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 0604307N/AEGIS COMBAT SYSTEM ENGINEERING			
COST ($ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	**320.187**	**340.426**	**205.733**	**208.048**	**217.746**	**217.286**	**230.800**	**206.056**
K1447/Surface Combatant Combat System	250.148	284.952	205.273	203.629	213.241	212.699	226.130	201.486
K1776/Surface Combatant Weapon System Mods	4.115	4.257	0.460	4.419	4.505	4.587	4.670	4.570
K3044/Solid State Spy Radar	0.000	6.328	0.000	0.000	0.000	0.000	0.000	0.000
K9064/AEGIS Operational Readiness	3.905	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K9065/Peripheral Consolidation	6.344	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K9066/AEGIS Tactical Display	6.875	17.994	0.000	0.000	0.000	0.000	0.000	0.000
K9067/Navy Area Theater Transfer	47.819	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K9068/Traveling Wave Tube Circuit	0.981	0.000	0.000	0.000	0.000	0.000	0.000	0.000
K9221/DDG-51 Optimized Manning	0.000	2.445	0.000	0.000	0.000	0.000	0.000	0.000
K9222/ Knowledge Projection	0.000	1.467	0.000	0.000	0.000	0.000	0.000	0.000
K9223/Silicon Carbide MMIC Production	0.000	1.467	0.000	0.000	0.000	0.000	0.000	0.000
K9225 S-Band Radar Research	0.000	21.516	0.000	0.000	0.000	0.000	0.000	0.000

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The AEGIS Combat System (ACS) provides immediate and effective capability to counter the current and expected air, surface, and sub-surface threats. Changes in the threat capability and advances in technology such as fiber optics, local area networks, and high performance computing require corresponding AEGIS Weapon System (AWS) and ACS changes. This program provides the ACS engineering and weapon system developments necessary for a continued increase in the capability of AEGIS Cruisers and Destroyers. In addition to developing and integrating improvements to the AWS, this program integrates combat capabilities developed in other Navy R&D programs into the ACS. Modifications of AWS computer programs must be made to integrate these capabilities into the ACS so that battle effectiveness and ACS performance will be retained against the evolving threat. Selected AWS and ACS upgrades will be backfitted into CG 47 Class and DDG 51 Class ships already in the Fleet, providing new key warfighting capability while reducing life cycle maintenance costs. In addition, with the advent of using Commercial Off-the-Shelf (COTS) equipment extensively throughout the combat system, COTS refresh development efforts will be necessary to pace the core Baseline development work and are included. This Program Element also introduces AEGIS Baseline 7 Phase II Open Architecture (OA) effort, including rearchitected computer programs, to the AEGIS fleet. Baseline 7 Phase II positions the AEGIS fleet for maximum warfighting improvements and life cycle support benefit and produces a system, which is considerably less difficult to maintain and modernize and mitigates the cost of inevitable required and repetitive technology refresh.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2003**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K1447/K9065/K9066/K9067Surface Combatant Combat System			
COST ($ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**311.186**	**302.946**	**205.273**	**203.629**	**213.241**	**212.699**	**226.130**	**201.486**
RDT&E Articles Qty	**Not Applicable**							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This program provides Cruiser and Destroyer ACS upgrades and integrates new equipment and systems to pace the threat and capture advances in technology. Examples of captured advanced technologies are: fiber optics, distributed architecture, and high performance computing, all of which require corresponding AWS and ACS changes. ACS is upgraded in Baselines. Baseline 2 (CG 52-58) consists of the Vertical Launching System, TOMAHAWK Weapon System, and Anti-Submarine Warfare upgrades. Baseline 3 (CG 59-64) includes the AN/SPY-1B Radar and AN/UYQ-21 consoles. Baseline 4 (CG 65-73) integrates the AN/UYK-43/44 computers with superset computer programs developed for the DDG 51. Baseline 5 was introduced in FY 1992 ships and includes the Joint Tactical Information Distribution System (JTIDS) Command and Control Processor, Tactical Data Information Link 16, Combat Direction Finding, Tactical Data Information Exchange System, AN/SLQ-32 (V)3 Active Electronic Counter Countermeasures, and AEGIS Extended Range (ER) Missile. Baseline 5 was developed in two steps (Phases): Phase I integrated AEGIS ER and supported the missile Initial Operational Capability; Phase III integrated system upgrades including Defensive Electronic Attack, Track Load Control algorithms, and Track Initiation Processor (integrated on 5.3, DDGs 68+); JTIDS and the OJ-663 color display Tactical Graphics Capability into the ACS. Baseline 6 Phase I supported OPEVAL of CEC in CGs 66 and 69 and was introduced in the DDG 51 class beginning with the last ship, DDG 79. Baseline 6 Phase III is planned for the first ship in FY 1997, DDG 85. Baseline 6 Phase III upgrades will include embarked helicopters, Fiber Optics as applied to Data Multiplexing (FODMS), implementation of affordability initiatives, the Radar Set Controller Environmental Simulator (RSCES) and Battle Force Tactical Trainer (BFTT), Advanced Display System, Evolved SeaSparrow Missile (ESSM), Identification (ID) upgrades Phase I, Advanced TOMAHAWK Weapon System (ATWCS) Phase II, Fire Control System Upgrades, and the Joint Maritime Command Information System (JMCIS). Baseline 7 Phase I is planned for the third DDG 51 Class ship in FY 1998, DDG 91. Major Baseline 7 upgrades include but are not limited to AN/SPY-1D(V) Radar upgrade, COTS-based advanced computer processing and the Remote Mine Hunting System. The Cruiser Conversion program will upgrade cruisers with Land Attack, and Area Air Defense Commander (AADC) capabilities and other warfighting capabilities. Experiences aboard AEGIS ships and shore sites have shown that COTS equipment will require a nominal four year cyclical refresh (periodic replacement) plan. This is a fact of life. Currently, these refresh efforts are not "plug and play;" rather they require additional developmental efforts that will necessitate replacement of new components with updated operating systems, device drivers, and interfaces. COTS refresh efforts are required and have been funded for Baseline 7 Phase I, and two variants of 7 Phase IC (due to different radar configurations and COTS Refresh periods). Baseline 6 Phase IIIR has been replaced by Baseline 5.4, which provides the accelerated introduction of CEC integration on backfit DDGs and test activity necessary to field CEC on Baseline 5 DDGs (DDGs 51-78). Introduces AEGIS Baseline 7 Phase II Open Architecture (OA) effort, including rearchitected computer programs, to the AEGIS fleet. Baseline 7 Phase II positions the AEGIS fleet for maximum warfighting improvements and life cycle support benefit and produces a system, which is considerably less difficult to maintain and modernize and mitigates the cost of inevitable required and repetitive technology refresh.

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	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	K1447/K9065/K9066/K9067Surface Combatant Combat System

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	12.232	6.011	0.000	0.000
RDT&E Articles Quantity				

Accomplishments: Continued Baseline 6 Phase III development and prepared for ESSM Developmental Testing (DT)/Operational Testing (OT).

Planned: Complete the maturation of Baseline 6 Phase III computer program in support of ESSM DT/OT. Deliver final Quality Assured (QA) load in December 2002. Implement quality standard by reducing CPCR count and number of deficiency workarounds.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	20.000	17.000	0.000	0.000
RDT&E Articles Quantity				

Accomplishments: Initiated the development of Baseline 5.4. Conducted an Initial Design Review and a Final Design Review in order to define the interface design between CEC and a Baseline 5 DDG Combat System.

