EXHIBIT R-2, RDT&E Budget Item Justification							DATE: **May 2009**	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-4**					R-1 ITEM NOMENCLATURE 0604272N, ANTI-MISSILE TECHNOLOGY (TADIRCM)			
COST ($ in Millions)	FY 2008	FY 2009	FY 2010					
Total PE Cost	32.364	66.568	63.702					
3040 ANTI-MISSILE TECHNOLOGY (TADIRCM)	26.965	62.978	63.702					
9999 Congressional Add	5.399	3.590						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This element includes development of electronic warfare systems for the United States Navy (USN) and United States Marine Corps (USMC) assault and strike aircraft. This includes the development and testing of advanced Infrared Countermeasures (IRCM) systems for emerging threats and emergency contigencies.

EXHIBIT R-2, RDT&E Budget Item Justification	DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-4**	R-1 ITEM NOMENCLATURE 0604272N, ANTI-MISSILE TECHNOLOGY (TADIRCM)

B. PROGRAM CHANGE SUMMARY:

Funding:	FY08	FY09	FY10
Previous President's Budget:	32.552	63.244	64.668
Current President's Budget:	32.364	66.568	63.702
Total Adjustments	-0.188	3.324	-0.966
Summary of Adjustments			
Congressional Rescissions			
Congressional Adjustments		3.505	
SBIR/STTR/FTT Assessments	-0.188		
Program Adjustments			-0.962
Rate/Misc Adjustments		-0.181	-0.004
Subtotal	-0.188	3.324	-0.966

Schedule:

The schedule for Tactical Aircraft Infrared Countermeasure (TADIRCM) has changed due to new guidance from OPNAV. An Analysis of Alternatives (AoA) was conducted by N88 to assess the need for an advanced Infrared Countermeasure (IRCM) capability for assault and strike aircraft against surface-to air threats. Conclusions from the AoA determined there was an immediate need for an advanced IRCM capability for assault (rotary wing) aircraft, however, additional analysis was required to evaluate what level of IRCM is required for Strike aircraft. The conclusion of the AoA was that advanced Missile Warning Technology was sufficiently mature to proceed into a System Development and Demonstration (SDD) program, however that Assault Directed Infrared countermeasure (DIRCM) technology for small to medium USN/USMC assault aircraft required the maturity of several technologies prior to being ready for SDD. As a result of the AoA and guidance from OPNAV, PMA-272 was requested to revise the TADIRCM schedule and acquisition strategy to support the fielding of an advanced IRCM capability for USN/USMC Assault aircraft. TADIRCM will now be executed via two separate program increments. The first program will develop, test and field an advanced missile warning capability, designated as the Joint and Allied Threat Awareness System (JATAS). The JATAS contract award is planned for FY2009 and with an Initial Operational Capability (IOC) date of FY2014 planned. The second program will develop, test, and field an Assault DIRCM system with a contract award in FY2012 and IOC 2016.

Technical:

The acquisition strategy has been revised to field an advanced IRCM capability for Assault aircraft. An evolutionary acquisition approach will be implemented in fielding this capability. The capability will be fielded in two increments, with the first increment being an advanced Missile Warning System (MWS) capability. This capability has been designated as JATAS. A JATAS contract award is planned for FY2009 with an IOC planned for FY2014.

