

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification							DATE:	
							February 2004	
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE			
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					0604512N Shipboard Aviation Systems			
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost		24.311	23.586	28.631	33.097	31.486	22.127	21.344
W2232 CV Launch & Recovery Systems		22.380	18.148	28.631	33.097	31.486	22.127	21.344
W9071 Shipboard Aviation Information Technology		1.931	3.955					
W9385 Machine Vision Confirmation of Launch Bar Eng			1.483					
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
This Navy unique project addresses the System Development and Demonstration (SDD) of all systems required to recover and launch Navy/Marine Corps aircraft (fixed/rotary wing and Vertical/Short Take-Off and Landing (VSTOL) operating aboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD) and aviation facility ships. This program includes the concept exploration and the development phase of the following systems under Projects W2232, and Project W9071 including the funding of Production Representative Models (PRM): - (U) Virtual Imaging System for Approach and Landing (VISUAL): VISUAL provides ship's force and Landing Signal Officer (LSO) with enhanced images of the aircraft during recovery operations in low visibility, day and night conditions. - (U) Moriah Wind System (MWS): Integrated digital wind measurement designed to replace the Type F wind system on all U.S. Navy air capable ships. - (U) Advanced Arresting Gear (AAG): The AAG replaces the MK7 arresting gear, which has reached the limits of its operating capability. - (U) Cost Reduction and Effectiveness Improvement Initiative (CREI) Aircraft Carrier Arresting Gear Hydraulic Fluid: This program seeks to replace the unique hydraulic fluid , ethylene glycol , used in the arresting gear systems with a commercially available ethylene glycol product. The commercial product will be less expensive, contain system component protection and will reduce the life cycle cost of the system. - (U) Shipboard Aviation Data Management System Initiative: This initiative will use state-of-the-art information technology and decision support systems to automate the current manual intensive process in collecting and distributing information to enable aviation operations on board aircraft carriers to be accomplished in a more efficient and effective manner. - (U) Machine Vision Confirmation of Launch Bar Engagement: This Phase III SBIR will be used for the testing of a shipboard demo. This would include a full system on one catapult for a period of at least six months. Reliability testing would also be conducted prior to installation. This is a follow-on to an initial Phase II SBIR project entitled "Autonomous Launch Bar Seating Check Machine Vision Confirmation of Launch Bar Engagement".								

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Exhibit R-2, RDTEN Budget Item Justification
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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems				PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems			
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		22.380	18.148	28.631	33.097	31.486	22.127	21.344
RDT&E Articles Qty		4						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This Navy unique project addresses the System Development and Demonstration (SDD) of all systems required to recover and launch Navy/Marine Corps aircraft [fixed/rotary wing and Vertical/Short Take-Off and Landing (VSTOL)] operating aboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD) and aviation facility ships. This program includes the system development phase of the following systems under Project W2232, including the funding of production representative models (PRM):

- (U) Moriah Wind System (MWS): MWS replaces current analog wind system with an integrated digital wind measurement system which will be an affordable, LAN compatible, wind suite for all classes of air capable Navy ships.
- (U) Virtual Imaging System for Approach and Landing (VISUAL): VISUAL provides ship's force and Landing Signal Officer (LSO) with enhanced images of the aircraft during recovery operations in low visibility, day and night conditions.
- (U) Advanced Arresting Gear (AAG): The AAG replaces the MK7 arresting gear, which has reached the limits of its operating capability.
- (U) Cost Reduction and Effectiveness Improvement Initiative (CREI) (Aircraft Carrier Arresting Gear Hydraulic Fluid): This program seeks to replace the unique hydraulic fluid, ethylene glycol, used in the arresting gear systems with a commercially available ethylene glycol product. The commercial product will be less expensive, contain system component projection, and will reduce the life cycle cost of the systems.

