CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification								DATE: **February 2003**			
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**						R-1 ITEM NOMENCLATURE PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS					
COST ($ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total PE Cost	**0.000**	**0.000**	**19.913**	**87.943**	**84.140**	**57.697**	**11.037**	**9.699**	**7.057**	**Continuing**	**Continuing**
X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)	**0.000**	**0.000**	**19.913**	**72.943**	**61.140**	**45.697**	**11.037**	**9.699**	**7.057**	**Continuing**	**Continuing**
X3073 Multi-functional Information Distribution System (MIDS)	**0.000**	**0.000**	**0.000**	**15.000**	**23.000**	**12.000**	**0.000**	**0.000**	**0.000**	**0.000**	**50.000**
											0.000
											0.000
											0.000
Quantity of RDT&E Articles											**0**

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Joint Tactical Radio System-Maritime and Fixed Station (JTRS-M/F) provides tactical Joint interoperable tactical communications. JTRS-M/F replaces all non-compliant, mostly 1970's design radios and multiplexers, with a software programmable radio that can meet present and future requirements in a cost effective and forward thinking manner. JTRS-M/F initial baseline provides the framework for meeting the planned future SATCOM, Line of Sight (LOS) and Beyond LOS communications requirements in the 2MHz to 2 GHz spectrum. Additionally, JTRS-M/F provides for advanced higher data rate and capacity waveforms in the UHF spectrum critical to supporting the Navy IT-21 Network Centric strategy and Joint Vision 2010 and provides the radio for incorporation of the developing Advanced Narrowband System (ANS) waveform, the next generation UHF follow-on satellite constellation. The Maritime and Fixed Station JTRS (JTRS-M/F) will be evolutionary in development with Block I consisting of a modification of the Digital Modular Radio (DMR) to JTRS software compliance. JTRS-M/F Block I will meet narrowband requirements of the Navy tactical communications. JTRS-M/F Block II will be a newly developed radio system that will meet both narrowband and wideband requirements in the 2 MHz to 2 GHz frequency spectrum. The new JTRS-M/F Block II system will replace a multitude of systems (HFRG, DWTS, SINCGARS, UHF SATCOM, etc.) and will form the foundation of the Common Surface Ship and Submarine Radio Room replacing all legacy tactical radios in the 2 MHz to 2 GHz frequency spectrum.

The MIDS-LVT is a jam-resistant, secure, digital (voice and data) information distribution system, enabling rapid integrated communications, navigation and identification for tactical and command and control operations. The MIDS-LVT will be upgraded to become JTRS Software Communications Architecture compliant (MIDS SCA), bringing a JTRS radio to space-constrained platforms. MIDS SCA will provide programmable channels to support additional waveforms (WNW, EPLRS, DWTS, Link-11, Link-22, SINCGARS, HAVEQUICK, DAMA SATCOM, Soldier Radio, etc.) while retaining the Link-16 and TACAN interfaces with the legacy MIDS-LVT. MIDS SCA upgrade effort begins in FY04 ($15M), will continue in FY05 ($23M), and will be completed in FY06 ($12M).

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

R-1 SHOPPING LIST - Item No. 104

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification										DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS					PROJECT NUMBER AND NAME X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)					
COST ($ in Millions)	Prior Years Cost	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	Cost to Complete	Total Program
Total Project Cost	**0.000**	**0.000**	**19.913**	**87.943**	**84.140**	**57.697**	**11.037**	**9.699**	**7.057**	**Continuing**	**Continuing**
X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)	**0.000**	**0.000**	**19.913**	**72.943**	**61.140**	**45.697**	**11.037**	**9.699**	**7.057**	**Continuing**	**Continuing**
X3073 Multi-functional Information Distribution System (MIDS)	**0.000**	**0.000**	**0.000**	**15.000**	**23.000**	**12.000**	**0.000**	**0.000**	**0.000**	**0.000**	**50.000**
RDT&E Articles Qty											**0**