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT NUMBER AND NAME 0604272N, TADIRCM				PROJECT NUMBER AND NAME 3040, ANTI-MISSILE TECHNOLOGY (TADIRCM)			
COST ($ in Millions)	FY 2008	FY 2009	FY 2010					
3040 ANTI-MISSILE TECHNOLOGY (TADIRCM)	26.965	62.978	63.702					
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Tactical Aircraft Direct Infrared Countermeasures (TADIRCM) system provides the war fighter with protection against surface and air-to-air missiles. This project looks at an advanced Infrared Countermesare (IRCM) capability for USN/USMC rotary wing/tilt rotor Assault aircraft against InfraRed (IR) Man Portable Air Defense (MANPAD) and surface-to-air (SAM) threats. This project is divided into two components: 1) An advanced missile warning threat detection capability (Joint and Allied Threat Awareness System) and 2) An advanced IR countermeasure capability (Assault Directed Infrared Countermeasure). JATAS will be the front end of an integrated survivability suite. It will require integration with the APR-39 or follow-on Radar Warning Receiver/EW integration bus, the ALE-47 Countermeasures Dispensing System, and a number of joint and allied platforms. It will also provide advanced capabilities that require extensive testing & evaluation of IRCM techniques.

EXHIBIT R-2a, RDT&E Project Justification			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-4	0604272N, TADIRCM	3040, ANTI-MISSILE TECHNOLOGY (TADIRCM)	

B. Accomplishments/Planned Program

TADIRCM - JATAS	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	22.315	58.978	43.437	
RDT&E Articles Quantity				

Completed a demonstration of the ability of advanced missile warning technology to detect hostile fire threats (i.e. rocket propelled grenade and small arms, etc.). Collected hostile fire data and generated a hostile fire data base that will be used to support the Joint and Allied Threat Awareness System (JATAS) test and evaluation efforts. Plan to fund engineering and program management efforts to support a JATAS contract award in FY2009. Will continue to fund the development of Hostile Fire Indication (HFI) algorithms and demonstrate the maturity of these algorithms in a real time threat environment using modeling and simulation. The Navy decided to increase the TADIRCM funding line to accelerate the fielding of an advanced Infrared Countermeasure (IRCM) capability for rotary wing platforms as a result of the Global War on Terrorism (GWOT).

TADIRCM - Assault	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		2.000	19.265	
RDT&E Articles Quantity				

Plan to fund engineering and program management efforts to support an Assault DIRCM contract award in FY2012. Conduct an early operational assessment flight test demonstration of a light weight DIRCM capability on an Assault aircraft.

JATAS and AssaultDIRCM Pre-MS B, Risk Reduction, SDD Effort	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	4.650	2.000	1.000	
RDT&E Articles Quantity				

Fund efforts to support engineering, program management, and risk reduction efforts for the JATAS and the Assault DIRCM programs. This includes requirement development and contracting efforts for a JATAS and Assault DIRCM contract. Development of applicable modeling and simulation for both programs. Risk reduction efforts in the area of HFI for JATAS and risk reduction/technology development efforts to reduce the size and weight an Assault DIRCM Pointer Tracker System.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0604272N, TADIRCM	3040, ANTI-MISSILE TECHNOLOGY (TADIRCM)

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2008	FY 2009	FY 2010
P-1 #52, Common ECM, OSIP 005-08	27.904	25.673	2.733

D. ACQUISITION STRATEGY:

OPNAV (N88) completed an Analysis of Alternatives (AoA) in March 2007 to address the need for an Assault Directed InfraRed Countermeasure (DIRCM) capability for assault (rotary wing) platforms Based on the results of the AoA , an evolutionary acquisition strategy will be used to develop an advanced Infrared Countermeasure (IRCM) capability for USN/USMC rotary wing and tilt rotor assault aircraft. This acquisition approach will consist of two program increments 1) the development, test, and fielding of a Missile Warning capability to detect surface-to-air and air-to air InfraRed (IR) threats and 2) an Assault DIRCM system to counter current and future IR threats. The DIRCM sends directed laser energy to the incoming IR threat (once detected by the missile warning system). This approach will accelerate development of the fielding of the missile warning capability while allowing Assault DIRCM technology to mature. Assault DIRCM technology maturation is required to support the size and weight constraints of USN/USMC Assault platforms. The first increment of Assault DIRCM is the missile warning component designated by N88 as the Joint and Allied Threat Awareness System (JATAS). A JATAS contract award is scheduled for FY 2009.