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems																	
(U) B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">VISUAL</td> <td style="width: 10%;"></td> <td style="width: 15%;">FY 03</td> <td style="width: 15%;">FY 04</td> <td style="width: 15%;">FY 05</td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td></td> <td>6.650</td> <td>1.918</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td>2</td> <td></td> <td></td> </tr> </table> VISUAL Completed fabrication of two (2) CV/CVN PRM units and conducted integration/test efforts. Provided engineering and management support to the program. Delivered two (2) CV/CVN PRM units. Complete environmental/EMI/R&M lab and conduct landbased/shipboard developmental testing. Provide engineering and management support to the program. Complete CV/CVN system operational testing. Conduct MS C for CV systems.					VISUAL		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		6.650	1.918		RDT&E Articles Quantity		2		
VISUAL		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		6.650	1.918																
RDT&E Articles Quantity		2																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">MWS</td> <td style="width: 10%;"></td> <td style="width: 15%;">FY 03</td> <td style="width: 15%;">FY 04</td> <td style="width: 15%;">FY 05</td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td></td> <td>2.827</td> <td>0.250</td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td>2</td> <td></td> <td></td> </tr> </table> MWS Completed CDR and delivered two (2) MWS PRM. Initiate and complete developmental testing. Receive MS C and FRP approval. Provide engineering and management support for the program.					MWS		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		2.827	0.250		RDT&E Articles Quantity		2		
MWS		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		2.827	0.250																
RDT&E Articles Quantity		2																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">CREI</td> <td style="width: 10%;"></td> <td style="width: 15%;">FY 03</td> <td style="width: 15%;">FY 04</td> <td style="width: 15%;">FY 05</td> </tr> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td></td> <td>0.184</td> <td></td> <td></td> </tr> <tr> <td>RDT&E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> CREI Conducted PDR for Commercial Arresting Gear hydraulic fluid in support of Cost Reduction & Effectiveness Improvement Initiative (CREI). Initiated developmental testing of commercial Arresting Gear recyclable hydraulic fluid. Conducted dead-load testing on selected alternative hydraulic fluids. Transitioned the program to production and fleet use.					CREI		FY 03	FY 04	FY 05	Accomplishments/Effort/Subtotal Cost		0.184			RDT&E Articles Quantity				
CREI		FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost		0.184																	
RDT&E Articles Quantity																			

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems		
(U) B. Accomplishments/Planned Program				
AAG		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		12.719	15.980	28.631
RDT&E Articles Quantity				
AAG Completed AoA and Technology Maturity Assessment. Prepared and received approval for Acquisition Strategy. Prepared and released RFP to Industry. Conduct source selection efforts. Prepared for and received milestone A approval and awarded Technology Development (TD) contract(s). Complete System Requirements Review. Initiate system design efforts for AAG to include modeling and simulation and trade studies. Complete Preliminary Design and Integrated Baseline Reviews. Select SDD phase contractor. Receive MS B approval and award SDD contract. Initiate Critical Design Review. Provide engineering and management support to the program.				

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems

(U) C. PROGRAM CHANGE SUMMARY:

(U) Funding:	FY 2003	FY 2004	FY 2005
Previous President's Budget:	24.075	18.352	25.255
Current President's Budget	22.380	18.148	28.631
Total Adjustments	-1.695	-0.204	3.376
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.204	
Congressional rescissions			
SBIR/STTR Transfer	-0.338		
Economic Assumptions			-0.074
Reprogrammings	-1.357		
Sponsor/FMB/NAVAIR Adjustments			
Reprioritization			3.450
Congressional increases			
Subtotal	-1.695	-0.204	3.376

(U) Schedule:

VISUAL program slipped due to technical challenges on CV unit. These challenges have caused the following modifications to the VISUAL effort: VISUAL TRR scheduled for 4Q/02 has been changed to 3Q/03; DT scheduled for 1Q-3Q/03 has been changed to 3Q/03-1Q/04; TECHEVAL scheduled for 2Q-4Q/03 has been changed to 4Q/03-1Q/04; Operation Testing scheduled for 2Q/03 has been changed to 1Q/04 and OPEVAL scheduled for 1Q/04 has been changed to 1Q-2Q/04. Delivery of CV EDM Shipboard Unit was delayed from 1Q/03-3Q/03. Delivery of CV EDM Lab Unit was delayed from 1Q/03-4Q/03. VISUAL L Class development was cancelled due to cost overruns in the CV program.

