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Exhibit R-2, FY 2003 RDT&E,N Budget Item Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

(U) COST: (Dollars in Thousands)

Table with columns: 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. Rows include Advanced Deployable System X1300, ADS - Accelerate Cable Burial Capability X9085, ADS - Fiber Optic Tech X9086, and Total.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Advanced Deployable System (ADS) is an undersea surveillance system composed of distributed sensors that can be rapidly and unobtrusively deployed in regional contingency areas for use against enemy submarines and in support of littoral warfare.

Advanced Deployable Systems (ADS) - Accelerate Cable Burial Capability: Enhance ADS cable survivability and provide a trunk extension installation capability

Advanced Deployable Systems (ADS) - Fiber Optic Tech: Reduce risk in development of remotely powered all optical array technology for application to ADS program.

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

Project Number: X1300
Project Title: Advanced Deployable System (ADS)

(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
Advanced Deployable System X1300	30,089	34,404	35,861	23,644	58,535	64,224	89,861	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Advanced Deployable System (ADS) is an undersea surveillance system composed of distributed sensors that can be rapidly and unobtrusively deployed in regional contingency areas for use against enemy submarines and in support of littoral warfare. It is designed to detect and track modern diesel electric and nuclear submarines, as well as provide the capability for tracking surface ships and detecting sea minelaying. ADS possesses great flexibility with respect to laydown options, ranging from single barrier to large area fields. It has built upon test experience with distributed sensor fields in shallow noisy water, and used collected data for processing verification. ADS utilizes conventional acoustic sensors and incorporates processing technologies and advanced sensors and technologies from other related programs.

1. (U) FY 2001 Accomplishments:

- (U) (\$20,999) Continued engineering and manufacturing development. Continued manufacturing technology /cost reduction engineering analysis and process design for array assembly and integration. Within engineering and manufacturing development began detailed design of the Engineering Development Model (EDM), component testing, and the detailed design and testing of deployment approach for the Platform Bravo Underwater System arrays. Conducted Platform F deployment demonstration of single array system. Conducted cable survivability testing. Refined logistic supports and developed training.

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Project Number: X1300
Project Title: Advanced
Deployable System (ADS)

- (U) (\$8,392) Continued to conduct system engineering analysis of array design and array deployment options for P³I program. This included efforts to begin Processing and Analysis Segment (PAS)/C4I development of a small field OPEVAL system and the software development. Also included engineering development of the PB method A barrier deployment and relay van concept. The PAS development will primarily occur through the Acoustic Rapid COTS Insertion (ARCI) I program and the C4I development is a coordinated effort with PD-15 and PD-17. Effort also included beginning the software development of the Mission Planning workstation and preplanning for OPEVAL/TECHEVAL area. Initiated development of Logistics Management Information. Continued hardware and software development for processing and algorithm development for PAS. Accelerated Large Field processing development and conducted follow-on automation technology insertion.
- (U) (\$698) Conducted integrated baseline review for EDM contract effort and award EDM contract. Managed ADS through monitoring of contractor and government technical, schedule, and cost performance.

2. (U) FY 2002 PLAN:

- (U) (\$6,533) Development of the specification and layout for the communications relay van and software development in four functional areas Mission Planning, Array Element Localization, relay van monitoring, and Acoustic Rapid COTS Insertion (ARCI) Phase 2 for ADS. Support for system engineering. Continue cable testing for enhanced survivability. Develop Mission Planning Workstation for automated determination of ADS array placement to meet mission requirements.
- (U)(\$10,149) Complete preliminary designs of all four of the ISS Hardware Configuration Items (HWCI) and the Software CSCI(Computer Software Configuration Item). Complete detailed designs of three of the four HWCI, including the Control and Monitor HWCI, the Wet End Capsule HWCI and the Inboard Mechanical Equipment HWCI. Complete the Software CSCI detailed design. For each detailed design completed, the associated Detailed Design Reviews (DDR) will also be conducted and the drawings will be released.
- (U) (\$893) Development of the system level integrated Verification Plan and initiation of the development of system level test documentation to include the TEMP, Target Threat Verification Plan, and Environmental Documentation. Support to the System Engineering Management Team (SEMT) and ADS Systems Engineering Team (ASET) in the definition of developmental testing objectives for system level testing.