Exhibit R-3 Cost Analysis (page 1)								DATE: May 2009				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**			PROGRAM ELEMENT 0604272N, TADIRCM			PROJECT NUMBER AND NAME 3040, ANTI-MISSILE TECHNOLOGY (TADIRCM)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Primary Hdw Development JATAS	C/CPIF	TBD	12.947	36.000	Jun 2009	25.341	May 2010					
Aircraft Integration JATAS	WX	VARIOUS	0.180	4.500	Jun 2009	9.895	May 2010					
Aircraft Integration JATAS	SS/CPIF	DCMA, L M, Owego, NY	2.615									
Aircraft Integration JATAS	C/CPIF	VARIOUS	2.592									
Modeling/Simulation JATAS	WX	VARIOUS	1.940	1.600	Dec 2008	0.400	Dec 2009					
Systems Engineering JATAS	C/CPFF	TEKLA, WOODBRIDGE VA	2.896									
Systems Engineering JATAS	C/CPFF	VARIOUS	.330									
Systems Engineering Gov't JATAS	WX	VARIOUS	2.755	0.625	Nov 2008	1.175	Dec 2009					
Systems Engineering Gov't JATAS	RX	NRL, WASHINGTON DC	1.443	0.400	Nov 2008							
Systems Eng CONG HPFL	WX	NSWC Crane, Indiana	0.288									
Systems Eng CONG Assault	WX	NSWC Crane, Indiana	3.648									
Primary Hdw Development Assault	C/CPIF	TBD		4.000	Mar 2009	8.303	Mar 2010					
Aircraft Integration Assault	TBD	TBD				2.375	Mar 2010					
Modeling/Simulation Assault	WX	VARIOUS				0.300	Dec 2009					
Systems Engineering Gov't Assault	WX	VARIOUS				1.025	Dec 2009					
Subtotal Product Development			31.634	47.125		48.814						

Note:
1. Totals may not add due to rounding.

Exhibit R-3 Cost Analysis (page 2)							DATE: **May 2009**					
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**		PROGRAM ELEMENT 0604272N, TADIRCM				PROJECT NUMBER AND NAME 3040, ANTI-MISSILE TECHNOLOGY (TADIRCM)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Development Support JATAS	WX	VARIOUS	3.900									
Configuration Management JATAS	WX	VARIOUS		.100	Dec 2008	0.100	Dec 2009					
Integrated Logistics JATAS	WX	VARIOUS	.717	1.525	Dec 2008	1.525	Dec 2009					
Software Development JATAS	WX	NAWCWD POINT MUGU, CA	.475	1.300	Dec 2008	0.400	Dec 2009					
Studies & Analyses Gov't JATAS	WX	VARIOUS	5.960	0.931	Dec 2008							
S & A NonFFRDC JATAS	RX	NRL, WASHINGTON DC	.160									
Technical Data JATAS	WX	NRL, WASHINGTON DC	.250	1.800	Nov 2008							
S & A CONG HPFL GOV	WX	NSWC CRANE, Indiana	0.140									
S&A CONG HPFL	RX	NSWC CRANE, Indiana	1.000									
Software Development Assault	WX	VARIOUS				0.300	Dec 2009					
Integrated Logistics Assault	WX	VARIOUS				1.525	Dec 2009					
Configuration Management Assault	WX	VARIOUS				0.100	Dec 2009					
Subtotal Support			12.602	5.656		3.950						