Planned: Begin coding and debugging efforts, Initiate integration and test effort for CEC integration culminating in a September 2003 IPR.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	56.470	56.056	0.000	0.000
RDT&E Articles Quantity				

Accomplishments: Continued with extensive Baseline 7 Phase I Engineering Test and Evaluation (ET&E) and Multi-Element Integration and Test (MEIT) at Combat Systems Engineering Development Site (CSEDS) and the Production Test Center (PTC). Completed first Acceptance Test Procedure (ATP) on DDG 91 equipment . Conducted engineering assessment of Baseline 7 Phase I capabilities. Delivered program to shipyards for first level testing in new construction ships.

Planned: Continue maturation of Baseline 7 Phase I in support of Land Based SPY-1D(V) DT/OT and DDG 91 ship building milestones. Conduct demonstration of Baseline 7 Phase I capabilities. Implement quality standard by reducing CPCR count and number of deficiency workarounds.

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	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	K1447/K9065/K9066/K9067Surface Combatant Combat System

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	29.000	20.588	17.374	13.000
RDT&E Articles Quantity				

Accomplishments: Analyzed and assessed candidate components to replace Diminishing Manufacturing Sources (DMS) equipment in Baseline 7 Phase I and recommended COTS equipment solution for Baseline 7 Phase I Refresh, to be introduced on DDG 103. Conducted equipment In Process Review (IPR) in order to make final selection. Initiated Design, Code, and Test efforts for Baseline 7 Phase I Refresh. Continue level of effort necessary for COTS selection for future baseline efforts (ie. Baseline 7 Phase II and Baseline 7 Phase IC Refresh).

Planned: Continue coding, debugging and testing of Baseline 7 Phase I COTS Refresh necessary for fielding DDGs 103-107. Conduct computer program IPR and Baseline 7 phase IR engineering

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost		24.000	27.290	53.580
RDT&E Articles Quantity				

Planned: Introduce AEGIS Baseline 7 Phase II Open Architecture (OA) effort, including rearchitected computer programs. Conduct software requirements review. Continue development of AEGIS baseline 7 Phase II Open Architecture (OA) effort, including rearchitecting SPY search and track. Continue conduct of software requirements review.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	63.353	80.364	74.210	47.733
RDT&E Articles Quantity				

Accomplishments: Continued development of Baseline 7 Phase IC computer program for the Cruiser Conversion Program which incorporates Land Attack capabilities into the Baseline 2 through 4 Cruisers. Conducted Preliminary Design Review (PDR) and In-process Review (IPR). Analyzed and assessed candidate components to replace DMS equipment with carefully selected components for Baseline 7 Phase IC COTS Refresh. Began SIGPRO integration.

Planned: Prepare for and conduct Critical Design Review for Baseline 7 Phase IC. Begin integration efforts for evolutionary warfighting capabilities. Continue SPY-1 D(V) Signal processor integration.

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	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	K1447/K9065/K9066/K9067Surface Combatant Combat System

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	6.344	0.000	0.000	0.000
RDT&E Articles Quantity				

Accomplishments: (FY02 Congressional Plus-up / K9065) Conducted systems engineering and development of direct replacements for AWS peripheral sub-systems, sub-assemblies, and equipment no longer in production.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	6.875	17.944	0.000	0.000
RDT&E Articles Quantity				

Accomplishments: (FY02 Congressional Plus-up / K9066) As a risk mitigator in the field of Human Systems Interface (HSI) in Baseline 7 Phase II, conducted AEGIS Tactical Display Upgrade efforts.

Planned: (FY03 Congressional Plus-up / K9066) As a risk mitigator in the field of Human Systems Interface (HSI), in Baseline 7 Phase II, will conduct AEGIS Tactical Display Upgrade efforts.

	FY 02*	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	47.819	35.500	0.000	0.000
RDT&E Articles Quantity				

Accomplishments: Navy Area Theater Transfer to the Navy to disable Area TBMD code, carry out the orderly termination of Area TBMD program and conduct those efforts necessary to complete Baseline 6 Phase III and Baseline 7 Phase I computer program development.

Planned: Efforts include the update of documentation including revised technical specifications, training manuals, and curriculum. Continued engineering and ship waterfront integration support and maintain necessary infrastructure including site operations. Conduct regression testing of Baseline 6 Phase III and Baseline 7 Phase I to verify and validate AAW performance after disabling TBMD code.

*K9067 Navy Area Theater Transfer

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	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	K1447/K9065/K9066/K9067Surface Combatant Combat System

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	23.850	19.220	26.627	28.488
RDT&E Articles Quantity				

Accomplishments/Planned: Continued to provide the RDT&E share of operations and maintenance of the Combat System Engineering Development Site(CSEDs), Program Generation Center, Computer Program Test Site, and Land Based Test Site.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	19.096	17.018	18.149	20.405
RDT&E Articles Quantity				

Accomplishments./Planned: Provided funds for labs and field activities to support forward fit baseline upgrade in order to conduct engineering and scientific studies and analysis to minimize the risk in the introduction of increased warfighting capability including CEC and ESSM. Studies produced by the Applied Physics Lab and the NSWC-DD ensure effective introduction of COTS. NSWC-DD personnel also provide on site technical support at contractor facilities during development, testing, and evaluation of upgrades to the ACS.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost	26.147	5.145	4.323	3.323
RDT&E Articles Quantity				

Accomplishments: Successfully completed transition of knowledge from JHU/APL to Prime Contractor, GDAIS.

Planned: Working toward achieving Validation, Verification & Acceptance (VV&A) and Joint Acceptance through Open Architecture. AADC Capability will continue to be incorporated into the Cruiser Conversion Program.

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	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	K1447/K9065/K9066/K9067Surface Combatant Combat System

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost		4.100	8.300	1.100
RDT&E Articles Quantity				

Planned: Provides the initial and continuation of funds necessary to allow for the implementation and of the SIAP Blk 0 correlation/development Interface Change Proposal (ICP) into AEGIS Baselines.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost			27.000	34.000
RDT&E Articles Quantity				

Planned: Support AWS Baseline Replan initiatives. Initiatives include capture of high priority CPCR fixes from previous baselines into Baseline 7 Phase IC and Baseline 7 Phase IR, NSWC-DD test requirements, and SPY-1D(V) Techeval/Opeval support .

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Efforts/Subtotal Cost			2.000	2.000
RDT&E Articles Quantity				

Planned: Begin CIWS Blk IB AAW mode integration in Baseline 7 Phase IR targeted for DDG 103. Complete CIWS BLK-1B integration in Baseline 7 Phase IR targeted for DDG 103.

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	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	K1447/K9065/K9066/K9067Surface Combatant Combat System

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)	317.407	291.425	201.193	144.614
Current BES/President's Budget: (FY04/05 Pres Controls)	311.186	302.946	205.273	203.629
Total Adjustments	-6.221	11.521	4.080	59.015
Summary of Adjustments				
Congressional program reductions				
Congressional Increase		18.400		
Congressional undistributed reductions				
Congressional rescissions				
SBIR/STTR Transfer				
Economic Assumptions	-2.917	-6.879	-6.432	-6.385
Reprogrammings	3.502			
Programmatic Adjustments			10.512	65.400
SBIR	-6.806			
Subtotal	-6.221	11.521	4.080	59.015

Schedule:

Open Architecture funding profile supports fielding in FY12.

