CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification						DATE:			
							February 2	006	
APPROPRIATION/BUDGET ACTIVITY R-1 ITEM NOMENC				MENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION	N, NAVY / BA-5			0604784N/ Dis	stributed Surve	illance System			
									Total
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY2011	Cost to Complete	Program
Total PE Cost	17.462	55.842	58.273	34.234	35.312	40.534	21.519	Continuing	Continuing
1300 Advanced Deployable System (ADS)	17.462	53.442	58.273	34.234	35.312	40.534	21.519	Continuing	Continuing
9999 Undistributed RDT&EN Congressional Adds	0.000	2.400	0.000	0.000	0.000	0.000	0.000		
RDT&E Articles Qty (SS)		4	12	4					20
RDT&E Articles Qty (ISS)			1						1
RDT&E Articles Qty (TIS)		0	3	2					5
RDT&E Articles Qty (ARS)		1	1						2

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

The Advanced Deployable System (ADS) is a rapidly deployable, passive acoustic undersea surveillance system that, as the first Increment of development, will be deployed as a module of the Anti-Submarine Warfare (ASW) mission package for the Littoral Combat Ship (LCS). This first effort of the Spiral development program is designated Increment Alpha. It will be deployed and monitored by the LCS in shallow littoral waters to provide the Joint Task Force Commander (JTFC) with data that permits rapid integration with other sources to generate an accurate and reliable maritime tactical picture. ADS is designed to detect, track and report modern diesel electric and nuclear submarines, as well as provide the capability to track surface ships and potentially detect mine-laying activities. The second development effort, designated Increment Bravo, will provide the capability to deploy ADS from an alternate platform. Increment B Development and testing will occur in FY09-FY11. For all increments, ADS consists of four subsystems:

- The SS consisting of four acoustic arrays, small diameter fiber optic (SDFO) cable which connects the arrays, and a pressure vessel (PV). The PV contains a battery power supply, electronics, and lasers. The lasers serve to optically telemeter the hydrophone data to the in-water Tactical Information System (TIS) via SDFO cable.
- The TIS consisting of a self-powered buoy, housing computers (to partially process and compress the SS data stream), a radio and an antenna to transmit to the data to a supporting LCS. The TIS and SS together compose a string.
- An Analysis and Reporting Subsystem (ARS) aboard the LCS, where the received information data stream is analyzed and target information is reported to the LCS command and control center for further distribution over tactical C4I nets as appropriate. Also part of the ARS is the Integrated Undersea Surveillance System (IUSS) Mission Planning tool which provides operators aboard the LCS and support personnel ashore the means to rapidly build an ADS installation plan. This effort builds on work begun in the ADS program (PE 0604784N) to automate array lay down and cable routing plans. Functional requirements for Fixed Surveillance Systems (FSS), ADS and Surveillance Towed Array Sensor (SURTASS) will be combined and prioritized with fleet input in the Mission Planner development. The software will be developed as a Global Command and Control System Maritime (GCCS-M) segment that is at least level 6 DII-COE compliant.
 - An Installation Support Subsystem (ISS) for rapid deployment of the SS and TIS by the LCS.

FY 06 Congressional Adds: Project 9999 - Funds two congressional adds: Centurion and SureTrak

(U) JUSTIFICATION FOR BUDGET ACTIVITY:

TECHNOLOGY DEVELOPMENT (TD) AND SYSTEM DEVELOPMENT DEMONSTRATION (SDD)

This program is funded under technology development because it encompasses development of new end-items. Milestone B approved November 2005.

