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EXHIBIT R-2, FY 2003/2004 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT)      DATE: February 2002

BUDGET ACTIVITY:    5                      PROGRAM ELEMENT:                      0604218N  
PROGRAM ELEMENT TITLE:    Air/Ocean Equipment Engineering

(U) COST:    (Dollars in Thousands)

PROJECT NUMBER & Title	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
X2345    Fleet METOC Equipment									
	4,325	4,743	4,182	4,236	4,201	4,180	4,296	CONT.	CONT.
X2346    METOC Sensor Engineering									
	1,464	1,547	1,543	1,600	1,627	1,661	1,699	CONT.	CONT.
TOTAL	5,789	6,290	5,725	5,836	5,828	5,841	5,995	CONT.	CONT.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Air/Ocean Equipment Engineering (AOEE) Program Element provides for the engineering and manufacturing development of onboard and remote sensors, communication interfaces, and processing and display devices. This equipment is specifically designed to measure, ingest, store, process, distribute and display meteorological and oceanographic (METOC) parameters essential to the optimum employment of Naval warfare systems. AOEE also develops increased capabilities for shipboard and shore based tactical systems. In addition, AOEE provides for the engineering development of specialized equipment and measurement techniques to obtain METOC data in denied and remote areas.

(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.

R-1 Shopping List - Item No 99 (1) of 99 (12)

Exhibit R-2, RDT&E,N Budget Item Justification

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EXHIBIT R-2, FY 2003/2004 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT) DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2345  
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: Fleet METOC Equipment

(U) COST (Dollars in thousands)

PROJECT NUMBER & Title	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
X2345 Fleet METOC Equipment	4,325	4,743	4,182	4,236	4,201	4,180	4,296	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides for the engineering and manufacturing development of sensors, communication interfaces, and processing and display equipment. This equipment is designed to measure, ingest, store, process, distribute and display meteorological and oceanographic (METOC) parameters and derived products. Major emphasis areas include the Tactical Environmental Support System (TESS), and the associated Navy Integrated Tactical Environmental Subsystem (NITES), the Marine Corps Meteorological Mobile Facility (METMF), the AN/SMQ-11 satellite receiver/recorder, weather radars, and the development of new sensors such as active and passive atmospheric profilers for incorporation into the replacement system (MORIAH) for the Shipboard Meteorological and Oceanographic Observing System (SMOOS). This project also exploits new GOTS/COTS technologies and web enablement for the Navy's computer-based tactical shipboard and shore capability used to predict and assess the impact of the operating environment on the performance of platforms, weapons and sensor systems.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$1,278) Completed engineering development of a data exchange interface. Began engineering development of an object oriented database management system employing artificial intelligence technology.
- (U) (\$1,260) Continued engineering development of fleet systems.
- (U) (\$715) Continued Lead Laboratory tasks in support of software development, assisting model developers and providing technical assistance to other activities.
- (U) (\$1,072) Continued exploitation of off-the shelf prototype hardware and other emerging technologies.

R-1 Shopping List - Item No 99 (2) of 99 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2345)

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EXHIBIT R-2, FY 2003/2004 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT) DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2345  
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: Fleet METOC Equipment

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

	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY2007 Estimate	To Complete	Total Program
(U) OPN line 4226	24,328	28,437	26,474	27,474	26,694	28,679	30,041	CONT.	CONT.
(U) RELATED RDT&E: PE 0603207N, Air/Ocean Tactical Applications.									

D. (U) ACQUISITION STRATEGY: Not applicable.

R-1 Shopping List - Item No 99 (5) of 99 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2345)

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Exhibit R-3 Proejct Cost Analysis (page 1)							Date: February 02					
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N/BA5			PROGRAM ELEMENT: o604218N				PROJECT NAME AND NUMBER: X2345 FLEET METOC EQUIP					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 +PY Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development												
	WX	NRL	3,122	1,183	N/A	832	N/A	1,215	N/A	CONT	CONT	CONT
	WX	SSCs	1,200	470	N/A	400	N/A	775	N/A	CONT	CONT	CONT
	CP	RAYTHEON	400	225	N/A	200	N/A	235	N/A	CONT	CONT	CONT
	N/A	MISC	2,473	2,237	N/A	3,176	N/A	1,739	N/A	CONT	CONT	CONT
Subtotal Product Development			7,195	4,115	N/A	4,608	N/A	3,964	N/A	CONT	CONT	CONT
Remarks:												
Support	CP	SSA	775	150	N/A	75	N/A	156	N/A	CONT	CONT	CONT
Subtotal Support			775	150	N/A	75	N/A	156	N/A	CONT	CONT	CONT
Remarks												