Technical:

1) Baseline 6 Phase III Refresh has been replaced by Baseline 5.4 which is now the enabler for Cooperative Engagement Capabilities (CEC) integration on backfit DDGs (DDG 51-78).
2) AWS Baseline Replan funding includes:
   A) Increased focus in Baseline 6 Phase III, Baseline 7 Phase I and Baseline 7 Phase IC allowing capture of high priority Computer Program Change Requests (CPCRs) fixes from previous baselines
   B) SPY-1D(V) Development Test (DT)/Operational Test (OT) and Techeval/Opeval support and CPCR capture into Baseline 7 Phase I.
   C) Naval Surface Warfare Center - Dahlgren Division (NSWC-DD) Baseline 6 Phase III and Baseline 7 Phase I 2nd test team requirements.

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	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	K1447/K9065/K9066/K9067Surface Combatant Combat System

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
SCN LI2122 - DDG 51*	3227.285	2668.076	3198.311	3440.605	193.635	292.294				Cont.
SCN LI2020 - CG Conversion*			194.44	439.033	469.17	447.437	679.381	691.534	Cont.	
OPN LI5246 - AEGIS Supt. Eqp	154.107	158.04	105.227	105.205	104.708	105.291	109.406	106.121	Cont.	Cont.
RDT&E,N 0603382N - Advanced Combat Sys	3.111	3.276	3.394	3.346	1.918	0.981	0.985	0.999	Cont.	Cont.

* TOA excludes outfitting and post delivery.

E. ACQUISITION STRATEGY:

Combat System Improvements are implemented in Baselines as described in the project mission statement. In FY 1998, Lockheed Martin was awarded a five year omnibus contract (sole source) to develop and integrate combat system improvements, which will fund all remaining AEGIS Baseline Upgrade Development efforts. After the baseline has been completed and tested, the computer program and associated equipment are delivered to the new construction shipbuilders where the program and equipment are installed and tested along with all other elements of the shipboard combat system and associated combat support systems. The computer program is a GFE deliverable to the Production Test Center for equipment test and check out.

F. MAJOR PERFORMERS:

Lockheed Martin, Moorestown, NJ (Combat System Design Agent/Prime Contractor) - 4/98
NSWC/DD, Dahlgren, VA (Lifetime Support Engineering Agent)

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2003**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604307N/AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K1447/K9065/K9066/K9067Surface Combatant Combat System						
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	SS/CPAF	Lockheed, Moorestown, NJ	690.226	209.126	01/03	138.372	01/04	137.276	01/05	Cont.	Cont.	
Systems Engineering	SS/CPFF	APL, Baltimore MD	26.607	1.206	10/02	0.880	10/03	0.873	10/04	Cont.	Cont.	
Systems Engineering	WR/RCP	NSWC, Dahlgren VA	74.957	34.084	na	24.881	na	24.682	na	Cont.	Cont.	
Systems Engineering	BPA	PCI, VA Beach, VA	7.950	3.444	10/02	2.514	10/03	2.494	10/04	Cont.	Cont.	
Systems Engineering	WR	NSWC, PHD CA	26.600	3.434	11/02	2.507	11/03	2.487	11/04	Cont.	Cont.	
Systems Engineering	WR/RCP	NWAS, Corona CA	4.053	2.270	11/02	1.657	11/03	1.644	11/04	Cont.	Cont.	
Systems Engineering	SS/CPAF	Litton	0.997	0.000	na	0.000	na	0.000	na	Cont.	Cont.	
Systems Engineering	SS/CPAF	Boeing	0.990	0.000	na	0.000	na	0.000	na	Cont.	Cont.	
Systems Engineering	SS/CPAF	General Dynamics	32.399	1.092	06/03	0.797	06/04	0.791	06/05	Cont.	Cont.	
Systems Engineering	WR	SPAWAR	3.925	0.970	11/02	0.708	11/03	0.702	11/04	Cont.	Cont.	
Systems Engineering	CPFF	Techmatics	2.000	0.000	na	0.000	na	0.000	na	Cont.	Cont.	
Systems Engineering	WR/RCP	Miscellaneous	31.797	1.725	various	2.657	na	2.636	na	Cont.	Cont.	
Systems Engineering	WR/RCP	Dam Neck	6.443	0.000	various	0.000	various	0.000	various	Cont.	Cont.	
Award Fees	SS/CPAF	Lockheed, Moorestown, NJ	93.865	28.231	07/03	19.109	07/04	18.944	07/05	Cont.	Cont.	
Award Fees	SS/CPAF	BAE Systems, Rockville, MD	0.580	0.000	na	0.000	na	0.000	na	Cont.	Cont.	
Award Fees	SS/CPAF	PCI, VA Beach, VA	0.625	0.000	na	0.000	03/04	0.000	03/05	Cont.	Cont.	
Award Fees	SS/CPAF	General Dynamics	3.600	0.121	06/03	0.000	06/04	0.000	06/05	Cont.	Cont.	
Award Fees	WR/RCP	Miscellaneous	2.790	0.000	various	0.000	various	0.000	various	Cont.	Cont.	
Subtotal Product Development			1010.404	285.703		194.082		192.529		Cont.	Cont.	
Support	CPFF	APL, Baltimore MD	7.796	0.605	10/02	0.442	10/03	0.438	10/04	Cont.	Cont.	
Support	WR	NSWC, Pt. Hueneme, CA	4.501	0.507	11/02	0.370	11/03	0.367	11/04	Cont.	Cont.	
Support	WR	NSWC, Dahlgren VA	2.667	0.060	na	0.044	na	0.043	na	Cont.	Cont.	
Support	WR/RCP	Miscellaneous	6.509	2.725	various	1.989	various	1.973	various	Cont.	Cont.	
Subtotal Support			21.473	3.897		2.845		2.821		Cont.	Cont.	

Remarks:

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2003**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604307N/AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K1447/K9065/K9066/K9067Surface Combatant Combat System						
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
Test and Evaluation	SS/CPAF	Lockheed, Moorestown, NJ	16.322	3.300	07/03	2.409	07/04	2.390	07/05	Cont.	Cont.	
Test and Evaluation	WR	NSWC, Pt. Hueneme, CA	6.084	0.756	11/02	0.552	11/03	0.547	11/04	Cont.	Cont.	
Test and Evaluation	CPFF	APL, Baltimore MD	3.500	0.000	10/02	0.000	10/03	0.000	10/04	Cont.	Cont.	
Test and Evaluation	WR/RCP	Miscellaneous	9.512	1.991	various	2.851	various	2.829	various	Cont.	Cont.	
										Cont.	Cont.	
										Cont.	Cont.	
										Cont.	Cont.	
Subtotal T&E			35.418	6.047		5.812		5.766		Cont.	Cont.	
Remarks:												
Program Management Support	BPA	BAE Systems, Rockville MD	26.600	6.750	10/02	2.133	10/03	2.115	10/04	Cont.	Cont.	
	WR/RCP	Miscellaneous	6.856	0.549	various	0.401	various	0.398	various	Cont.	Cont.	
										Cont.	Cont.	
										Cont.	Cont.	
										Cont.	Cont.	
SBIR Assessment										Cont.	Cont.	
Subtotal Management			33.456	7.299		2.534		2.513		Cont.	Cont.	
Remarks:												
Total Cost			1,100.751	302.946		205.273		203.629		Cont.	Cont.	
Remarks:												