R-1 SHOPPING LIST - Item No. 132

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification (Exhibit R-2, page 1 of 11)

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification			DATE:
			February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND N	IAME
RDT&E, N / BA -5	0604784N/ Distributed Surveillance System	1300/ ADVANCED DEPLOY	ABLE SYSTEM (ADS)

(U) B. Accomplishments/Planned Program

ANALYSIS AND REPORTING SYSTEM (ARS)	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	6.117	9.878	10.674
RDT&E Articles Quantity		1	1

FY05 (\$6.117) Developed a reduced power processing capability to run in-buoy processing software. Delivered the in-buoy processor and Workstation displays for ADS's Capability Demonstration. Conducted the ARS Preliminary Design Review (PDR) and initiated detailed design. Supported System Engineering and Integrated Test and Evaluation (IT&E). The Mission Planning Plus Up was used to build array laydown planner and command & control mobilization processor for use on LCS. Developed laydown plans in support of user requirements and environmental input requirements definition.

FY06 (\$9.878) Develop the detailed design for the LCS shipboard C4I, data processing, display, in buoy processor, and installation planning necessary for the ARS of the ADS Mission Module. Conduct development of the segments of the ARS of the ADS Mission Module. Procure hardware for first ARS test article to support the consolidated LCS Mission Package Computer Environment Integration Lab. Prepare for the System Critical Design Review (CDR).

FY07 (\$10.674) Conduct System Critical Design Review (CDR) and Design Verification Tests (DVT's) for the segments of the ARS of the ADS Mission Module. Integrate all ARS segments for subsystem testing and then participate in the ADS System Integration test. Procure hardware for second ARS test article

INSTALLATION SUPPORT SUBSYSTEM (ISS)	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	2.621	14.883	15.695
RDT&E Articles Quantity			1

FY05 (\$2.621) Completed risk reduction testing of the ISS. Conducted the ISS PDR and initiate detailed design. Network Centric Plus Up was used to build and demonstrate sensor deployment alternative methods. Conducted technology maturation testing of the array Dispenser Transport Vehicle (DTV) and Array Installation Module (AIM).

FY06 (\$14.883) Complete detailed design and conduct the segment Detailed Design Review. Conduct necessary risk reduction testing. Prepare for the System CDR. Initiate segment fabrication and conduct segment integration testing.

FY07 (\$15.695) Conduct System CDR. Continue segment fabrication and integration testing. Procure hardware for ISS test article.

R-1 SHOPPING LIST - Item No. 132

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification (Exhibit R-2, page 2 of 11)

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification			DATE:
			February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND N	IAME
RDT&E, N / BA-5	0604784N/ Distributed Surveillance System	1300/ ADVANCED DEPLOY	(ABLE SYSTEM (ADS)
(U) B. Accomplishments/Planned Program			

TEST AND EVALUATION (T&E)	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	0.303	0.800	1.168
RDT&E Articles Quantity			

FY05 (\$0.303) Conducted TASWEX-04 Exercise demonstrating array performance against a modern diesel electric submarine. Coordinated with COMOPTEVFOR in the conduct of a Development Test Assisted with an early operational assessment.

FY06 (\$0.789) Conduct a series of Design Verification Tests/Developmental Tests (DVT/DT) during SDD Phase to facilitate and validate system design, minimize risk, and verify the accomplishment of remaining technical performance requirements.

FY07 (\$1.168) Coordinate test planning for FY08 System Integration Test. Following a favorable Design Readiness Review, DT will focus on the demonstration of system integration with final SIT aboard a surrogate LCS to validate system end-to-end performance.

TACTICAL INTERFACE SYSTEM (TIS)	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	2.074	20.018	21.274
RDT&E Articles Quantity		0	3

FY05 (\$2.074) Modified the communication link's radio to lower system power requirements. Continued interface development and testing between radio, processor, power supply and buoy. Recommended potential technologies into the at-sea test program. Supported System Engineering. Started spectrum certification process. Conducted technology maturation testing of the wireless link.

FY06 (\$20.029) Design, breadboard, prototype and Design Verification Test (DVT) of the entire subsystem (RF radio, buoy, power, mooring, and anchor.) Develop encryption/decryption solution to satisfy security requirement. Continue spectrum certification process. Begin fabrication of first test article for developmental test program. Prepare for System CDR.