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Exhibit R-3 Project Cost Analysis (page 2)										Date: February 02		
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N/BA5				PROGRAM ELEMENT: 0604218N			PROJECT NAME AND NUMBER: X2345 FLEET METOC EQUIP					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 +PY Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
T&E	PD	OPTEVFOR	120	60	N/A	60	N/A	62	N/A			
Subtotal T&E			120	60	N/A	60	N/A	62	N/A			
Remarks												
Subtotal Management												
Remarks												
Total Cost			8,090	4,325	N/A	4,743	N/A	4,182	N/A	CONT	CONT	CONT
Remarks												

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EXHIBIT R-2, FY 2003/2004 RDT&E,N BUDGET ITEM JUSTIFICATION (PROJECT) DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604218N PROJECT NUMBER: X2346  
PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering PROJECT TITLE: METOC Sensor Engineering

(U) COST (Dollars in Thousands)

PROJECT NUMBER & Title	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	To Complete	Total Program
X2346 METOC Sensor Engineering	1,464	1,547	1,543	1,600	1,627	1,661	1,699	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides for the engineering and manufacturing development of specialized, high resolution instrumentation systems and measurement techniques for obtaining near real-time in-situ meteorological and oceanographic (METOC) data in denied or remote areas. The objectives are to ruggedize and package systems, sensors and instruments to survive the harsh littoral environment and also to meet demanding requirements for timeliness and accuracy. Engineering is performed within this project to ensure that air and safety certification for deployment from fleet aircraft or ships is met and that the proper data formats are employed for integration into existing or planned communications and displays. The end products are sensors and systems that will provide the tactical commander with near real-time, in-situ METOC data for operational use. In addition, this difficult to obtain data will provide important inputs for predictive models in areas of potential interest.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2001 ACCOMPLISHMENTS:

- (U) (\$539) Began engineering development of METOC sensors for ultra-light Unmanned Airborne Vehicles.
- (U) (\$500) Continued development of microsensor based miniature weather stations/buoys based on Defense Advanced Research Projects Agency/Office of Naval Research developed Micro Electro Mechanical Sensor (MEMS).
- (U) (\$425) Continued development of MEASURE.

R-1 Shopping List - Item No 99 (8) of 99 (12)

Exhibit R-2a, RDT&E,N Project Justification (X2346)

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Exhibit R-3 Project Cost Analysis (page 1)								Date: February 02				
APPROPRIATION/BUDGET ACTIVITY: RDT&E, N/BA5			PROGRAM ELEMENT: o604218N					PROJECT NAME AND NUMBER: X2346 METOC SENSOR ENGINEERING				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 +PY Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Product Development	WX	NRL	1,150	51	N/A	60	N/A	53	N/A	CONT	CONT	
	N/A	MISC	2,138	1,413	N/A	1,487	N/A	1,490	N/A	CONT	CONT	
Subtotal Product Development			3,288	1,464	N/A	1,547	N/A	1,543	N/A	CONT	CONT	
Remarks:												
Subtotal Support												
Remarks												

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Exhibit R-3 Project Cost Analysis (page 2)								Date: February 02				
APPROPRIATION/BUDGET ACTIVITY: RDT&E, N/BA5				PROGRAM ELEMENT: 0604218N				PROJECT NAME AND NUMBER: X2346 METOC SENSOR ENGINEERING				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 +PY Cost	FY01 Cost	FY01 Award Date	FY02 Cost	FY02 Award Date	FY03 Cost	FY03 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal T&E												
Remarks												
Subtotal Management												
Remarks												
Total Cost			3,288	1,464	N/A	1,547	N/A	1,543	N/A	CONT	CONT	
Remarks												