

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5				Ship Self Defense (Detect & Control)/0604755N					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost	113.237	63.407	61.966	40.843	24.813	0.099	0.099	CONT	CONT
SPS Improvement Program /20166	0.000	4.855	3.973	1.988	0.000	0.000	0.000	0.000	81.842
5" Rolling Air Frame Missile / 20167	3.647	0*	0.000	0.000	0.000	0.000	0.000	0.000	CONT
NATO Sea Sparrow / 20173	11.351	0.000	0.000	0.000	0.000	0.000	0.000	0.000	CONT
QRCC / K2178/K2794*	42.661	44.081	48.673	36.386	24.813	0.099	0.099	CONT	CONT
NULKA / K2190 / K2441/K9081	3.097	9.714*	0.000	0.000	0.000	0.000	0.000	0.000	CONT
AIEWS / K2309	44.409	2.081*	0.000	0.000	0.000	0.000	0.000	0.000	CONT
IRST/22649	8.072	2.676	9.320	2.469	0.000	0.000	0.000	0.000	75.060
Quantity of RDT&E Articles									
* FY02 Congressional Adds: RAM (+\$6.939) should be in PE 64756, (NULKA (+\$2.775) and AIEWS (+\$2.081) should be in PE 64757.									
A. Mission Description and Budget Item Justification This program element consolidates currently ongoing and planned programmatic efforts related to Detect & Control aspects of Ship Self Defense (SSD) to facilitate effective planning and management of these efforts and to exploit the synergistic relationship inherent in each. Analysis and demonstration have established that surface SSD based on single-sensor detection point-to-point control architecture performs marginally against current and projected Anti-Ship Cruise Missile (ASCM) threats. The supersonic seaskimming ASCM reduces the effective battle space to the horizon and the available reaction time-line to less than 30 seconds from first opportunity to detect until the ASCM impacts its target ship. Against such a threat, multi-sensor integration is required for effective detection, and parallel processing is essential to reduce reaction time to acceptable levels and to provide vital coordination/integration of hardkill and softkill assets.									

R-1 SHOPPING LIST - Item No. 136 - 1 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5	R-1 ITEM NOMENCLATURE Ship Self Defense/0604755N	
<p>These SSD projects address and coordinate the detect and control functions necessary to meet the rigorous SSD requirements within a development structure dedicated to systems engineering.</p> <p>(U) DETECTION: Improved coordinated sensor performance to increase the probability of detecting low altitude, low observable targets is to be achieved through the synergism gained from the integration of dissimilar sensor sources. Multi-sensor integration is being addressed through the efforts of Quick Reaction Combat Capability (QRCC) (K2178), while sensor improvements are addressed through the SPS Improvements (20166) and Infrared Search and Track (K2442/22649). These provide improvements to both active and passive detection.</p> <p>(U) CONTROL: Multi-sensor integration, parallel processing and the coordination of hardkill/softkill capabilities in an automated response to the ASCM threat are the cornerstones of Ship Self Defense System (SSDS) being developed through QRCC (K2178) efforts. In addition, that project provides for the central system engineering management of SSD developments, including efforts required to integrate SSDS with the Advanced Combat Direction System (CDS) for those ships having a CDS.</p>		

R-1 SHOPPING LIST - Item No. 136 - 2 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2, RDT&E Budget Item Justification		DATE:	
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE	
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA5		Ship Self Defense/0604755N	
Program Change Summary:	FY 2001	FY 2002	FY 2003
FY 2002 President's Budget:	114.514	52.163	
Appropriated Value:	87.149	52.136	
Adjustments to FY2001/2002 President's Budget	26.088	11.271	
FY 2003 Pres Budget Submit:	113.237	63.407	61.966
Funding:			
FY01: Funding increase due to Program Adjustments for: SSDS (+\$25.515), AIEWS J(+\$.900), NATO (+\$2.012) and Minor Pricing Adjustments of (-\$2.339).			
FY02: Funding increase due to Congressional Adds for: RAM (+\$7.000), AIEWS (+\$2.100), NULKA (+\$2.800), and Minor Pricing Adjustments (-\$.639).			
Schedule: Not Applicable			
Technical: Not Applicable			

R-1 SHOPPING LIST - Item No. 136 - 3 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY				PROJECT NAME AND NUMBER					
RDT&E, N/BA5				SPS Improvement Program/20166					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	0.000	4.855	3.973	1.988	0.000	0.000	0.000	0.000	81.842
RDT&E Articles Qty									
<p>A. Mission Description and Budget Item Justification: This program develops and tests performance and reliability upgrades for search radar equipment to meet the evolving threat.</p> <p>1. (U) FY 2002 PLAN: - (U) (\$2.855) Begin AN/SPQ-9B integration into AEGIS Baseline 7 Phase 1/MK 160 Gun Computer System. - (U) (\$2.000) Continue Developmental Testing using Lightweight Antenna configuration.</p> <p>2. (U) FY 2003 PLAN: - (U) (\$3.973) Continue AN/SPQ-9B integration into AEGIS Baseline 7 Phase 1/MK 160 Gun Computer System.</p> <p>3. (U) FY 2004 PLAN: - (U) (\$1.988) Continue AN/SPQ-9B integration into AEGIS Baseline 7 Phase 1/MK 160 Gun Computer System.</p>									