R-1 SHOPPING LIST - Item No. 106

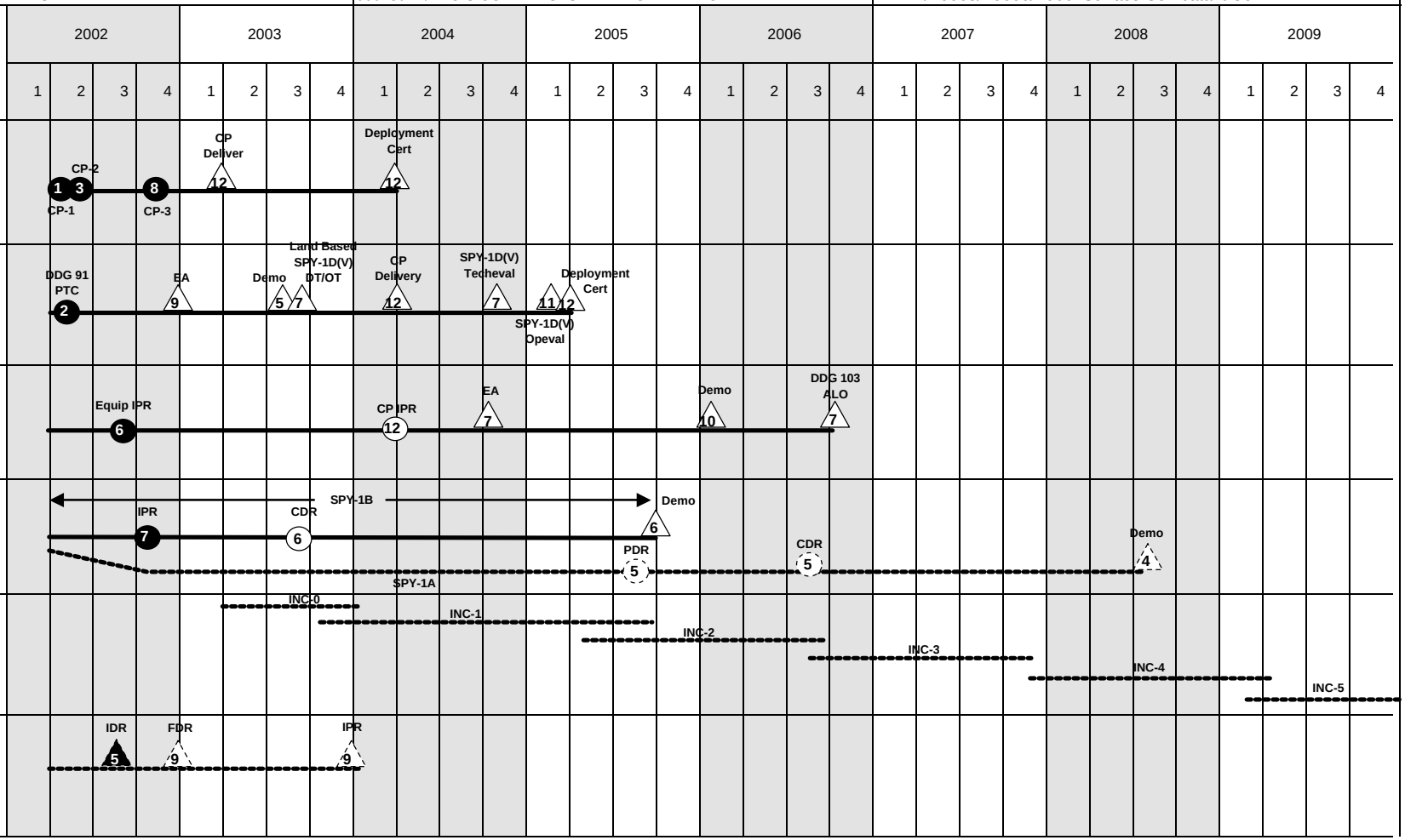
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2003**

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

PROGRAM ELEMENT NUMBER AND NAME: 0604307N/AEGIS COMBAT SYSTEM ENGINEERING

PROJECT NUMBER AND NAME: K1447/K9065/K9066/K9067Surface Combatant Com



R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

Exhibit R-4a, Schedule Detail					DATE: **February 2003**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604307N/AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K1447/K9065/K9066/K9067Surface Combatant Com			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
6 Phase III								
CP-1	2Q							
CP-2	2Q							
CP-3	4Q							
CP Delivery		1Q						
CP Deployment Cert			1Q					
7 Phase I								
DDG 91 PTC	2Q							
EA	4Q							
Demo		3Q						
Land Based SPY-1D(V) DT/OT		4Q						
CP Delivery			1Q					
SPY-1D(V) Techeval			4Q					
SPY-1D(V) Opeval				1Q				
Deployment Cert				1Q				
7 Phase I Refresh								
Equipment IPR	3Q							
EA			4Q					
CP IPR			1Q					
Demo					1Q			
DDG 103 ALO					4Q			
7 Phase I C								
IPR	4Q							
CDR		3Q						
Demo				3Q				
PDR				3Q				
CDR					3Q			
Demo							3Q	
7 Phase II								
Increment 0		2Q - 4Q	1Q					
Increment 1		4Q	1Q - 4Q	1Q - 3Q				
Increment 2				2Q - 4Q	1Q - 3Q			
Increment 3					3Q - 4Q	1Q - 4Q		
Increment 4						4Q	1Q - 4Q	1Q - 2Q
Increment 5								1Q - 4Q
5.4								
IDR	3Q							
FDR	4Q							
IPR		4Q						

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2003**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604307N/AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K1776/K9064/K9068/Surface Combatant Weapon Sys Mods			
COST ($ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**9.001**	**4.257**	**0.460**	**4.419**	**4.505**	**4.587**	**4.670**	**4.570**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This program provides for modifications to the AWS MK-7 to counter the threat as articulated in ONI System Threat Assessment Report, ONI-TA-012-99 dated Oct 1999 and subsequent updates. The modifications will be introduced into CG 47 Class and DDG 51 Class ships.

The increase in FY 2002 is due to congressional plus-ups (K9064/AEGIS Operational Readiness - $3.905M & K9068/Traveling Wave Tube Circuit - $.981M).

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	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	K1776/K9064/K9068/Surface Combatant Weapon Sys Mods

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Radar System Engineering Studies	2.887	3.396	0.460	3.335
RDT&E Articles Quantity				

Accomplishments/Planned: Perform system engineering studies to analyze threats and propose upgrades to meet threats. Perform system engineering studies to enable the AEGIS Weapon System to meet the evolving threat and improve performance in various environments. These studies will lead to detailed equipment designs and/or lead to proposed computer program upgrades. Current efforts include Automatic Adaptive Mode Control Operation (AAMCO) improvements, Enhanced Ultra Low Threat, Surface Search for AN/SPY-1D(V), and Dynamic Test Target Enhancements.