FY07 (\$21,274) Conduct System CDR. Fabrication of test articles to support SIT, TECHEVAL, and OPEVAL. Finalize spectrum certification approval. Support Test and Evaluation IPT.

CENTURION	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	3.824	0.000	0.000
RDT&E Articles Quantity			

FY05 (\$3.824) Congressional Plus Up used to build and integrate new sensors into Homeland Defense port surveillance test bed in Port Hueneme area developed in FY 04 and conducted additional tests.

R-1 SHOPPING LIST - Item No. 132

UNCLASSIFIED

Exhibit R-2, RDTEN Budget Item Justification (Exhibit R-2, page 3 of 11)

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification				DATE:	
				February 2	006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUM	IBER AND NAME	PROJECT NUMBER AND N	AME	
RDT&E, N / BA-5	0604784N/ Distributed Surve	eillance System	1300/ ADVANCED DEPLOY	ABLE SYSTEM (ADS)	
U) B. Accomplishments/Planned Program				-	1
SENSOR SUBSYSTEM (SS)		FY05	FY06	FY07	
Accomplishments/Effort/Subtotal Cost		1.077	6.231	7.249	
RDT&E Articles Quantity			4	12	Ī

FY05 (\$1.077) Maintained support during the ADS at-sea testing and refurbished test articles for additional testing. Planned for the resolution of any discrepancies identified during testing. Finalized inputs to the technical data package. Supported Milestone B and prepared for production of hardware in the SDD phase.

FY06 (\$6.231)Trade studies to reduce system life cycle cost based on new requirement and LCS centric concept: low-cost cable, lighter and less expensive pressure vessels, cheaper array unit cost are a few high-impact candidates. Begin manufacturing test articles to support SIT, TECHEVAL, OPEVAL. Prepare for System CDR.

FY07 (\$7.249) Conduct System CDR. Continue manufacturing test articles to support SIT, TECHEVAL, OPEVAL. Support T&E Integrated Product Team (IPT).

SYSTEM ENGINEERING PROGRAM MANAGEMENT (SEPM)	FY05	FY06	FY07
Accomplishments/Effort/Subtotal Cost	1.446	1.632	2.213
RDT&E Articles Quantity			

FY05 (\$1.446) Continued Project Management support for the ADS project office. Monitored government and contractor technical, schedule, and cost performance. Conducted at sea capability demonstration. Continued development of documentation required for Milestone B decision. Developed contractual and technical elements in support of system development and integration contract award. Completed the System Functional Architecture, Item Performance specifications, and Equipment and Software Subsystem-level Design. Conducted cost trade off studies, analyzed and tracked technical performance measures, perform configuration and interface management, held technical reviews and audits, conducted risk management. Continued to coordinate with LCS Mission Module and Ship program offices to define the Interface Requirements Document.

FY06 (\$1.632) Continue Project Management support for the ADS project office. Monitor government and contractor technical, schedule, and cost performance. Prepare for the System CDR and begin engineering development models and the associated component testing. Continue to conduct cost trade off studies, analyze and track technical performance measures, perform configuration and interface management, hold technical reviews and audits, conduct risk management. Continue to coordinate with LCS Mission Module and Ship program offices to refine the Interface Control Document. Hold Milestone B decision review with the Milestone Decision Authority (MDA) and gain approval to award SDD contract.

FY07 (\$2.213) Continue Project Management support for the ADS project office. Monitor government and contractor technical, schedule, and cost performance. Witness subsystem integration testing and conduct system integration testing development models. Continue to conduct cost trade off studies, analyze and track technical performance measures, perform configuration and interface management, hold technical reviews and audits, conduct risk management. Conduct System CDR. Initiate preparations for Milestone C decision review in FY08. Continue to coordinate with LCS Mission Module and Ship program offices to maintain the Interface Control Document.