AAG program slipped due to minor delay in Source Selection process. This resulted in the following changes: Milestone A scheduled for 3Q/03 has been changed to 4Q/03 and Contract Award scheduled for 3Q/03 has been changed to 4Q/03. The following changes were made to test and evaluation milestones to more accurately reflect the program of record: Developmental testing scheduled for 3Q/07-4Q/07 has been changed to 3Q/07-1Q/08 and Development Test/Operational Assist scheduled for 1Q/09-4Q/09 to 2Q/09-3Q/09

(U) Technical:

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME W2232 CV Launch & Recovery Systems				
(U) D. OTHER PROGRAM FUNDING SUMMARY:									
<u>Line Item No. & Name</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN (Aircraft Launch & Recovery Equipment, 43SJ) Related RDT&E: P.E. 0603512N (Carrier Systems Development)	18.598	20.127	21.275	30.028	30.738	31.002	32.165	28.780	212.713
(U) E. ACQUISITION STRATEGY:									
MWS: The Navy has prepared a performance specification and competitively awarded an IDIQ contract to cover SDD (CPIF) and production requirements (FFP).									
VISUAL: The Navy prepared a performance specification and competitively awarded a cost plus incentive fee contract to develop/deliver PRMs, with fixed-price successive target production options. LH system development is a contractual option									
AAG: The Navy will competitively award up to two Cost Plus Award Fee (CPAF) TD phase contracts to develop the AAG. Upon completion of the Preliminary Design and Integrated Baseline Reviews, the Navy will award a single Cost Plus Incentive Fee (CPIF) contract for the SDD phase to develop and demonstrate a production representative AAG at the NAVAIR Lakehurst Jet Car and Runway Aircraft Landing test sites. After successful demonstration of the production representative AAG, the Navy will award Fixed Price Incentive Fee (FPIF) contracts for production quantities.									
CREI: The Navy competitively awarded a prototype contract of a commercial fluid. The Navy laboratory tested commercial samples and then awarded and tested one engines worth of fluid.									

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604512N Shipboard Aviation Systems			W2232 CV Launch & Recovery Systems						
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
Primary H/W Development (AAG)	C/CPAF	General Atomics/Sunnyvale, CA		4.639	07/03	5.649	12/03				10.288	10.288
Primary H/W Development (AAG)	C/CPAF	Northrop Grumman/San Diego, CA		4.394	07/03	5.328	12/03				9.722	9.722
Primary H/W Development (AAG)	C/CPIF	TBD						21.390	11/04	61.125	82.515	82.515
Primary H/W Development (AAG)	WX	NAWCAD, Lakehurst		0.775	11/02	0.530	11/03	1.137	11/04	Continuing	Continuing	
Primary H/W Development (VISUAL)	C/CPIF	DRS / Anaheim, CA	21.586	4.681	11/02	1.200	02/04				27.467	27.467
Primary H/W Development (MWS)	CPIF/FP	QPI / Fredricksburg, VA	1.789	1.836	11/02	0.249	11/03				3.874	3.874
Primary H/W Development (MWS)	WX	NAWCAD, Lakehurst		0.135	11/02						0.135	
Systems Engineering	WX	NAWCAD, Lakehurst	45.612	3.955	11/02	3.851	11/03	2.877	11/04	Continuing	Continuing	
(MWS/CREI/VISUAL/AAG/ALRCS)												
Systems Engineering (VISUAL/MWS)	WX	NAWCAD, Patuxent River	0.307								0.307	
Systems Engineering (VISUAL)	WX	NSWC, Crane IN	1.800								1.800	
Subtotal Product Development			71.094	20.415		16.807		25.404		Continuing	Continuing	
Remarks: A portion of the FY03 AAG contract funding will be carried over to FY04, given the late FY03 TD contract award.												
Development Support												
Software Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
Studies & Analyses												
GFE												
Award Fees												
Subtotal Support												
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDTE&E, N / BA-5			0604512N Shipboard Aviation Systems			W2232 CV Launch & Recovery Systems						
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	WX	NAWCAD Lakehurst, NJ		0.920	11/02						0.920	
Operational Test & Evaluation	WX	NAWCAD Lakehurst, NJ				0.045	11/03				0.045	
AAG Award Fees	C/CPAF	General Atomics/Sunnyvale, CA		0.244	07/03	0.318	11/03				0.562	0.562
AAG Award Fees	C/CPAF	Northrop Grumman/San Diego, CA		0.488	07/03	0.636	11/03				1.124	1.124
AAG Award Fees	C/CPIF	TBD						2.917	11/04	8.335	11.252	11.252
Subtotal T&E				1.652		0.999		2.917		8.335	13.903	
Remarks:												
Program Management Support	RX	NAWCAD Patuxent Rv, MD		0.214	03/03	0.216	05/04	0.220	05/05	Continuing	Continuing	
Travel	WX	NAWCAD Patuxent Rv, MD		0.020	11/02	0.045	11/03	0.045	11/04	Continuing	Continuing	
Travel	WX	NAWCAD Lakehurst, NJ		0.080	11/02	0.081	11/03	0.045	11/04	Continuing	Continuing	
Subtotal Management				0.314		0.342		0.310		Continuing	Continuing	
Remarks:												
Total Cost			71.094	22.380		18.148		28.631		Continuing	Continuing	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 24)