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Exhibit R-2a, RDT&E Project Justification

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Deployable System (ADS)

- (U) (\$11,224) Array cable pack design, array internode splice, array dispenser, T-shell, develop winding technology, lithium battery development, node and sensor CCA (Circuit Card Assembly) design, and array assembly manufacturing. Conduct design verification testing of deployment methods and wet end hardware.
 - (U) (\$5,605) System Engineering Project Management support for the ADS project office; Manage ADS through monitoring of contractor and government technical, schedule, and cost performance. Develop Integrated Logistics Support (ILS) plans and infrastructure. Complete revised APBA based on ORD modification.
3. (U) FY 2003 PLAN:
- (U) (\$7,175) Integration and delivery of the communications relay van, test and delivery of wet end lay down capability for the Mission Planner, test and delivery of the ARCI Phase 3 for ADS (software build that will be used for System Integration Test (SIT), and test and delivery of the Array Element localization software. Support for system engineering.
 - (U) (\$10,581) Complete Trunk Capsule HWCI detailed design. In addition, all drawings will be released and hardware purchase and build will be completed. Design Verification Tests will be conducted. The System Verification Review and Functional Configuration Audit will be completed. Prepare for upcoming major system tests.
 - (U) (\$2,257) Completion of required system level test documentation (TEMP, TTVP, EA). Monitoring of the developmental testing conducted by the IPTs and the management of the Integrated Verification Plan. Planning for the conduct of system level testing in FY04. Management of external relationships to DOT&E and COTF with respect to testing.
 - (U) (\$9,526) Array build sensors and array for Dual Array Test (DAT) and System Integration Test (SIT), design and build of shells, assembly of shells for deployment, design and build of Shore Line Transition Bottle (SLTB), design of SLC extension, pack array dispensers, and R/M/S design influence.
 - (U) (\$6,322) Continue System Engineering Project Management support for the ADS project office; Manage ADS through monitoring of contractor and government technical, schedule, and cost performance. Continue Development of ILS plans and infrastructure.

R-1 Shopping List - Item No Page 141-4 of 141-15

Exhibit R-2a, RDT&E Project Justification

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BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
 PROGRAM ELEMENT TITLE: Distributed Surveillance System

Project Number: X1300
 Project Title: Advanced Deployable System (ADS)

B. PROGRAM CHANGE SUMMARY: FY 2001: Congressional Add for Advance Deployable System Acceleration (+\$10,500K), Section 8086: 0.7% Pro-Rata Reduction (-\$218K), Government-Wide Rescission PL 106-554 (-\$68K), SBIR Assessment (-\$204K), Federal Technology (-\$22K), ASN (RDA) BTR for Chief Technology Office (CTO) Synthetic Aperture Sonar (-\$405K), Miscellaneous Navy Adjustments (-\$408K).

PROGRAM CHANGE SUMMARY: FY 2002: Section 8123: Management Reform Initiative (-\$307K).

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

	FY 2001 ACTUALS	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	FY 2006 ESTIMATE	FY 2007 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
OPN# 222100 (BLI)	0	0	0	0	43,615	69,151	75,195	CONT.	CONT.

(U) RELATED RDT&E:

PE	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	TOTAL
X9102	0	6,800	0	0	0	0	0	0	6,800

Funds first phase of the Automated IUSS Mission Planning System. This effort builds on the work begun in the ADS program (PE 0604784N) to automate array lay down and cable routing plans and allows the mission planner the capability to rapidly update the plan. Functional requirements for Fixed Surveillance Systems (FSS), Advanced Deployable System (ADS) and Surveillance Towed Array Sensor (SURTASS) will be combined and prioritized with fleet input. Software will be developed as GCCS-M segments that are at least level 6 DII-COE compliant. Included is approximately 800K to collect environmental and physical data for an area of high fleet tactical interest for mission planner demonstration.

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BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

Project Number: X1300
Project Title: Advanced Deployable System (ADS)

D. (U) ACQUISTION STRATEGY:

- 1. Sole source award of EDM cost plus award fee contract to the PDNRR contractor.
- 2. ADS will conduct a phased approach to meet fleet requirements.

- PHASE I PLATFORM BRAVO METHOD ALPHA
- PHASE II PLATFORM BRAVO METHOD BRAVO
- PHASE III OFFBOARD SENSOR
- PHASE IV ADVANCED DEPLOYABLE CAPSULE

E. (U) SCHEDULE PROFILE: PHASE I

	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Program Milestones			
Engineering Milestones	Technical Baseline Review System Design Review		Wet End Sys Validation Review
T&E Milestones		Shell Deployment/Drop Test	ISS In-Water Design Verification Test (DVT); Deployment Mechanism test, Dual Array Test, System Safety Test, Dockside Integration Test
Contract Milestones	EDM IBR Award EDM Contract		

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Exhibit R-3, FY 2003 RDT&E,N Project Cost Analysis

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N
PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT NUMBER: X1300
PROJECT TITLE: Advanced
Deployable System