Exhibit R-3 Cost Analysis (page 3)						DATE: May 2009						
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**			PROGRAM ELEMENT 0604272N, TADIRCM			PROJECT NUMBER AND NAME 3040, ANTI-MISSILE TECHNOLOGY (TADIRCM)						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 09 Cost	FY 09 Award Date	FY 10 Cost	FY 10 Award Date					
Developmental T & E JATAS	WX	NRL, WASHINGTON DC	1.132	2.000	Dec 2008	0.136	Dec 2009					
Operational T & E JATAS	WX	VARIOUS	.162			0.400	Jan 2010					
ENG & Evaluation JATAS	C/CPFF	TBD	4.892									
ENG & Evaluation Gov't JATAS	WX	VARIOUS	3.257	.500	Nov 2008	0.630	Dec 2009					
Live Fire Support JATAS	WX	VARIOUS				0.200	Feb 2010					
Technical Maturation JATAS	WX	NAWCAD, Pax River MD	2.655									
Technical Maturation JATAS	MP	Fort Belvoir/DTIS	.280									
Developmental T&E MH60S JATAS	WX	NAWCAD, Pax River MD	.236									
Test Assets JATAS	WX	TBD		4.150	Jun 2009	0.820	Jan 2010					
ENG & Evaluation Gov't Assault	WX	VARIOUS				0.202	Dec 2009					
Developmental T&E Assault	WX	NRL, WASHINGTON DC										
Test Assets Assault	WX	TBD		0.200	Jun 2009	3.600	Jan 2010					
Live Fire Support Assault	WX	VARIOUS										
Subtotal T&E			12.614	6.850		5.988						
Remarks:												
Contractor Engineering Supt JATAS	C/CPFF	VARIOUS	2.675	1.000	Nov 2008	0.600	Dec 2009					
Gov't Engineering Supt JATAS	WX	VARIOUS	1.942	1.350	Nov 2008	0.430	Dec 2009					
Program Management Supt JATAS	C/CPFF	VARIOUS	1.539	.750	Nov 2008	0.750	Dec 2009					
Travel JATAS	WX	NAVAIR	.534	.195	Oct 2008							
Transportation JATAS	MP	DIA, Redstone, AL	.015									
Direct Support Costs JATAS	WX	VARIOUS	.365	.052	VARIOUS							
Cost Analysis Support JATAS	WX	NAWCAD, Pax River MD	.200			0.300	Dec 2009					
Contracting Procure Fee JATAS	WX	NAWCAD, Pax River MD	.048									
Acquisition Program Office JATAS	WX	NAWCAD, Pax River MD	.185									
Eng & Eval CONG HPFL Gov	WX	NSWC CRANE, INDIANA	.095									
En & Ev CONG ASSAULT	MP	FT. MONMOUTH, NJ	.326									
Travel CONG HPFL	WX	CRANE	.020									
NAWCAD Pax Support JATAS	WX	NAWCAD, Pax River MD	1.006			0.620	Dec 2009					
Contractor Engineering Supt Assault	C/CPFF	VARIOUS				0.600	Dec 2009					
Gov't Engineering Supt Assault	WX	VARIOUS				0.430	Dec 2009					
Cost Analysis Support Assault	WX	NAWCAD, Pax River MD				0.300	Dec 2009					
NAWCAD Pax Support Assault	WX	NAWCAD, Pax River MD				0.620	Dec 2009					
Program Management Supt Assult	C/CPFF	VARIOUS				0.300	Dec 2009					
Subtotal Management			8.950	3.347		4.950						
Remarks:												
Total Cost			65.800	62.978		63.702						
Remarks:												

Note:

1. Totals may not add due to rounding.

EXHIBIT R4, Schedule Profile		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT NUMBER AND NAME 0604272N, TADIRCM	PROJECT NUMBER AND NAME 3040, ANTI-MISSILE TECHNOLOGY