	FY 02	FY 03	FY 04	FY 05
Electronic Countermeasures Analysis (ECMA)	0.860	0.000	0.000	0.000
RDT&E Articles Quantity				

Accomplishments/Planned: Electronic Countermeasures Analysis (ECMA) upgrade effort and develop design package for transition to production. Incorporate COTS Adaptive Computing capability developed by DARPA on the System Level Applications of Adaptive Computing (SLAAC) Program and integrate into existing AN/SPY-1B/D Radar Systems. Application of this technology results in significant reduction in the number of modules used in the Electronic Countermeasure Analyzer Frame, addresses emerging DMS issues, and enables easier upgrade of the ECMA frame (via firmware download) to address emerging threats. This effort has been terminated because of the reduction in FY04 funds.

	FY 02*	FY 03	FY 04	FY 05
Operational Readiness Test System	4.273	0.000	0.000	0.000
RDT&E Articles Quantity				

Accomplishments: Operational Readiness Test System (ORTS) design efforts and support ECMA transition to production. Design, development, and engineering for ORTS Upgrade for Baseline 3, 4, and 5. Also, determine Fault Detection/Fault Isolation (FD/FI) requirements associated with ECMA Upgrade efforts.

* Congressional Plus-up (K9064/$3.905M) - the ORTS Congressional plus-up is to be used to develop a replacement for the ORTS TAC-3 & TAC-4 systems currently onboard CG 59-64 and DDG 79-90.

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	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	K1776/K9064/K9068/Surface Combatant Weapon Sys Mods

B. Accomplishments/Planned Program (Cont.)

	FY 02*	FY 03	FY 04	FY 05
Traveling Wave Tubes (K9068)	0.981	0.000	0.000	0.000
RDT&E Articles Quantity				

Accomplishments: * Congressional Plus-up (K9064/$0.981M) - the Traveling Wave Tube Circuit Congressional plus-up is to be used for manufacturing of Ring Bar assemblies in the 10KW Traveling Wave Tube.

	FY 02	FY 03	FY 04	FY 05
AWS Warfighting Improvements	0.000	0.861	0.000	1.084
RDT&E Articles Quantity				

Planned: AWS Warfighting Improvements tasking. Perform system engineering to adapt AWS forward fit solution to in-service ships via backfit to allow them to counter the evolving threat. Efforts already identified include AN/SPY-1D(V) TIP Testability.

R-1 SHOPPING LIST - Item No. 106

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	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	K1776/K9064/K9068/Surface Combatant Weapon Sys Mods

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)	9.218	4.352	4.443	4.528
Current BES/President's Budget: (FY04/05 Pres Controls)	9.001	4.257	0.460	4.419
Total Adjustments	-0.217	-0.095	-3.983	-0.109
Summary of Adjustments				
Congressional program reductions				
Congressional rescissions				
SBIR/STTR Transfer	-0.157			
Economic Assumptions	-0.060	-0.095	-0.018	-0.109
Reprogrammings			-3.965	
Congressional increases				
Subtotal	-0.217	-0.095	-3.983	-0.109

Schedule:

Technical:

Funding will be utlized to update the Aegis weapons systems to keep pace with the evolving threat.

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	0604307N/AEGIS COMBAT SYSTEM ENGINEERING	K1776/K9064/K9068/Surface Combatant Weapon Sys Mods

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
SCN LI2020 - CG Conversion*			194.44	439.033	469.17	447.437	679.381	691.534	Cont.	Cont.
SCN LI2122 - DDG 51*	3227.285	2668.076	3198.311	3440.605	193.635	292.294				13,020.206
OPN LI5246 - AEGIS Supt. Eqp	154.107	158.04	105.227	105.205	104.708	105.291	109.406	106.121	Cont.	Cont.
RDT&E,N 0603382N - Advanced Combat Sys	3.111	3.276	3.394	3.346	1.918	0.981	0.985	0.999	Cont.	Cont.

* TOA excludes outfitting and post delivery.

E. ACQUISITION STRATEGY: *

Lockheed Martin is the sole producer of the AEGIS Weapon System (AWS) except for the AN/SPY-1 Radar transmitter and the MK 99 CWI transmitter and illuminator which are produced by Raytheon. It is anticipated that all AWS modifications will be procured from the original equipment manufacturer.

F. MAJOR PERFORMERS:

Lockheed Martin, Moorestown, NJ (Combat System Design Agent/Prime Contractor) - 12/96
CDSA Dam Neck, Virginia Beach, VA (Lifetime Support Engineering Agent)

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2003**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604307N/AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K1776/K9064/K9068/Surface Combatant Weapon Sys Mods						
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	SS/CPAF	Lockheed, Moorestown, NJ	23.354	2.123		0.460		2.354		Cont.	Cont.	
Systems Engineering	WR/RCP	Naval Labratories	1.680	0.700		0.000		0.720		Cont.	Cont.	
Systems Engineering	WR/RCP	NSWC/DD	0.050	0.325		0.000		0.350		Cont.	Cont.	
Systems Engineering		Wright Patterson AFB	0.250	0.148		0.000		0.145		Cont.	Cont.	
Systems Engineering		CDSA Dam Neck	3.905	0.000		0.000		0.000		Cont.	Cont.	
Systems Engineering		NSWC/Crane	0.981	0.000		0.000		0.000		Cont.	Cont.	
Systems Engineering		Miscellaneous	2.032	0.661		0.000		0.850		Cont.	Cont.	
Award Fees			0.996	0.000		0.000		0.000		Cont.	Cont.	
Subtotal Product Development			33.248	3.957		0.460		4.419		Cont.	Cont.	
Remarks:												
Support	WR/RCP	Miscellaneous	1.060	0.300		0.000		0.000		Cont.	Cont.	
Subtotal Support			1.060	0.300		0.000		0.000		Cont.	Cont.	
Total Cost:			34.308	4.257		0.460		4.419		Cont.	Cont.	
Remarks:												

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2003**

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

PROGRAM ELEMENT NUMBER AND NAME: 0604307N/AEGIS COMBAT SYSTEM ENGINEERING

PROJECT NUMBER AND NAME: K1776/K9064/K9068/Surface Combatant Weapon Sys Mods

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
AWS Warfighting Improvements																																
TIP ADR Firmware Coding			△																													
TIP ADR Firmware Test				△																												
TIP Phase I completion & demo						△																										
ATS Demo																△																
COR Review	Quarterly												Quarterly																			
ECMA Enhancements																																
Lab Demo - COTS concept																																
Format Design Document	△																															
Proof of Concept Demo																																
In Process Review	Monthly																															
Environ Qual Completion																																
Final Demo																																
COR Review	Quarterly																															
Radar System Engineering Studies																△	DT/OT (7/03) Assessment & Corrections															
SPY-1D(V) Radar Functional Assessment																				△	OPEVAL (11/04) Assessment & Corrections											
AN/SPY-1 Working Group	Quarterly												Quarterly																			
Technical Exchange Meeting	As Required								As Required				As Required																			
Contract Review	Quarterly												Quarterly																			
Review spec change, test	Upon Release								Upon Release				Upon Release																			
Technical/meeting reports	As Required												As Required																			
Progress/status reports	Quarterly												Quarterly																			
Radar Roadmap review	Annually				Annually								Annually				Annually				Annually				Annually				Annually			