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Joint Tactical Radio System-Maritime and Fixed Station (JTRS-M/F) provides tactical Joint interoperable tactical communications. JTRS-M/F replaces all non-compliant, mostly 1970's design radios and multiplexers, with a software programmable radio that can meet present and future requirements in a cost effective and forward thinking manner. JTRS-M/F initial baseline provides the framework for meeting the planned future SATCOM, Line of Sight (LOS) and Beyond LOS communications requirements in the 2MHz to 2 GHz spectrum. Additionally, JTRS-M/F provides for advanced higher data rate and capacity waveforms in the UHF spectrum critical to supporting the Navy IT-21 Network Centric strategy and Joint Vision 2010 and provides the radio for incorporation of the developing Advanced Narrowband System (ANS) waveform, the next generation UHF follow-on satellite constellation. The Maritime and Fixed Station JTRS (JTRS-M/F) will be evolutionary in development with Block I consisting of a modification of the Digital Modular Radio (DMR) to JTRS software compliance. JTRS-M/F Block I will meet narrowband requirements of the Navy tactical communications. JTRS-M/F Block II will be a newly developed radio system that will meet both narrowband and wideband requirements in the 2 MHz to 2 GHz frequency spectrum. The new JTRS-M/F Block II system will replace a multitude of systems (HFRG, DWTS, SINCGARS, UHF SATCOM, etc.) and will form the foundation of the Common Surface Ship and Submarine Radio Room replacing all legacy tactical radios in the 2 MHz to 2 GHz frequency spectrum.

The MIDS-LVT is a jam-resistant, secure, digital (voice and data) information distribution system, enabling rapid integrated communications, navigation and identification for tactical and command and control operations. The MIDS-LVT will be upgraded to become JTRS Software Communications Architecture compliant (MIDS SCA), bringing a JTRS radio to space-constrained platforms. MIDS SCA will provide programmable channels to support additional waveforms (WNW, EPLRS, DWTS, Link-11, Link-22, SINCGARS, HAVEQUICK, DAMA SATCOM, Soldier Radio, etc.) while retaining the Link-16 and TACAN interfaces with the legacy MIDS-LVT. MIDS SCA upgrade effort begins in FY04 ($15M), will continue in FY05 ($23M), and will be completed in FY06 ($12M).

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEM	X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
JTRS-M/F Block I	0.000	14.294	10.833	4.065
RDT&E Articles Quantity				

FY02: See Program Element 0303109N, Project Number X0731, Digital Modular Radio (DMR).

FY03: Conduct Operational Test for DMR ($444). Continue modification of DMR to be compliant with JTRS software architecture. The modified DMR will be renamed as JTRS-M/F Block I ($13,850).

FY04: Complete modification of DMR to be compliant with JTRS software architecture. The modified DMR will be renamed as JTRS-M/F Block 1 ($5,801). Begin porting (integration) of JTRS Joint Program Office (JPO) provided waveforms to JTRS-M/F Block 1 radio ($2,857). Test and evaluation (IOT&E) of JTRS-M/F Block 1 ($1,190). JTRS-M/F Block 1 developmental engineering and management support ($985).

FY05: Continue porting JTRS Joint Program Office (JPO) provided waveforms to Block I radio ($2,857). Follow-on Test and Evaluation (FOT&E) of JTRS-MF Block I ($1,208).

	FY 02	FY 03	FY 04	FY 05
JTRS-M/F Block II	0.000	5.619	62.110	57.075
RDT&E Articles Quantity				

FY02: See Program Element 0303109N, Project Number X0731, Digital Modular Radio (DMR).

FY03: Complete development of contract package for JTRS-M/F Block II as the follow-on to JTRS-M/F Block I, release Request for Proposal (RFP) ($5,619).

FY04: JTRS-M/F Block II System Development and Demonstration Phase contract award to one or more vendor teams for development of a JTRS Maritime and Fixed Site System covering 2 MHz - 2GHz that meets Joint Service Requirements. Development is estimated at 3 years and is expected to continue through FY06. The new system will be comprised of 3 integrated subsystems; a JTR radio set subsystem, an automated RF distribution subsystem, and a dynamic connectivity resource control sub system. Each vendor team will be required to develop and deliver 3 Engineering Development Models (EMD's) built off common building blocks and scaled to meet the requirements of a small, medium and large surface ship platform ($57,598). JTRS-MF Block II developmental engineering and management support ($4,512).

FY05: Continue JTRS-M/F Block II System Development and Demonstration Phase as described in FY 2004 plan ($52,438). JTRS-M/F Block II development engineering and management support ($4,637) .