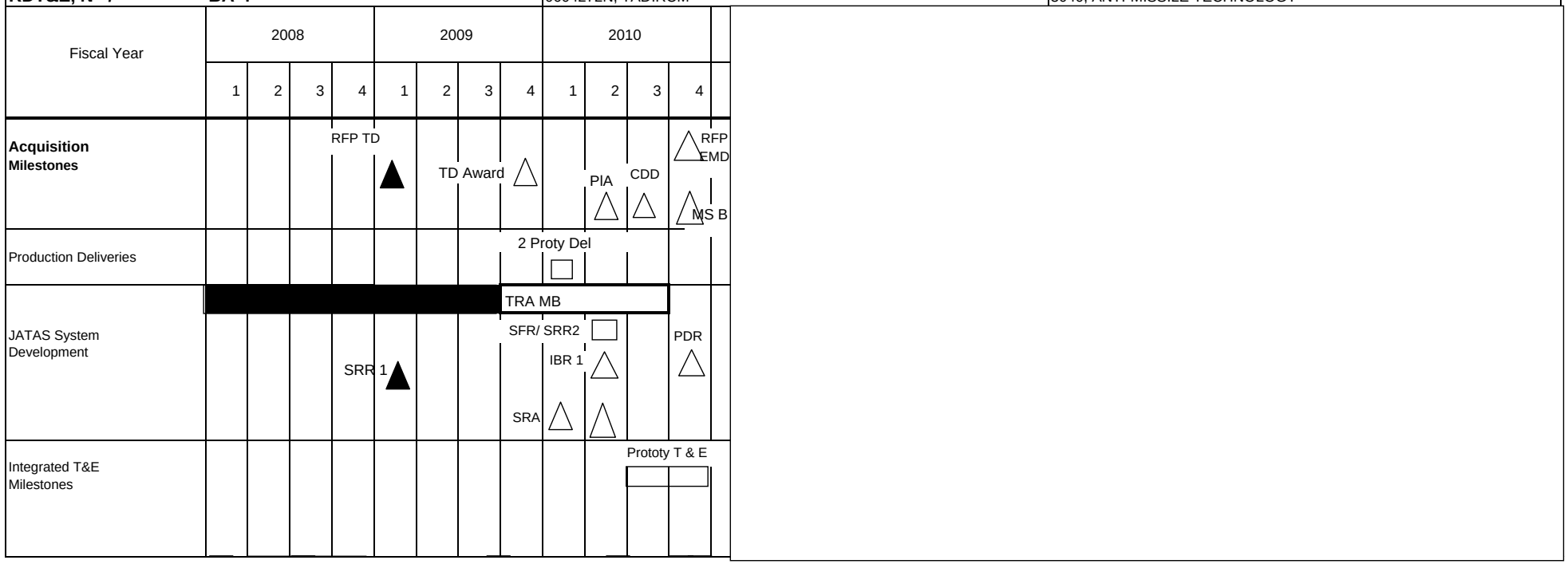

Exhibit R-4a, Schedule Detail						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT 0604272N, TADIRCM				PROJECT NUMBER AND NAME 3040, ANTI-MISSILE TECHNOLOGY			
Schedule Profile (JATAS)	FY 2008	FY 2009	FY 2010					
Technology Readiness Assessment for Milestone B (TRA MB)	1Q-4Q	1Q-4Q	1Q-3Q					
Request for Proposal for Technology Demo (RFP for TD)		1Q						
System Requirements Review 1 (SRR)		1Q						
Technology Demonstration Award		4Q						
Prototype Delivery (2)			1Q					
Schedule Risk Assessment (SRA)			1Q					
System Functional Review/System Requirements Review 2 (SFR/SRR)			2Q					
Platform Integration Award			2Q					
Integrated Baseline Review 1 (IBR)			2Q					
Prototyping Test and Evaluation (T+E)			3Q-4Q					
Capabilities Development Document (CDD)			3Q					
Preliminary Design Review (PDR)			4Q					
Milestone B			4Q					
Request for Proposal for EM Development and Demonstration (RFP for EMDD)			4Q					

EXHIBIT R4, Schedule Profile			DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT NUMBER AND NAME 0604272N, TADIRCM	PROJECT NUMBER AND NAME 3040, ANTI-MISSILE TECHNOLOGY (Assault DIRCM)	