A. (U) PROJECT COST BREAKDOWN: (\$ in thousands)

Project Cost Categories	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
a. Dry End System (DES)	6,923	6,533	7,175
b. Installation Subsystem (ISS)	3,641	10,149	10,581
c. Test & Evaluation (T&E)	409	893	2,257
d. Wet End System (WES)	15,399	11,224	9,526
e. Systems Engineering Project Management (SEPM)	3,717	5,605	6,322
Total	30,089	34,404	35,861

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Exhibit R-3, FY 2003 RDT&E,N Project Cost Analysis

DATE: February 2002

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604784N

PROJECT NUMBER: X1300

PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT TITLE: Advanced Deployable System

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 1)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5			PROGRAM ELEMENT: 0604784N									
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	FY03 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Prime Mission Product Development	C/CPAF	LMFS Manassas, VA	89,334								89,334	89,334
Prime Mission Product Development	C/CPAF	LMFS Manassas, VA		13,862	11/01	18,755	09/02	15,788	09/03	CONT.	CONT.	CONT.
Government Engineering Support	WX	SSC-San Diego San Diego, CA	33,040	5,313	06/01	5,102	06/02	6,152	06/03	CONT.	CONT.	
Engineering Supt Services	C/CPFF	AHA Rockville, MD	3,100	20	03/01						3,120	3,120
Engineering Supt Services	SS/CPFF	APL/JHU Laurel, MD	4,258	280	10/00	133	03/02	176	03/03	CONT.	CONT.	CONT.
Engineering Supt Services	SS/CPFF	ARL/UT Austin, TX	6,009	559	09/00	754	10/01	453	10/02	CONT.	CONT.	CONT.
Software Development	C/CPFF	Orincon San Diego, CA	11,420	4,114	08/01	1,000	09/02		10/02	CONT.	CONT.	CONT.
OTHER CONTRACTS			14,279	1,770		2,240		5,085		CONT.	CONT.	
OTHER ACTIVITIES			18,106	85		85		767		CONT.	CONT.	
Subtotal Product Development			179,546	26,003		28,069		28,421		CONT.	CONT.	CONT.
Remarks:												

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Exhibit R-3, FY 2003 RDT&E,N Project Cost Analysis

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BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604784N

PROJECT NUMBER: X1300

PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT TITLE: Advanced Deployable System

B.(U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 2)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0604784N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	FY03 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	AMRON San Diego, CA	1,887	876	01/01	0		0			2,763	
Government Engineering Support	WX	SSC-San Diego San Diego, CA	6,824	125	06/01	550	06/02	685	06/03	CONT.	CONT.	
		OTHER CONTRACTS	12,940	564		1,211		711		CONT.	CONT.	
		OTHER ACTIVITIES	820	623		2,827		2,471		CONT.	CONT.	
Subtotal Support			22,471	2,188		4,588		3,867		CONT.	CONT.	
Remarks:												

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PROJECT NUMBER: X1300

PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT TITLE: Advanced Deployable System

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 3)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0604784N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	FY03 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test and Evaluation		OTHER CONTRACTS	7,574	11		10		34		CONT.	CONT.	
Developmental and Operational Test and Evaluation	WX	SSC-San Diego San Diego, CA	10,738	156	06/01	315	06/02	608	06/03	CONT.	CONT.	
Developmental and Operational Test and Evaluation		OTHER ACTIVITIES	4,658							CONT.	CONT.	
Subtotal T&E			22,970	167		325		642		CONT.	CONT.	
Remarks:												

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Exhibit R-3, FY 2003 RDT&E,N Project Cost Analysis

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BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604784N

PROJECT NUMBER: X1300

PROGRAM ELEMENT TITLE: Distributed Surveillance System

PROJECT TITLE: Advanced Deployable System

B. (U) BUDGET ACQUISITION HISTORY AND PLANNING INFORMATION (\$ in thousands)

Exhibit R-3 Cost Analysis (Page 4)												
APPROPRIATION/BUDGET ACTIVITY: RDT&E,N / BA 5		PROGRAM ELEMENT: 0604784N										
Cost Categories	Contract Method & Type	Performing Activity & Location	Total FY00 & Prior Cost	FY01 Cost	Award Date	FY02 Cost	Award Date	FY03 Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	AMRON San Diego, CA	5,277								5,277	
Program Management Support		OTHER CONTRACTS	5,041	1,519		808		1,726		CONT.	CONT.	
Program Management Support		OTHER ACTIVITIES	1,941	212		614		1,205		CONT.	CONT.	
Subtotal Management			12,259	1,731		1,422		2,931		CONT.	CONT.	
Total Cost			237,246	30,089		34,404		35,861		CONT.	CONT.	
Remarks:												