R-1 SHOPPING LIST - Item No. 104

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEM	X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)

(U) B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
MIDS	0.000	0.000	15.000	23.000
RDT&E Articles Quantity				

FY04: MIDS SCA upgrade effort begins in FY04 ($15M). The MIDS-LVT will be upgraded to become JTRS Software Communications Architecture compliant (MIDS SCA), bringing a JTRS radio to space-constrained platforms. MIDS SCA will provide programmable channels to support additional waveforms (WNW, EPLRS, DWTS, Link-11, Link-22, SINCGARS, HAVEQUICK, DAMA SATCOM, Soldier Radio, etc.) while retaining the Link-16 and TACAN interfaces with the legacy MIDS-LVT.

FY05: Continue MIDS SCA upgrade to JTRS compliance ($23M). MIDS SCA conversion will be completed in FY06.

R-1 SHOPPING LIST - Item No. 104

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTE	X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2002	FY 2003	FY 2004	FY 2005
President's Budget:	0.000	20.373	0.000	0.000
Current BES/President's Budget	0.000	19.913	87.943	84.140
Total Adjustments	0.000	-0.460		
Summary of Adjustments				
Issue 67290 Business Process Reform		-0.081		
Issue 67291 Econ Assumptions (SEC 8135)		-0.114		
Issue 67446 IT Cost Growth		-0.037		
Issue 69222 FY03 FFRDC reduction		-0.012		
Issue 69976 Inflation Savings		-0.216		
Subtotal	0.000	-0.460	0.000	0.000

(U) Schedule:

No Changes

(U) Technical:

No Changes

R-1 SHOPPING LIST - Item No. 104

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEM	X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
3010 – Ship Tactical Communications - JTRS	0.000	0.000	25.954	40.578	127.169	123.214	112.711	117.355	Continuing	Continuing
3215 - Satellite Communications Systems - DMR	5.035	2.038	0.000	0.000	0.000	0.000	0.000	0.000		

(U) E. ACQUISITION STRATEGY:

	FY 2002	FY 2003	FY 2004	FY2005
Program Milestones: N/A				
JTRS-M/F Block I			3rd Qtr Complete JTRS Transition	1st Qtr Full Rate Production Decision Review
JTRS-M/F Block II		3Q RFP Release 4Q Milestone B	1st Qtr Contract Award	
T&E Milestones:				
JTRS-M/F Block I				3rd & 4th Qtr DT/OT
JTRS-M/F Block II: N/A				

(U) F. MAJOR PERFORMERS:

FY04/FY05: JTRS-M/F Block II is a competitively awarded development contract expected to be awarded in FY04.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2003**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT PE: 0604280N TITLE: JOINT TACTICAL RADIO SYS				PROJECT NUMBER AND NAME X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)						
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
H/W Dev: JTRS-M/F Block I	CPAF	GDDS		13.850	Dec-02	8.658	Dec-03	2.857			25.365	
H/W Dev: JTRS-M/F Block II	CPAF	TBD				57.598	Dec-03	52.438		Continuing	Continuing	
Aircraft Integration-MIDS Upgrade	CPAF	TBD				15.000	TBD	23.000		12.000	50.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering											0.000	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	13.850		81.256		78.295		Continuing	Continuing	
Remarks:												
Development Support											0.000	
Software Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
Studies & Analyses											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2003**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT PE: 0604280N TITLE: JOINT TACTICAL RADIO SYS				PROJECT NUMBER AND NAME X3073 Joint Tactical Radio System-Maritime/Fixed						
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
Developmental Test & Evaluation	various	various		0.444	Dec-02	1.190	Dec-03	1.208	12/03	Continuing	Continuing	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.444		1.190		1.208		Continuing	Continuing	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	various	various		5.619		5.497	Dec-03	4.637		Continuing	Continuing	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	5.619		5.497		4.637		Continuing	Continuing	
Remarks:												
Total Cost			0.000	19.913		87.943		84.140		Continuing	Continuing	
Remarks:												

R-1 SHOPPING LIST - Item No. 104

CLASSIFICATION:

EXHIBIT R4, Schedule Profile	**JTRS-M/F BLOCK I**	DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS	X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)

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
						19.9	87.9	84.1	57.7	11	9.7	7.06																						
Acquisition Milestones					△	Contract Award										△	Full Rate Production															
Test & Evaluation Milestones																																
Developmental Testing (DT-IIA)														△																		
Operational Testing (OT-IIA)															△																	