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N			PROJECT NAME AND NUMBER SPS Improvement Program/20166					
B. Other Program Funding Summary										
		<u>FY2001</u>	<u>FY2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY2006</u>	<u>FY2007</u>	To Complete	Total Cost
OPN LINE 511000 (AN/SPQ-9B)		1.531	22.054	17.589	10.080	25.832	24.796	30.475	CONT.	CONT.
C. Acquisition Strategy: AN/SPQ-9B Radar is a directed sole source contract to Northrop Grumman Norden Systems for LRIP, and upon successful completion of TECHEVAL/OPEVAL, entering into Full Rate Production. Beginning in FY 2002, Lockheed Martin to develop AN/SPQ-9B integration into AEGIS Baseline 7 Phase 1/MK 160 Gun Computer System.										
D. Schedule Profile: See attached.										

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EXHIBIT R-2a, RDT&E Project Justification

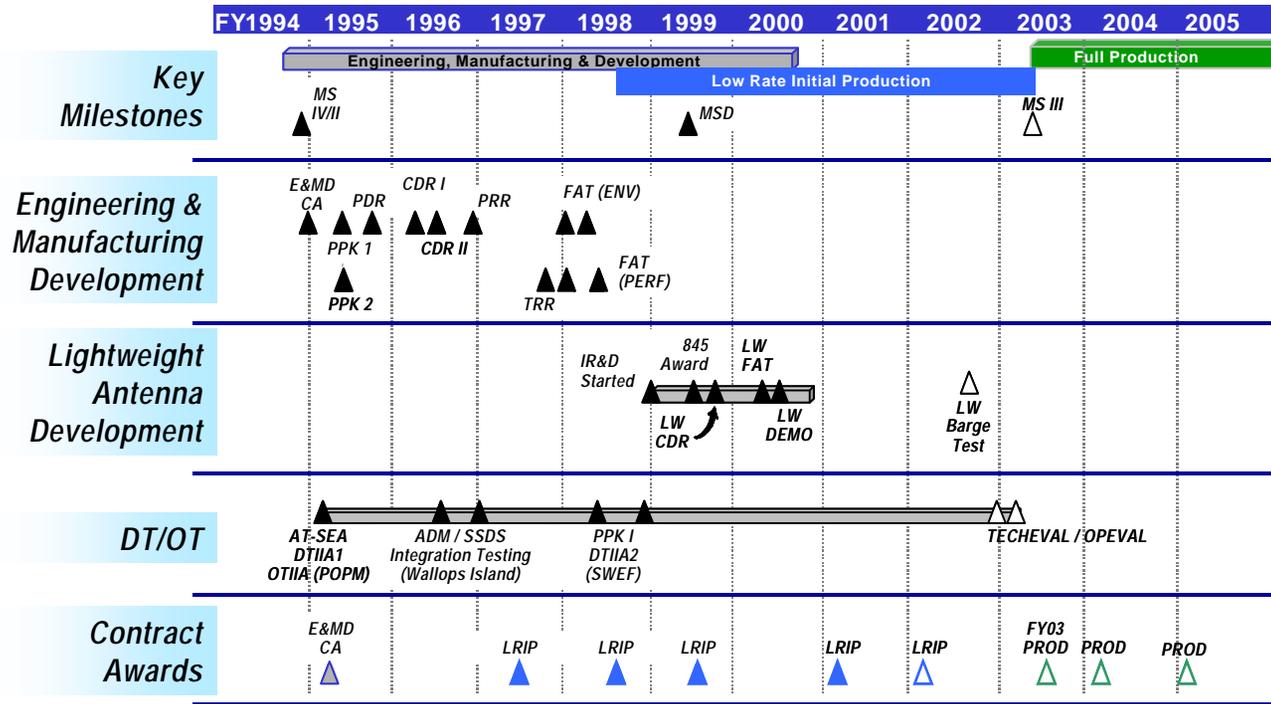
DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY
RDT&E, N/BA5

