

# UNCLASSIFIED

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

DATE: February 2000

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604218N

PROGRAM ELEMENT TITLE: Air/Ocean Equipment Engineering

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & Title	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete	Total Program
X2345 Fleet METOC Equipment	3,982	4,436	4,514	4,704	4,862	4,981	5,106	CONT.	CONT.
X2346 METOC Sensor Engineering	1,772	1,625	1,537	1,530	1,555	1,589	1,627	CONT.	CONT.
TOTAL	5,754	6,061	6,051	6,234	6,417	6,570	6,733	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 87(1) of 87 (11)

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

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

DATE: February 2000

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 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete	Total Program
X2345 Fleet METOC Equipment									

	3,982	4,436	4,514	4,704	4,862	4,981	5,106	CONT.	CONT.
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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 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 1999 ACCOMPLISHMENTS:

- (U) (\$1,119) Began engineering development of a data exchange interface.
- (U) (\$1,180) Continued engineering development of fleet systems/applications.
- (U) (\$719) Continued Lead Laboratory tasks in support of software development, assisting model developers and providing technical assistance to other activities.
- (U) (\$714) Completed TESS/NITES interface with the Tactical Environmental Data Server (TEDS).

R-1 Shopping List - Item No 87 (2) of 87 (11)

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

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

DATE: February 2000

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

- (U) (\$250) Continued development of advanced database and visualization tools.
2. (U) FY 2000 PLAN:
- (U) (\$1,415) Continue engineering development of a data exchange interface.
  - (U) (\$1,250) Continue engineering development of fleet systems.
  - (U) (\$725) Continue Lead Laboratory tasks in support of software development, assisting model developers and providing technical assistance to other activities.
  - (U) (\$325) Complete development of advanced database and visualization tools.
  - (U) (\$721) Begin exploitation of off-the shelf prototype hardware and other emerging technologies.
3. (U) FY 2001 PLAN:
- (U) (\$1,377) Complete engineering development of a data exchange interface.
  - (U) (\$1,350) Continue engineering development of fleet systems.
  - (U) (\$715) Continue Lead Laboratory tasks of software integration, assisting model developers and providing technical assistance to other activities.
  - (U) (\$1,072) Continue exploitation of off-the-shelf prototype hardware and other emerging technologies.

R-1 Shopping List - Item No 87 (3) of 87 (11)

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

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

DATE: February 2000

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

B. (U) PROGRAM CHANGE SUMMARY:

(U) Funding:

FY 1999 Small Business Innovation Research (-74), miscellaneous Departmental adjustments (-61).

FY 2000 Congressional reductions (-25), Portion of extramural program is reserved for Small Business Innovation Research assessment in accordance with 15 USC 638 (64).

FY 2001 Miscellaneous Departmental adjustments(-80).

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

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

	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY2005 Estimate	To Complete	Total Program
(U) OPN line 4226	27,915	31,328	30,860	31,088	31,216	32,480	33,220	CONT.	CONT.

(U) RELATED RDT&E: PE 0603207N, Air/Ocean Tactical Applications.

D. (U) ACQUISITION STRATEGY: Not applicable.

R-1 Shopping List - Item No 87 (4) of 87 (11)

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

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Exhibit R-3 Proejct Cost Analysis (page 1)							Date: FEB 00					
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 FY98 + PY 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
Product Development												
	WX	NRL	0	1,700	N/A	1,750	N/A	1,780	N/A	CONT	CONT	CONT
	WX	SSC SD	0	600	N/A	600	N/A	610	N/A	CONT	CONT	CONT
	CP	RAYTHEON	0	200	N/A	200	N/A	205	N/A	CONT	CONT	CONT
	N/A	MISC	0	1,047	N/A	1,426	N/A	1,449	N/A	CONT	CONT	CONT
Subtotal Product Development			0	3,547	N/A	3,976	N/A	4,044	N/A	CONT	CONT	CONT
Remarks:												
Support												
	CP	SSA	0	375	N/A	400	N/A	410	N/A	CONT	CONT	CONT
Subtotal Support			0	375	N/A	400	N/A	410	N/A	CONT	CONT	CONT
Remarks												