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

Exhibit R-4a, Schedule Detail:						DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY **RDT&E BA-5**	PROGRAM ELEMENT 0604307N/AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K1776/K9064/K9068/Surface Combatant Weapon Sys Mods			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
AWS Warfighting Improvements								
TIP ADR Firmware Coding	3 Q							
TIP ADR Firmware Test, Software Mode 1 Test	4 Q							
TIP Phase 1 completion and demonstration		2 Q						
ATS Demonstration				4 Q				
Contracting Officer Representative (COR) Review	1-4 Q	1-4 Q		1-4 Q	1-4 Q	1-4 Q	1-4 Q	1-4 Q
ECMA Enhancements								
Lab demonstration - COTS concept								
Format Design Document	1 Q							
Proof of Concept Demonstration								
In Process Reviews	Monthly							
Environmental Qualification Completion								
Final Demonstration								
Contracting Officer Representative (COR) Review	1-4 Q							
Radar Systems Engineering								
SPY-1D(V) Radar Functional Assessment				4Q	4Q			
AN/SPY-1 Working Group Meeting	1-4 Q	1-4 Q		1-4 Q	1-4 Q	1-4 Q	1-4 Q	1-4 Q
Technical Exchange Meetings	As required	As required	As required	As required	As required	As required	As required	As required
Contract Review	1-4 Q	1-4 Q		1-4 Q	1-4 Q	1-4 Q	1-4 Q	1-4 Q
Review specification changes, test procedures	Upon release	Upon release	Upon release	Upon release	Upon release	Upon release	Upon release	Upon release
Technical/meeting reports	As required	As required		As required	As required	As required	As required	As required
Progress/status reports	1-4 Q	1-4 Q		1-4 Q	1-4 Q	1-4 Q	1-4 Q	1-4 Q
Radar Roadmap review and update	Annually	Annually		Annually	Annually	Annually	Annually	Annually

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2003**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K3044 / K9223 / K9225 - SOLID STATE SPY RADAR			
COST ($ in Millions)	FY 2002	FY 2003*	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**0.000**	**29.311**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty	**Not Applicable**							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

The Solid State SPY Radar is being developed to support Theater Air and Missile Defense requirements as part of a next generation cruiser, CG(X), radar suite. The S-Band Solid State SPY Radar will provide multimission capabilities, supporting both long range, exoatmospheric detection, tracking and discrimination of ballistic missiles, as well as robust Ballistic Missile Defense and Self Defense against air and surface threats. For the BMD capability, increased radar sensitivity and bandwidth over the current SPY-1 system is needed to detect, track and support engagements of advanced ballistic missile threats at the required ranges. For the Ballistic Missile Defense and Self Defense capability, increased sensitivity and clutter rejection capability is needed to detect, react to, and engage stressing Very Low Observable /Very Low Flyer (VLO/VLF) threats in the presence of heavy land, sea, and rain clutter. This effort provides for the development of an S-Band solid state replacement for the SPY-1 Radar with the required capabilities to pace the evolving threat.

* FY 2003 includes:
- Congressional plus-up for Solid State SPY-1E Multi-Mission Radar
- Congressional plus-up for Silicon Carbide MMIC Producibility Program
- Transfer of Missile Defense Agency funds to Navy for S-Band Radar Research

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	0604307N / AEGIS COMBAT SYSTEM ENGINEERING	K3044 / K9223 / K9225 - SOLID STATE SPY RADAR

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
S-Band Radar Development		22.000		
RDT&E Articles Quantity				

- Initiate radar preliminary design
- Develop system and subsystem specifications
- Identify and initiate risk reduction experiments and demonstrations of enabling technologies, including high-power amplifiers (including advanced materials), Transmit/Reciever (T/R) modules, and Thermal management and cooling technologies, line array, environmental demonstration array.

	FY 02	FY 03	FY 04	FY 05
Advanced Technology MMIC Development		1.467		
RDT&E Articles Quantity				

- Improve the producibility (I.e. yield and cost) of high power Silicon Carbide (SiC) MMIC power amplifiers.
- Non recurring engineering design of high power SiC MMICs. Recurring fabrication to support future capability radar demonstrations

	FY 02	FY 03	FY 04	FY 05
Field Activities		5.844		
RDT&E Articles Quantity				

- Participate in the development of threat definitions, performance requirements and radar specifications; perform radar systems performance analysis.
- Participate in Integrated Product Teams (IPTs) and Working Groups (WGs) to resolve critical technical issues.
- Perform supporting studies and analyses.

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	0604307N / AEGIS COMBAT SYSTEM ENGINEERING	K3044 / K9223 / K9225 - SOLID STATE SPY RADAR

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		4.971		
Current BES/President's Budget: (FY04/05 Pres Controls)		29.311		
Total Adjustments	0.000	24.340	0.000	0.000
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
Minor Program Adjustments		-0.493		
SBIR/STTR Transfer				
Economic Assumptions		-0.167		
Reprogrammings				
Congressional increases		25.000		
Subtotal	0.000	24.340	0.000	0.000

Schedule:

Schedule changes due to funding changes associated with Program Element 0603882C.

Technical:

Not Applicable.

Funding:

FY 2003 includes:
- Congressional add for Solid State SPY-1E Multi-Mission Radar
- Congressional add for Silicon Carbide MMIC Producibility Program
- Transfer of Missile Defense Agency funds for S-Band Radar Research

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	0604307N / AEGIS COMBAT SYSTEM ENGINEERING	K3044 / K9223 / K9225 - SOLID STATE SPY RADAR

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
P.E. 0301327N (Missle and Space Technical Collection)	51.1	71.0	81.0	57.5	50.0	51.1	52.2	Cont.	Cont.	

E. ACQUISITION STRATEGY:

The Solid State SPY Radar Program was awarded to Lockheed Martin in June 1999 based upon a competitive selection resulting from a Broad Agency Announcement (BAA). This program is for the competition of a prototype radar system. A milestone decision for EDM will be based upon successful completion of this prototype phase.

F. MAJOR PERFORMERS:

Lockheed Martin (Moorestown, New Jersey) - 1999

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2003**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604307N / AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K3044 / K9223 / K9225 - SOLID STATE SPY RADAR						
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
S-Band Radar Development	SS/CPAF	Lockheed Martin (NJ)	N/A	22.000	01/03	N/A	N/A	N/A	N/A	Cont.	Cont.	Cont.
Advanced Technology MMIC Dev	TBD	CREE	N/A	1.200	01/03	N/A	N/A	N/A	N/A	Cont.	Cont.	Cont.
Program Management Support	TBD	Various	N/A	6.111	N/A	N/A	N/A	N/A	N/A	Cont.	Cont.	Cont.
Subtotal Product Development			0.000	29.311		0.000		0.000		Cont.	Cont.	Cont.
Remarks:												
Development Support												
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Award Fees												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2003**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**			PROGRAM ELEMENT 0604307N / AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K3044 / K9223 / K9225 - SOLID STATE SPY RADAR						
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												
Operational Test & Evaluation												
Live Fire Test & Evaluation												
Test Assets												
Tooling												
GFE												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Travel												
Labor (Research Personnel)												
SBIR Assessment												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												
Total Cost			0.000	29.311		0.000		0.000		Cont.	Cont.	Cont.
Remarks:												