Fiscal Year	2008				2009				2010						
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
Acquisition Milestones															
Production Deliveries															
Assault	RR-F1							RR: F I							
DIRCM	RR: P I								RR: P I						
Integrated T&E Milestones															

Exhibit R-4a, Schedule Detail						DATE: May 2009		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT 0604272N, TADIRCM				PROJECT NUMBER AND NAME 3040, ANTI-MISSILE TECHNOLOGY			
Schedule Profile (JATAS)	FY 2008	FY 2009	FY 2010					
Risk Reduction FI	1Q-4Q	1Q-4Q	1Q-4Q					
Risk Reduction PI	1Q-4Q	1Q-4Q	1Q-4Q					
System Requirements Review 1 (SRR)								
Request for Proposal for Technology Demo (RFP for TD)								
Technology Readiness Assessment for Milestone B (TRA)								
Technology Demonstration Award								
Schedule Risk Assessment (SRA)								
System Functional Review/System Requirements Review 2 (SFR/SRR)								
Platform Integration Award								
Integrated Baseline Review 1 (IBR)								
Capabilities Development Document (CDD)								
Preliminary Design Review (PDR)								
Prototype Delivery (2)								
Milestone B								
Request for Proposal for EM Development and Demonstration (RFP for EMDD)								

EXHIBIT R-2a, RDT&E Project Justification							DATE: May 2009	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-4**	PROGRAM ELEMENT NUMBER AND NAME 0604272N, TADIRCM				PROJECT NUMBER AND NAME 9999, Congressional Adds			
COST ($ in Millions)	FY 2008	FY 2009	FY 2010					
9999 Congressional Add	5.399	3.590						
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional Adds. FY08 High Power Fiber Laser funding was authorized for the Advanced IRCM (InfraRed Countermeasure) Demonstrator project. The purpose is to rapidly develop a protype to prove that insertion of new laser technology can yield a more robust solution to the Infrared (IR) missile threat at lower cost and with less risk while still advancing the date for Initial Operational Capability (IOC).

FY08 and FY09 Assault DIRCM Congressional Add funding is/was authorized for risk reduction efforts to include the incorporation of laser warning and advanced infrared missle warning in a form facrot consistent with current aircraft installation hardware and to deomonstrate a less cost IRCM solution that addresses not only surface to air and air to air missile threats but also enhanced collision avoidance and protection against the downing of aircraft by small arms and rocket propelled grenade assaults.

EXHIBIT R-2a, RDT&E Project Justification		DATE: May 2009
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0604272N, TADIRCM	9999, Congressional Adds

B. Accomplishments/Planned Program

9C01A-High Power Fiber Laser	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	1.543			
RDT&E Articles Quantity				

Funding is authorized for the Advanced IRCM (InfraRed Countermeasure) Demonstrator project. The purpose is to rapidly develop a protype to prove that insertion of new laser technology can yield a more robust solution to the Infrared (IR) missile threat at lower cost and with less risk while still advancing the date for Initial Operational Capability (IOC).

9C00A-Assault DIRCM Congressional Add	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost	3.856	1.994		
RDT&E Articles Quantity				

Funding is authorized for risk reduction efforts to include the incorporation of laser warning and advanced infrared missle warning in a form consistent with current aircraft installation hardware and to deomonstrate a less cost IRCM solution that addresses not only surface to air and air to air missile threats but also enhanced collision avoidance and protection against the downing of aircraft by small arms and rocket propelled grenade assaults.

9D64A Compact ultra-Fast Laser System	FY 08	FY 09	FY 10	
Accomplishments/Effort/Subtotal Cost		1.596		
RDT&E Articles Quantity				

Funding is authorized for risk reduction efforts to include development and testing of High Power Fiber Laser (HPFL) and Ultra-Short Pulse Lasers (USPL) for application to airborne self-protection for application to airborne self-protection against surface-to-air and air-to-air missile threats consistent with current aircraft installation and hardware.

R-1 SHOPPING LIST - Item No. 75