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

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Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 10 of 24)

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EXHIBIT R4, Schedule Profile																				DATE: February 2004									
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME														
RDT&E, N /					0604512N Shipboard Aviation Systems										W2232 CV Launch & Recovery Systems														
Fiscal Year	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	
VISUAL Acquisition Milestones																													
Prototype Phase	System Development & Demonstration																												
System Development																													
EDM Delivery																													
Software (delivered with system)																													
VISUAL Test & Evaluation Milestones																													
Development Test																													
Operational Test																													
VISUAL Production Milestones																													
FY04 Option																													
FY05 Option																													
FY06 Option																													
FY07 Option																													
FY08 Option																													
FY09 Option																													
Deliveries																													

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

Exhibit R-4a, Schedule Detail
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Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 12 of 24)

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME W9071 Aviation Shipboard Information Technology			
COST (\$ in Millions)		FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost		1.931	3.955					
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Navy unique project addresses the System Development and Demonstration (SDD) of all systems required to recover and launch Navy/Marine Corps aircraft (fixed/rotary wing and Vertical/Short Take-Off and Landing (VSTOL) operating aboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD) and aviation facility ships. This program is funded under SDD because it encompasses engineering development and demonstration of new end-items prior to production approval decision. This program includes concept exploration and system development and demonstration of shipboard aviation data management systems required to automate manual processes during aviation operations on board aircraft carriers under Project W9071: - (U) Shipboard Aviation Data Management System Initiative: This initiative will use state-of-the-art information technology and decision support systems to automate the current manual intensive process in collecting and distributing information to enable aviation operations on board aircraft carriers to be accomplished in a more efficient and effective manner.								

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Exhibit R-2a, RDTEN Project Justification
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(U) B. Accomplishments/Planned Program				
		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost		1.931	3.955	
RDT&E Articles Quantity				
Shipboard Aviation Information Technology Developed system demonstration of flight operations, flight deck, weapons, and ALRE maintenance management functions. Complete development of Flight Deck Management, Air Operations management, V2 Maintenance Management, and Weapons Information Systems Management applications. Define hardware and develop network to run all ADMACS applications. Design interfaces for all external interfaces. Install aboard aircraft carrier for evaluation.				

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(U) C. PROGRAM CHANGE SUMMARY:

	FY 2003	FY 2004	FY 2005
(U) Funding:			
Previous President's Budget:	1.956	0.000	
Current BES/President's Budget	1.931	3.955	
Total Adjustments	-0.025	3.955	0.000
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.045	
Congressional rescissions			
SBIR/STTR Transfer	-0.025		
Economic Assumptions			
Reprogrammings			
Sponsor/FMB/NAVAIR Adjustments		4.000	
Congressional increases			
Subtotal	-0.025	3.955	0.000

(U) Schedule:
Not Applicable

(U) Technical:
Not Applicable

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RDT&E, N / BA-5			0604512N Shipboard Aviation Systems			W9071 Aviation Shipboard Information Technology					
(U) D. OTHER PROGRAM FUNDING SUMMARY:											
<u>Line Item No. & Name</u>			<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	To <u>Complete</u>	Total <u>Cost</u>
Not Applicable											
(U) E. ACQUISITION STRATEGY:											
NAWCAD Lakehurst activity defined requirements and system architecture with engineering support from industry as required. FY03 strategy to develop prototype software architecture and prototype flight deck management applications. Follow on strategy to develop, test, and produce system will be determined upon identification of follow on funding. FY04 strategy to complete development of software architecture and prototype ADMACS applications, build prototype system, conduct lab test, install aboard ship for evaluation.											