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Exhibit R-3 Project Cost Analysis (page 2)										Date: FEB 00		
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 FY98 + PY 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
T&E	PD	OPTEVFOR	0	60	N/A	60	N/A	60	N/A			
Subtotal T&E			0	60	N/A	60	N/A	60	N/A			
Remarks												
Subtotal Management												
Remarks												
Total Cost			0	3,982	N/A	4,436	N/A	4,514	N/A	CONT	CONT	CONT
Remarks												

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

DATE: February 2000

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 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete	Total Program
X2346 METOC Sensor Engineering	1,772	1,625	1,537	1,530	1,555	1,589	1,627	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 1999 ACCOMPLISHMENTS:

- (U) (\$373) Completed AN/WSQ-6 buoy development/transition to NAVOCEANO.
- (U) (\$707) Continued development transition of tactical dropsonde capability to NAVAIR PMA-264 for P-3/S-3 community, PMA-299 for SH-60R transition and acquisition sponsorship by PMA-222.
- (U) (\$294) Initiated development of microsensor based miniature weather stations/buoys based on Defense Advanced Research Projects Agency/Office of Naval Research developed Micro Electro Mechanical (MEMS) technology.

R-1 Shopping List - Item No 87 (7) of 87 (11)

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

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

DATE: February 2000

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

- (U) (\$398) Begin engineering development of METOC Air, Surface, Undersea Reconnaissance Equipment (MEASURE).

2. (U) FY 2000 PLAN:

- (U) (\$730) Complete development transition of tactical dropsonde capability to NAVAIR PMA-264 for P-3/S-3 community, PMA-299 for SH-60R transition and acquisition sponsorship by PMA-222.
- (U) (\$418) Continue development of microsensor based miniature weather stations/buoys based on Defense Advanced Research Projects Agency/Office of Naval Research developed Micro Electro Mechanical (MEMS).
- (U) (\$477) Continue development of MEASURE.

3. (U) FY 2001 PLAN:

- (U) (\$612) Begin engineering development of METOC sensors for ultra-light Unmanned Airborne Vehicles.
- (U) (\$500) Continue development of microsensor based miniature weather stations/buoys based on Defense Advanced Research Projects Agency/Office of Naval Research developed Micro Electro Mechanical (MEMS).
- (U) (\$425) Continue development of MEASURE.

R-1 Shopping List - Item No 87 (8) of 87 (11)

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

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

DATE: February 2000

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

B. (U) PROGRAM CHANGE SUMMARY:

(U) Funding:

FY 1999 Small Business Innovation Research assessment (-32), congressional adjustments associated with revised economic assumptions (-4), miscellaneous Departmental adjustments (-45)

FY 2000 Congressional reduction (-9) Portion of extramural program is reserved for Small Business Innovation Research assessment in accordance with 15 USC 638 (30).

FY 2001 Miscellaneous Departmental adjustments (-25).

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY:

(U) OTHER RDT&E: PE 0602435N (Ocean and Atmospheric Technology)  
PE 0603207N (Air/Ocean Tactical Applications)

D. (U) ACQUISITION STRATEGY: Not Applicable.

R-1 Shopping List - Item No 87 (9) of 87 (11)

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

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Exhibit R-3 Project Cost Analysis (page 1)								Date: FEB 00				
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 FY98 + PY 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
Product Development	WX	NRL	0	550	N/A	600	N/A	610	N/A	CONT	CONT	
	N/A	MISC	0	1,222	N/A	1,025	N/A	927	N/A	CONT	CONT	
Subtotal Product Development			0	1,772	N/A	1,625	N/A	1,537	N/A	CONT	CONT	
Remarks:												
Subtotal Support												
Remarks												

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Exhibit R-3 Project Cost Analysis (page 2)								Date: FEB 00				
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 FY98 + PY 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
Subtotal T&E												
Remarks												
Subtotal Management												
Remarks												
Total Cost			0	1,772	N/A	1,625	N/A	1,537	N/A	CONT	CONT	
Remarks												