R-1 SHOPPING LIST - Item No. 104

* Not required for Budget Activities 1, 2, 3, and 6

CLASSIFICATION:

Exhibit R-4a, Schedule Detail	**JTRS-M/F BLOCK I**				DATE: **February 2003**			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME			
RDT&E, N / BA-5	PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS				X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
System Design Review (SDR)								
Milestone B (MS-B)								
Contract Preparation								
Contract Award		1Q						
Software Specification Review (SSR)								
Preliminary Design Review (PDR)								
System Development								
Critical Design Review (CDR)								
Quality Design and Build								
Test Readiness Review (TRR)								
DT/OT Certification								
Developmental Test				2Q				
Eng Dev Model (EDM) Radar Delivery - Lab								
Software Delivery 1XXSW								
Preproduction Readiness Review (PRR)								
EDM Radar Delivery - Flt Related								
Milestone C (MS C)								
Contractor Testing								
Operational Testing				3Q				
Start Low-Rate Initial Production I (LRIP I)								
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II								
Operational Testing (OT-IIB)								
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)								
Low-Rate Initial Production I Delivery								
Technical Evaluation (TECHEVAL)								
Physical Configuration Audit								
Operational Evaluation (OT-IIC) (OPEVAL)								
Low-Rate Initail Production II Delivery								
Contract Award Production								
IOC								
Full Rate Production (FRP) Decision								
Full Rate Production Start								
First Deployment								

R-1 SHOPPING LIST - Item No. 104

CLASSIFICATION:

EXHIBIT R4, Schedule Profile **JTRS-M/F BLOCK II** DATE: **February 2003**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT NUMBER AND NAME: PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS

PROJECT NUMBER AND NAME: X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)

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
						19.9	87.9	84.1	57.7	11	9.7	7.06																						
Acquisition Milestones								MSB												MSC							IOC			FRPDR			
Prototype Phase																																
Contract Preparation																																
Contract Award Development																																
Preliminary Design Review																																
System Development																																
Critical Design Review																																
Test & Evaluation Milestones																																
DT/OT Certification																																
Contractor Testing															CDT				PQT			FAT										

R-1 SHOPPING LIST - Item No. 104

* Not required for Budget Activities 1, 2, 3, and 6

CLASSIFICATION:

Exhibit R-4a, Schedule Detail	**JTRS-M/F BLOCK II**				DATE: **February 2003**			
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT PE: 0604280N TITLE: JOINT TACTICAL RADIO SYSTEMS				PROJECT NUMBER AND NAME X3073 Joint Tactical Radio System-Maritime/Fixed (JTRS-M/F)			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase								
System Design Review (SDR)								
Milestone B (MS-B)		4Q						
Contract Preparation	2Q	4Q						
Contract Award Development			1Q					
Software Specification Review (SSR)	TBD		2Q					
Preliminary Design Review (PDR)			3Q					
System Development			1Q		4Q			
Critical Design Review (CDR)				1Q				
Quality Design and Build								
Test Readiness Review (TRR)					3Q			
DT/OT Certification							3Q	
Developmental Testing (DT-IIA)					3Q			
Eng Dev Model (EDM) Radar Delivery - Lab					2Q			
Software Delivery 1XXSW								
Preproduction Readiness Review (PRR)					4Q			
EDM Radar Delivery - Flt Related								
Milestone C (MS C)					4Q			
Contractor Testing								
Operational Testing (OT-IIA)								
Start Low-Rate Initial Production I (LRIP I)						1Q		
Software Delivery 2XXSW								
Developmental Testing (DT-IIB1)								
Developmental Testing (DT-IIB2)								
Start Low-Rate Initial Production II							1Q	
Operational Testing (OT-II)							3Q	
Developmental Testing (DT-IIC)								
Functional Configuration Audit (FCA)							1Q	
Low-Rate Initial Production I Delivery							2Q	
Technical Evaluation (TECHEVAL)							2Q	
Physical Configuration Audit								
Operational Evaluation (OT-II) (OPEVAL)							3Q	
Low-Rate Initail Production II Delivery								2Q
Contract Award Production								
IOC							3Q	
Full Rate Production (FRP) Decision								1Q
Full Rate Production Start								1Q
First Deployment								3Q

R-1 SHOPPING LIST - Item No. 104