (U) FY 2000 PLAN:

- (U) (\$140) Continue development efforts for interoperability with other emerging sensor systems.
- (U) (\$377) Continue development efforts for ship-to-ship data connectivity.
- (U) (\$100) Continue multi-queing capability development.
- (U) (\$100) Complete development of wideband encryption (KG-135)enhancements.
- (U) (\$240) Continue Test and Evaluation with other systems such as Joint Services Imagery Processing System (JSIPS) ATARS, GUARDRAIL, U-2 AIP, and HAE UAVs.

3. (U) FY 2001 PLAN:

- (U) (\$280) Continue development efforts for interoperability with other emerging sensor systems
- (U) (\$190) Continue development efforts for ship-to-ship data connectivity.
- (U) (\$712) Continue multi-queing capability development.
- (U) (\$340) Continue Test and Evaluation with other systems such as Joint Services Imagery Processing System (JSIPS) ATARS, GUARDRAIL, U-2 AIP, and HAE UAVs.

UNCLASSIFIED

EXHIBIT R-2a, FY 2001 RDT&E,N PROJECT JUSTIFICATION

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N
PROGRAM ELEMENT TITLE: Battle Group Passive Horizon Extension System

DATE: FEB 2000
PROJECT NUMBER: X2135
PROJECT TITLE: CHBDL-ST

B. (U) PROGRAM CHANGE SUMMARY EXPLANATION:

(U) Funding:

FY 1999: -\$89K Below Threshold Reprogramming, -\$74K for SBIR/STTR transfer and -\$15K inflation adjustment.

FY 2000: -\$5K for miscellaneous reductions.

FY 2001: -\$16K for miscellaneous adjustments.

(U) Schedule: (1) The AIP is a joint effort with the Air Force and the testing schedule has slipped to FY00.
(2) Guardrail/UAV/U-2 Interoperability tests were changed to ATARS/UAV Interoperability Tests to more accurately describes the test. This is a joint effort with NAVAIR and the testing schedule has slipped to FY00.

(U) Technical: None

UNCLASSIFIED

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PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2135

PROGRAM ELEMENT TITLE: Battle Group Passive Horizon Extension System

PROJECT TITLE: CHBDL-ST

C. (U) OTHER PROGRAM FUNDING SUMMARY: (Dollars in thousands)

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Program
		Estimate	Estimate	Estimate	Estimate	Estimate	Estimate		
OPN Line 2434	55,176	36,959	61,688	62,978	64,977	104,786	102,655	Cont.	Cont.
O&M,N	824	1,022	1,134	1,156	1,198	2,823	2,911	Cont.	Cont.

(U) RELATED RDT&E: PE 0603261N Project A2174 Joint Service Imagery Processing Systems - Navy (JSIPS-N).

D. (U) ACQUISITION STRATEGY:

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>To Complete</u>
Program Milestones				
Engineering Milestones		-Complete Wideband Encryption Interface Development		-Complete Multi Queing Capability
		-Complete Dual Simultaneous Link Development		
T&E Milestones	-Guardrail Interoperability Tests		-ATARS/UAV Interoperability Tests	-Ship to Ship Interoperability Tests
			-AIP Interoperability Tests	-UAV Interoperability Tests

UNCLASSIFIED

EXHIBIT R-3, FY 2001 RDT&E,N PROJECT COST ANALYSIS

DATE: FEB 2000

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2135

Exhibit R-3 Cost Analysis (page 1)										Date: FEB 2000		
APPROPRIATION: RDT&E, N BUDGET ACTIVITY : 5			PROGRAM ELEMENT: 0604721N							CHBDL-ST X2135		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYS Cost	FY99 Cost	FY99 Award Date	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPIF	Loral - Salt Lake, UT	20,502	0		0				20,502	20,502	20,502
Hardware Development/Integration	Various	Various	2,768	1,628	Mar 99	717	Mar 00	1,182		Cont.	Cont.	Cont.
Subtotal Product Development			23,270	1,628		717		1,182		Cont.	Cont.	Cont.
Remarks:												
Integrated Logistics Support	Various	Various	254	0		0		0				
Subtotal Support			254	0		0						
Remarks:												
Exhibit R-3 Cost Analysis (page 2)										Date: FEB 2000		
APPROPRIATION: RDT&E, N BUDGET ACTIVITY : 5			PROGRAM ELEMENT: 0604721N							CHBDL-ST X2135		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYS Cost	FY99 Cost	FY99 Award Date	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Target Value of Contract

UNCLASSIFIED

EXHIBIT R-3, FY 2001 RDT&E,N PROJECT COST ANALYSIS

DATE: FEB 2000

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604721N

PROJECT NUMBER: X2135

Developmental /Operational T&E	Various	Various	895	380	Jan 99	240	Jan 00	340		Cont.	Cont.	Cont.
Subtotal T&E			895	380		240		340		Cont.	Cont.	Cont.
Remarks												
Project Management	Various	Various	465	0		0		0				
Subtotal Management			465	0		0		0				
Remarks												
Total Cost			24,884	2,008		957		1,522		Cont.	Cont.	Cont.