R-1 SHOPPING LIST - Item No. 106

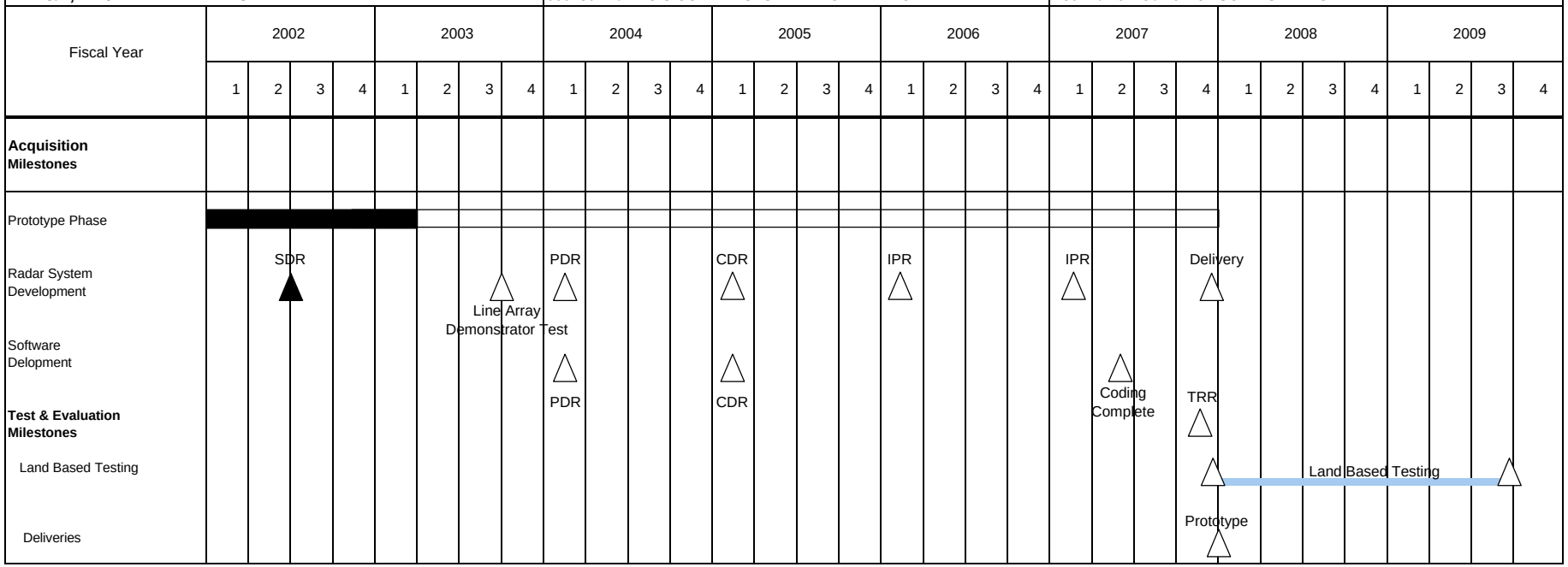
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2003**

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

PROGRAM ELEMENT NUMBER AND NAME: 0604307N / AEGIS COMBAT SYSTEM ENGINEERING

PROJECT NUMBER AND NAME: K3044 / K9223 / K9225 - SOLID STATE SPY RADAR



R-1 SHOPPING LIST - Item No. 106

FY02 - Funded via Missile Defense Agency (MDA).

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2003**		
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604307N / AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K3044 / K9223 / K9225 - SOLID STATE SPY RADAR			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q		
Radar System Development								
System Design Review (SDR)	3Q							
Line Array Demonstration Test		3Q						
Preliminary Design Review (PDR)			1Q					
Critical Design Review (CDR)				1Q				
In-Process Review (IPR)					1Q	1Q		
Delivery						4Q		
Software Delivery								
Preliminary Design Review (PDR)			1Q					
Critical Design Review (CDR)				1Q				
Coding Complete						2Q		
Test & Evaluation								
Test Readiness Review (TRR)						4Q		
Land Based Test						4Q	1Q-4Q	1Q-3Q
Deliverables								
Prototype						4Q		

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2003**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K9221/DDG-51 Optimized Manning			
COST ($ in Millions)	FY 2002	FY 2003*	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**0.000**	**2.445**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty	**Not Applicable**							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional plus-up for development, demonstration, and validation of new initiatives to reduce the manning on Arleigh Burke (DDG–51) class destroyers. Specifically this effort will include the design, installation, testing and evaluation of a prototype personnel locator system integrated with DDG-51 class Automated Common Diagrams (ACDs).

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	0604307N / AEGIS COMBAT SYSTEM ENGINEERING	K9221/DDG-51 Optimized Manning

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
S-Band Radar Development		2.445		
RDT&E Articles Quantity				

Accomplishments: N/A

Planned: Funds design, installation, testing and evaluation of a prototype personnel locator system integrated with DDG-51 class Automated Common Diagrams (ACDs).

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	0604307N / AEGIS COMBAT SYSTEM ENGINEERING	K9221/DDG-51 Optimized Manning

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.000		
Current BES/President's Budget: (FY04/05 Pres Controls)		2.445		
Total Adjustments	0.000	2.445	0.000	0.000
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
Minor Program Adjustments				
SBIR/STTR Transfer				
Economic Assumptions		-0.055		
Reprogrammings				
Congressional increases		2.500		
Subtotal	0.000	2.445	0.000	0.000

Schedule:

Not Applicable.

Technical:

Not Applicable.

Funding:

Not Applicable.

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	0604307N / AEGIS COMBAT SYSTEM ENGINEERING	K9221/DDG-51 Optimized Manning

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
Not Applicable										

E. ACQUISITION STRATEGY: *

Program office intends to use existing DDG-51 class Lead Yard Services contract with Bath Iron Works (CPAF) and existing delivery orders (cost).

F. MAJOR PERFORMERS:

Bath Iron Works

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2003**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604307N / AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K9221/DDG-51 Optimized Manning							
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												
	CPAF	BIW/Bath, Me		1.945	02/03							
		Various		0.500								
Award Fees												
Subtotal Product Development			0.000	2.445		0.000		0.000		Cont.	Cont.	Cont.
Remarks:												
Support												
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

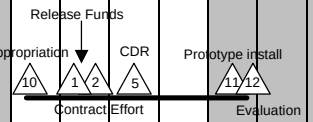
Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2003**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604307N / AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K9221/DDG-51 Optimized Manning							
Cost Categories	Contract Method & Type	Performing Activity & 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
Test and Evaluation												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												
Program Management Support												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												
Total Cost			0.000	2.445		0.000		0.000		Cont.	Cont.	Cont.
Remarks:												

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE:
	Not Applicable		**February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME		PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604307N / AEGIS COMBAT SYSTEM ENGINEERING		K9221/DDG-51 Optimized Manning

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



R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

Exhibit R-4a, Schedule Detail **Not Applicable**					DATE: **February 2003**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604307N / AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K9221/DDG-51 Optimized Manning			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Release of funds		2Q						
Preliminary Design Review (PDR)		2Q						
Critical Design Review (CDR)		3Q						
Software Development								
Hardware Development		3Q-4Q						
Test & Evaluation								
Prototype Shipboard Installation			1Q					
Deliverables								
Progress Reports (monthly)								
Provisioning Technical Documentation (PTD)								
Shipset Personnel Locator System Hardware								
Modified Automated Common Diagram Software								
Modified Technical Manuals								

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2003**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604307N / AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K9222/ Knowledge Projection			
COST ($ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**0.000**	**1.467**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
RDT&E Articles Qty	**Not Applicable**							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Congressional plus-up to support NAVSEA Crane, EG&G Technical Services, Inc., Purdue University, and Indiana University in a collaborative alliance to develop a new system to remotely monitor Navy ships (systems and equipment), enable technicians to repair and maintain increasingly complex equipment utilizing equipment failure characteristics, related repair knowledge and off-ship technical experts via the DoD/Navy communications systems.