R-1 SHOPPING LIST - Item No. 132

CLASSIFICATION:

XHIBIT R-2, RDT&E Project Justification				[DATE:
	IDDOODAN ELEMENTANIMADED AND MANE	los	10 IEOT 1 II II II	ED 4115 114	February 2006
PPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PF	ROJECT NUMB	ER AND NA	ME
DT&E, N / BA-5	0604784N/ Distributed Surveillance System	13	00/ ADVANCEI	D DEPLOYA	BLE SYSTEM (ADS)
(U) C. PROGRAM CHANGE SUMMARY:					
FY06 President's Budget Submit		17.416	54.256	57.974	
FY07 President's Budget	_	17.462	53.442	58.273	
Total Adjustments		0.046	-0.814	0.299	
Summary of Adjustments					
Other General Provisions			-0.247		
Programmatic changes		0.046		0.299	
Recissions		0.046	-0.567 -0.814	0.299	
		0.040	-0.014	0.299	
(U) Schedule:					
Milestone B approved 2 Nov 05. Schedule been adjusted to reflect Milestone B Acqui	e for CDR adjusted to 4Q FY06 as a risk reduction effort, sition Program Baseline.	and all subseq	uent test event	s (SIT, TECH	HEVAL and OPEVAL) have
(U) Technical: - N/A					

R-1 SHOPPING LIST - Item No. 132

CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification			DATE:
			February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604784N/ Distributed Surveillance System	1300/ ADVANCED DEPLOYABLE SYST	EM (ADS)

(U) D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To <u>Complete</u>	Total <u>Cost</u>	
LCS OPN BLI 1600	-	-	48.100	77.200	75.000	40.700	Continuing	Continuing	
ADS OPN BLI 2221	-	-	-	-		16.279	Continuing	Continuing	
LCS RDT&E PE0603581N (Mission Modules)	6.770	4.950	3.770	-	-	-	-	15.490	

⁻ ADS procurement scheduled to be funded by LCS OPN Program. Procurement quantities as follows: FY08 - 1 ADS System; FY09 - 2 ADS Systems; FY10 - 2 ADS Systems; FY11 - 1 ADS System - As part of the LCS ASW Mission Module (MM), ADS is receiving RDT&E funds from LCS MM Program. Funds provided to augment ADS Systems Engineering efforts in connection with ADS integration and installation with the LCS.

(U) E. ACQUISITION STRATEGY(AS):

Acquisition Strategy (Approved by ASN/RDA Apr04) addresses redirected program under review by Navy Leadership. Strategy takes ADS to sole source contracting strategy, and the contract was awarded SEP 04.

		FY05	FY06	FY07
PROGRAM MILESTONES			MILESTONE B	
ENGINEERING MILESTONES		PRELIMINARY DESIGN REVIEW (PDR), INTEGRATED BASELINE REVIEW (IBR)		CRITICAL DESIGN REVIEW (CDR)
T&E MILESTONES		TASWEX 04; ARRAY DEPLOYMENT FROM AN ARRAY MODULE	DEVELOPMENTAL TEST EVENTS	DEVELOPMENTAL TEST EVENTS
CONTRACT MILESTONES			SYSTEM DEVELOPMENT AND DEMONSTRATION (SDD) OPTION FUNDED	CONTINUE SDD

⁻ ADS OPN for FY11 provides for the second increment of ADS development effort (clandestine deployment).

CLASSIFICATION:

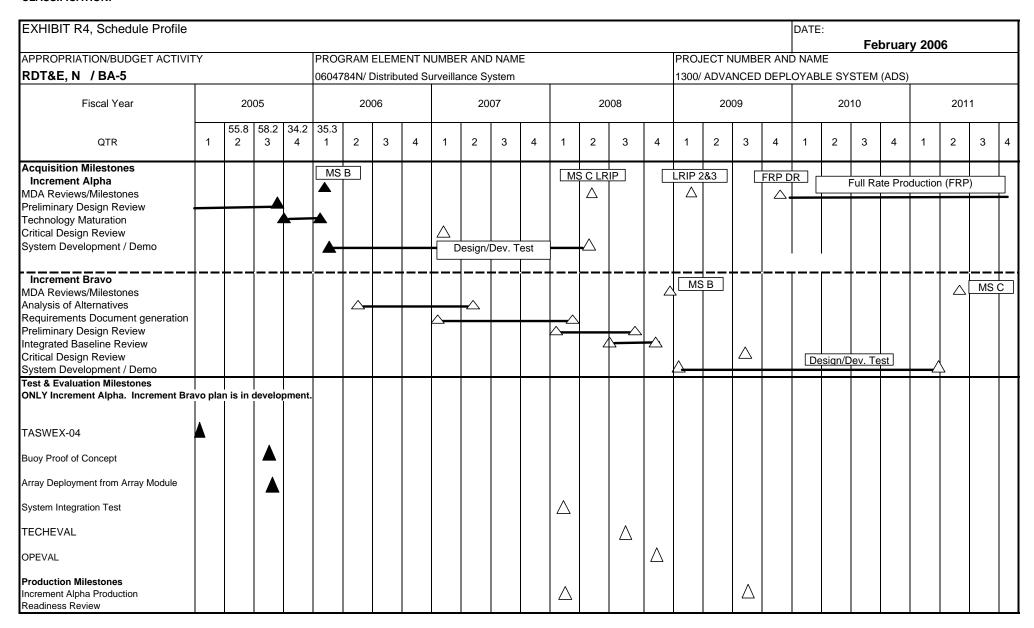
											DATE:			
Exhibit R-3 Cost Analysis (page												Febru	uary 2006	
APPROPRIATION/BUDGET ACTIVI	TY	PROGRAM E	LEMENT			PROJEC	NUMBE	R AND NAI	ИE					•
RDT&E, N / BA 5			stributed Surve	illance Sys	stem	1300/ AD		DEPLOYA		EM (ADS)		_		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to	Total Cost	Target Value of Contract
Prime Mission Product Development		LMFS MANASSAS, VA	89.334			0031	Date	0031	Date	0031	Date	Complete	89.334	
Prime Mission Product Development	C/CPAF	LMFS MANASSAS, VA	52.824										52.824	52.824
Prime Mission Product Development	CPAF/IF	LMFS MANASSAS, VA	8.000			3.891	04/05	41.708	11/05	46.799	11/06	Continuing	Continuing	g Continuing
Government Engineering Support	WX	Various	53.013			2.243	11/04	6.330	11/05	2.337	11/06	Continuing	Continuing	
Engineering Support Services	SS/CPFF	UNIVERSITY LABS	15.409			1.544	02/05	2.085	12/05	2.650	11/06	Continuing	Continuing	
Software Development	C/CPFF	ORINCON SAN DIEGO, CA	20.537			2.835	05/05						23.372	
Prime Mission Product Development	BAA	HARRIS/ LM PNW	2.360										2.360	2.360
Other Contracts			17.712			4.633	02/05	0.151	12/05				22.496	22.496
Other Activities			19.037			0.170	11/04						19.207	
Subtotal Product Development			278.226			15.316		50.274	Į.	51.786		Continuing	Continuing	Continuing
Contract Engineering Support	C/CPFF	AMRON SAN DIEGO ,CA	8.040										8.040	8.040
Government Engineering Support	WX	Various	9.758			0.956	11/04	0.930	11/05	0.980	11/06	Continuing	Continuing	g Continuing
Engineering Support Services	SS/CPFF	UNIVERSITY LABS	0.390			0.000	11/04	0.300	12/05			Continuing	Continuin	g Continuing
PMTO Contracts			31.363			0.000	11/04						31.363	31.363
Other Activities			6.100			0.289	11/04	0.057	11/05	0.250	11/06		6.696	6.696
Subtotal Support			55.651			1.245		1.287	,	1.230		Continuing	Continuin	Continuing
Remarks:														
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CLASSIFICATION:

										DATE:				
Exhibit R-3 Cost Analysis (page	e 2)													
APPROPRIATION/BUDGET ACTIVIT		PROGRAM E	LEMENT			PROJECT N	NUMBER A	ND NAME				-		
RDT&E, N / BA 5		0604784N/ Di	istributed Survei	llance Systen	n	1300/ ADVANCED DEPLOYABLE SYSTEM (ADS)								
S .	Method	Performing Activity & Location	Total PY s Cost			FY 05	FY 05 Award Date	FY 06	FY 06 Award Date	FY 07	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation		OTHER CONTRACTS	7.625										7.625	7.625
Dev. and Operational Test and Eval.	WX	VARIOUS	18.196			0.115	11/04	0.670	11/05	2.000	11/06	Continuing	Continuing	Continuing
Dev. and Operational Test and Eval.		OTHER ACTIVITIES	4.778			0.008	11/04	0.130	11/05	0.170	11/06	Continuing	Continuing	
Dev. and Operational Test and Eval.	SS/CPFF	UNIVERSITY LABS	1.208			0.180	05/05	0.000	11/05	1.000	11/06	Continuing	Continuing	Continuing
Subtotal T&E			31.807			0.303		0.800		3.170		Continuing	Continuing	Continuing
Program Management Support	WX	VARIOUS	1.657			0.598	11/04	1.081	11/05	2.087	11/06	Continuing	Continuing	Continuing
Subtotal Management			1.657			0.598		1.081		2.087		Continuing	Continuing	Continuing
Remarks:														
Total Cost			367.341	0.000		17.462		53.442		58.273		Continuing	Continuing	Continuing
Remarks:														

R-1 SHOPPING LIST - Ite 132

CLASSIFICATION:



R-1 SHOPPING LIST - Item No.

132

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

CLASSIFICATION:

Exhibit R-4a, Schedule Detail DATE:									
Exhibit R-4a, Schedule Detail									
	February 2006								
APPROPRIATION/BUDGET ACTIVITY	MBER AND N								
RDT&E, N/ BA-5	CED DEPLOY	ABLE SYSTEM	I (ADS)						
Schedule Profile (Increment Alpha; Increment Bravo plan in developme	nt)	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	
SENSOR SUBSYSTEM									
EMD system Preliminary Design Review		4Q							
EMD system Critical Design Review				1Q					
EMD system SIT system manufacture					1Q				
EMD system Operational Testing					4Q				
INSTALLATION SUBSYSTEM									
EMD system Preliminary Design Review		4Q							
EMD system Critical Design Review				1Q					
EMD system SIT system manufacture				4Q					
EMD system Operational Testing					4Q				
TACTICAL INTERFACE									
EMD system Preliminary Design Review		4Q							
EMD system Critical Design Review				1Q					
EMD system SIT system manufacture				4Q					
EMD system Operational Testing					4Q				
ANALYSIS & REPORTING SUBSYSTEM									
EMD system Preliminary Design Review		4Q							
EMD system Critical Design Review				1Q					
EMD system manufacture to support LCS Integration Lab			4Q						
EMD system SIT system manufacture				4Q					
EMD system Operational Testing					4Q				
SYSTEM TESTS									
TASWEX-04		Q1							
System Integration Test					1Q				
TECHEVAL					3Q				
OPEVAL					4Q				
CONTRACT									
LRIP Systems					2Q	1Q			
FRP							1Q		

R-1 SHOPPING LIST - Item No.

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CLASSIFICATION:

EXHIBIT R-2, RDT&E Project Justification	DATE: February 2006						
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAM	IE PROJECT NUMBER AND I	NAME				
RDT&E, N /BA -5	&E, N / BA -5 0604784N/ Distributed Surveillance System 9999 Congressional Plus-U						
(U) B. Accomplishments/Planned Program Congressional Plus Up							
	5,400	T					
1300C	FY06						
Centurion	1.000						
Funding to complete development and testing of H							
runding to complete development and testing of n	omeiana Derense port surveillance test bed.						
	FY06						
9857N							
SureTrak	1.400						
Funds for research efforts in support of the SureTr	ak program.						

R-1 SHOPPING LIST - Item No. 132