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N PROJECT NUMBER: X9086
PROGRAM ELEMENT TITLE: Distributed Surveillance System PROJECT TITLE: ADS - Fiber Optic Tech

(U) COST (Dollars in thousands)

PROJECT

Table with 10 columns: NUMBER & TITLE, FY 2001 ACUTALS, FY 2002 ESTIMATE, FY 2003 ESTIMATE, FY 2004 ESTIMATE, FY 2005 ESTIMATE, FY 2006 ESTIMATE, FY 2007 ESTIMATE, TO COMPLETE, TOTAL PROGRAM. Row: X9086 ADS - Fiber Optic Tech. Row: TOTAL 0 3,965 0 0 0 0 0 0 0 3,965

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Reduce risk in development of remotely powered all optical array technology for application to ADS program.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

- 1. (U) FY 2001 Accomplishments: N/A
2. (U) FY 2002 PLANS: (\$3,965K) - Reduce risk in fiber optical technology and integrate fiber optic technology application to rapidly deployable surveillance systems.
3. (U) FY 2003 PLANS: N/A

B. (U) PROGRAM CHANGE SUMMARY:

FY 2002: Congressional Plus-Up (+\$4,000K), Section 8123: Management Reform Initiative (-\$35K)

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

Table with 10 columns: FY 2001 ESTIMATE, FY 2002 ESTIMATE, FY 2003 ESTIMATE, FY 2004 ESTIMATE, FY 2005 ESTIMATE, FY 2006 ESTIMATE, FY 2007 ESTIMATE, TO COMPLETE, TOTAL PROGRAM. Rows: OPN#2221 0 0 0 0 43,615 69,151 75,195 CONT. CONT.; OMN 0 0 0 0 8,821 9,259 8,963 CONT. CONT.

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DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N PROJECT NUMBER: X9086
PROGRAM ELEMENT TITLE: Distributed Surveillance System PROJECT TITLE: ADS - Fiber Optic Tech

(U) RELATED RDT&E:
(U) PE 0604784N X1300 Advanced Deployable System

D. (U) ACQUISITION STRATEGY:

	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>
Program Milestones			
Engineering Milestones		Wet end system validation review Q3	
T&E Milestone			In water design verification test (DVT) Q1
Contract Milestones			

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

DATE: February 2002

BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N PROJECT NUMBER: X9085
PROGRAM ELEMENT TITLE: Distributed Surveillance System PROJECT TITLE: ADS - Accelerate Cable Burial Capacity

(U) COST (Dollars in thousands)

Table with columns: PROJECT NUMBER & TITLE, FY 2001 ACUTALS, FY 2002 ESTIMATE, FY 2003 ESTIMATE, FY 2004 ESTIMATE, FY 2005 ESTIMATE, FY 2006 ESTIMATE, FY 2007 ESTIMATE, TO COMPLETE, TOTAL PROGRAM. Row: X9085 ADS - Accelerate Cable Burial Capability. Row: TOTAL (0, 3,965, 0, 0, 0, 0, 0, 0, 0, 3,965)

A (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Enhance ADS cable survivability and provide a trunk extension installation capability

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

- 4. (U) FY 2001 Accomplishments: N/A
5. (U) FY 2002 PLANS: (\$3,965K) Acceleration of cable burial capability incorporating larger diameter cable and surface ship deployment leveraging the dual application program burial sled.
6. (U) FY 2003 PLANS: N/A

B. (U) PROGRAM CHANGE SUMMARY:

FY 2002: Congressional Plus-Up (\$4,000K), Section 8123: Management Reform Initiative (-\$35K).

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Exhibit R-2a, FY 2003 RDT&E,N Project Justification

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BUDGET ACTIVITY: 5 PROGRAM ELEMENT: 0604784N PROJECT NUMBER: X9085
PROGRAM ELEMENT TITLE: Distributed Surveillance System PROJECT TITLE: ADS - Accelerate Cable Burial Capacity

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

Table with 9 columns: FY 2001 ESTIMATE, FY 2002 ESTIMATE, FY 2003 ESTIMATE, FY 2004 ESTIMATE, FY 2005 ESTIMATE, FY 2006 ESTIMATE, FY 2007 ESTIMATE, TO COMPLETE, TOTAL PROGRAM. Rows include OPN#2221 and OMN.

(U) RELATED RDT&E:
(U) PE 0604784N X1300 Advanced Deployable System

D. (U) ACQUISITION STRATEGY:

Table with 3 columns: FY2001, FY2002, FY2003. Rows include Program Milestones, Engineering Milestones, T&E Milestone, and Contract Milestones.