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	0604307N / AEGIS COMBAT SYSTEM ENGINEERING	K9222/ Knowledge Projection

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Knowledge Projection		1.467		
RDT&E Articles Quantity				

Accomplishments: N/A

Planned: Begin development of a new system to remotely monitor Navy ships (systems and equipment), enable technicians to repair and maintain increasingly complex equipment utilizing equipment failure characteristics, related repair knowledge and off-ship technical experts via the DoD/Navy communications systems.

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	0604307N / AEGIS COMBAT SYSTEM ENGINEERING	K9222/ Knowledge Projection

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)		0.000		
Current BES/President's Budget: (FY04/05 Pres Controls)		1.467		
Total Adjustments	0.000	1.467	0.000	0.000
Summary of Adjustments				
Congressional program reductions				
Congressional undistributed reductions				
Congressional rescissions				
Minor Program Adjustments				
SBIR/STTR Transfer				
Economic Assumptions		-0.033		
Reprogrammings				
Congressional increases		1.500		
Subtotal	0.000	1.467	0.000	0.000

Schedule:

Not Applicable.

Technical:

Not Applicable.

Funding:

Not Applicable.

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	0604307N / AEGIS COMBAT SYSTEM ENGINEERING	K9222/ Knowledge Projection

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
Not Applicable										

E. ACQUISITION STRATEGY: *

Utilize Congressional Adds in FY's 2002 and 2003 to develop Navy system specification for Knowledge Projection. Develop communication and computer equipment applications and interfaces that will enable highly efficient communication (knowledge parity) between sailor and experts on condition and repair of critical ship systems and equipments. Provide final system specification to resource sponsors for requirement consideration.

F. MAJOR PERFORMERS:

NSWC Crane - Project Management for USN
EG&G Technical Services - Project Coordination among IU and PU w/Navy organizations
Indiana University-Business Case Development
Purdue University-System Software and Application developers and Technology Roadmapping

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

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February 2003**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604307N / AEGIS COMBAT SYSTEM ENGINEERING			PROJECT NUMBER AND NAME K9222/ Knowledge Projection							
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	CPFF	EG&G Technical Services		1.000	02/03							
Award Fees												
Subtotal Product Development			0.000	1.000		0.000		0.000		Cont.	Cont.	Cont.
Remarks:												
Support												
Navy Activity Funding		NSWC Crane		0.467								
Subtotal Support			0.000	0.467		0.000		0.000		0.000	0.467	Cont.
Remarks:												

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

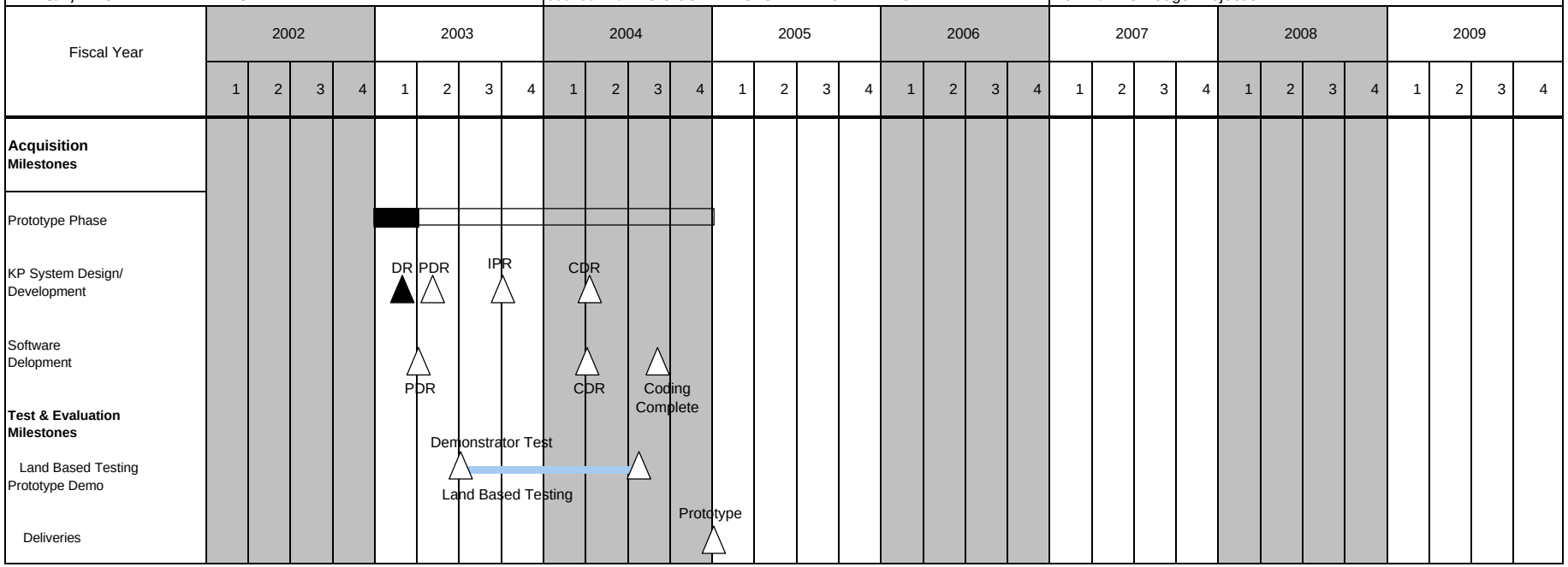
Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2003**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604307N / AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K9222/ Knowledge Projection						
Cost Categories	Contract Method & Type	Performing Activity & 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
Test and Evaluation												
Award Fees												
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												
Program Management Support												
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	Cont.
Remarks:												
Total Cost			0.000	1.467		0.000		0.000		Cont.	Cont.	Cont.
Remarks:												

R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

EXHIBIT R4, Schedule Profile	DATE:
Not Applicable	**February 2003**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604307N / AEGIS COMBAT SYSTEM ENGINEERING	K9222/ Knowledge Projection



R-1 SHOPPING LIST - Item No. 106

CLASSIFICATION:

Exhibit R-4a, Schedule Detail **Not Applicable**					DATE: **February 2003**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-5**	PROGRAM ELEMENT 0604307N / AEGIS COMBAT SYSTEM ENGINEERING				PROJECT NUMBER AND NAME K9222/ Knowledge Projection			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Prototype Phase		1-4Q	1-4Q					
KP System Design		1-4Q	1-2Q					
CASE BASED REASONING SYSTEM								
HUMAN MACHINE INTERFACE								
HIGH PERFORMANCE KNOWLEDGE BASE								
DATA MINING TOOL SET								
Software Delivery								
PRELIMINARY DESIGN REVIEW		1Q						
CRITICAL DESIGN REVIEW			1Q					
Test & Evaluation								
LAND BASED ASSESSMENT		2Q	1Q					
PROTOTYPE DEMO		3Q	2Q					
Deliverables								
PROTOTYPE SYSTEM			4Q					

R-1 SHOPPING LIST - Item No. 106