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2004				
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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
Systems Engineering	WX	NAWCAD Lakehurst, NJ	1.710	1.124	01/03	2.455	12/03				5.289	
Systems Engineering	T&M	STV/M&T Joint Venture		0.807	06/03	1.500	02/04				2.307	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			1.710	1.931		3.955		0.000		0.000	7.596	
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:												

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APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-5			PROGRAM ELEMENT 0604512N Shipboard Aviation Systems				PROJECT NUMBER AND NAME W9071 Aviation Shipboard Information Technology					
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											0.000	
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	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			1.710	1.931		3.955		0.000		0.000	7.596	
Remarks:												

R-1 SHOPPING LIST - Item No. 111

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 18 of 24)

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems			PROJECT NUMBER AND NAME W9385 Machine Vision Confirmation of Launch Bar Engagement			
COST (\$ in Millions)			FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
Project Cost				1.483				
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Navy unique project addresses the System Development and Demonstration (SDD) of all systems required to recover and launch Navy/Marine Corps aircraft (fixed/rotary wing and Vertical/Short Take-Off and Landing (VSTOL) operating aboard aircraft carriers (CV/CVN), amphibious assault ships (LHA/LHD) and aviation facility ships. This program is funded under SDD because it encompasses engineering development and demonstration of new end-items prior to production approval decision. This program includes concept exploration and system development and demonstration of shipboard aviation data management systems required to automate manual processes during aviation operations on board aircraft carriers under Project W9385: - (U) Machine Vision Confirmation of Launch Bar Engagement: This SBIR will be used for the testing of a shipboard demo. This would include a full system on one catapult for a period of at least six months. Reliability testing would also be conducted prior to installation. This is a follow-on to an initial Phase II SBIR project entitled "Autonomous Launch Bar Seating Check Machine Vision Confirmation of Launch Bar Engagement".								

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2004	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W9385 Machine Vision Confirmation of Launch Bar Engagement		
(U) B. Accomplishments/Planned Program				
		FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost			1.483	
RDT&E Articles Quantity				
Refine prototype developed in Phase II. Complete development of the alignment software to automatically align the camera should the remote head be removed for maintenance. Conduct shipboard demo to include: properly installed hook-up lights, a full port and starboard system, alignment software, proof of mechanical and electronic bypass and subjecting the system to environmental testing.				

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems	PROJECT NUMBER AND NAME W9385 Machine Vision Confirmation of Launch Bar Engagement

(U) C. PROGRAM CHANGE SUMMARY:

	FY 2003	FY 2004	FY 2005
(U) Funding:			
Previous President's Budget:		0.000	
Current BES/President's Budget		1.483	
Total Adjustments	0.000	1.483	0.000
Summary of Adjustments			
Congressional program reductions			
Congressional undistributed reductions		-0.017	
Congressional rescissions			
SBIR/STTR Transfer			
Economic Assumptions			
Reprogrammings			
Sponsor/FMB/NAVAIR Adjustments			
Congressional increases		1.500	
Subtotal	0.000	1.483	0.000

(U) Schedule:
Not Applicable

(U) Technical:
Not Applicable

R-1 SHOPPING LIST - Item No. 111

Exhibit R-2a, RDTEEN Project Justification
(Exhibit R-2a, page 21 of 24)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2004			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604512N Shipboard Aviation Systems		PROJECT NUMBER AND NAME W9385 Machine Vision Confirmation of Launch Bar Engagement					
(U) D. OTHER PROGRAM FUNDING SUMMARY:									
<u>Line Item No. & Name</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	To <u>Complete</u>	Total <u>Cost</u>
Not Applicable									
(U) E. ACQUISITION STRATEGY:									
Award contract to MSE to complete prototype hardware and software developed in the Phase II effort and conduct a shipboard demonstration.									

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2004				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604512N Shipboard Aviation Systems			W9385 Machine Vision Confirmation of Launch Bar Engagement						
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
Systems Engineering	TBD	MSE Tech App/Butte, MT				1.483	05/04				1.483	1.483
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	0.000		1.483		0.000		0.000	1.483	
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:												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2004		
APPROPRIATION/BUDGET ACTIVITY RDTE&E, N / BA-5			PROGRAM ELEMENT 0604512N Shipboard Aviation Systems				PROJECT NUMBER AND NAME W9385 Machine Vision Confirmation of Launch Bar Engagement					
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											0.000	
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	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	0.000		1.483		0.000		0.000	1.483	
Remarks:												

R-1 SHOPPING LIST - Item No. 111

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Exhibit R-2a, RDTE Project Justification
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