PROGRAM ELEMENT NAME AND NUMBER
SHIP SELF DEFENSE 0604755N

PROJECT NAME AND NUMBER
SPS Improvement Program/20166



R-1 SHOPPING LIST - Item No. 136 - 6 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE: January 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			SPS Improvement Program/20166						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPAF	NGNS, Melville, NY	37.744	0.000	N/A	2.000	N/A	0.000	N/A	0.000	39.744	39.744
Primary Hardware Development	FFP	*ITT/G, Van Nuys, CA	7.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	7.000	7.000
Primary Hardware Development	CPAF	LM, Moorestown, NJ	0.000	0.000	N/A	2.855	N/A	3.973	N/A	1.988	8.816	8.816
Subtotal Product Development			44.744	0.000		4.855		3.973		1.988	55.560	55.56
Remarks: *Development cost of AN/SPS-48 Transmitter.												
Development Support Equipment												
Software Development	WR	PHD NSWC, CA	5.985	0.000	N/A	0.000	N/A	0.000	N/A	0.000	5.985	5.985
Training Development		Various	2.112								2.112	2.112
Integrated Logistics Support	WR	Various	2.112	0.000	N/A	0.000	N/A	0.000	N/A	0.000	2.112	2.112
Configuration Management	PD/WR	Various	6.580	0.000	N/A	0.000	N/A	0.000	N/A	0.000	6.580	6.580
Technical Data	WR	Various	3.170	0.000	N/A	0.000	N/A	0.000	N/A	0.000	3.170	3.170
Subtotal Support			19.959	0.000		0.000		0.000		0.000	19.959	19.959
Remarks: Various Activities includes PHD NSWC, NRL, NSWC/CD, and APL												

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)										DATE: January 2002		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5			PROGRAM ELEMENT SHIP SELF DEFENSE 0604755N				PROJECT NAME AND NUMBER SPS Improvement Program/20166					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E	WR/RC	PHD NSWC, CA	1.665	0.000	N/A	0.000	N/A	0.000		0.000	1.665	1.665
DT&E	WR	NRL, Washington, DC	1.233	0.000	N/A	0.000	N/A	0.000		N/A	1.233	1.233
OT&E	WR/RC	PHD NSWC, CA	0.560	0.000	N/A	0.000	N/A	0.000		N/A	0.560	0.560
OT&E	WR	NRL, Washington, DC	0.410	0.000	N/A	0.000	N/A	0.000		N/A	0.410	0.410
Subtotal T&E			3.868	0.000	N/A	0.000	N/A	0.000		0.000	3.868	3.868
Remarks:												
Cost Categories												
MANAGEMENT												
Miscellaneous	Various	Various	2.455	0.000	N/A	0.000	N/A	0.000		0.000	2.455	2.455
Subtotal Management			2.455	0.000	N/A	0.000		0.000		0.000	2.455	2.455
Remarks:												
Total Cost			71.026	0.000		4.855		3.973		1.988	81.842	81.842
Remarks:												

R-1 SHOPPING LIST - Item No. 136 - 8 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER					
RDT&E, N/BA5	SHIP SELF DEFENSE 0604755N			Quick Reaction Combat Capability / K2178					
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	42.661	44.081	48.673	36.386	24.813	0.099	0.099	0.000	0.000
RDT&E Articles Qty									
<p>A. Mission Description and Budget Item Justification The Quick Reaction Combat Capability (QRCC) project implements an evolutionary acquisition of improved ship self defense capabilities against Anti-Ship Cruise Missiles (ASCMs) for selected ships. The Ship Self Defense System (SSDS) is the integrating element of QRCC. The design integrates several existing stand-alone Anti-Air Warfare systems that do not individually provide the complete detection, control, and engagement capabilities needed against low flying, high speed ASCMs with low radar cross sections. The SSDS integration concept fulfills the need for an automated detection, quick reaction and multi-target engagement capability emphasizing performance in the littoral environment. SSDS replaces manual control of several self-defense systems with a single integrated capability under the computer-aided control of ship operators. System design emphasizes use of non-developmental items, commercial standards, Next Generation Computer Resources, computer program reuse and open architecture. SSDS is a physically distributed, open architecture computer network consisting of commercially available or previously developed hardware. It includes a command table that uses components of the Navy's AN/UYQ-70 standard display for human-machine interface, commercially available local area network access units and circuit cards, and commercially available fiberoptic cabling.</p> <p>SSDS MK1 integrates the SPS-49A(V)1 radar, SPS-67(V)1 radar, AN/SLQ-32A electronic countermeasures system, Combat Identification, Friend or Foe-Self Defense (CIFF-SD), Rolling Airframe Missile and Phalanx Close-In Weapon System and is being installed on LSD41/49 class ships. SSDS MK1 successfully completed Operational Evaluation in June 1997. SSDS received Milestone III Approval for Full Rate Production (Mar 98) and authority to integrate with ACDS and Cooperative Engagement Capability (CEC) on CV(N), LPD-17, LHD and LHA ship classes.</p> <p>SSDS MK2 facilitates the incremental evolution and implementation of follow-on modifications. Development of SSDS MK2 consists of leveraging critical experiments and re-use of technology and software. SSDS MK2 is in development and will integrate other ship self defense elements, such as the AN/SPQ-9B radar, and NATO Sea-sparrow missile system with the CEC to improve joint interoperability. SSDS MK2 provides enhanced capabilities for Force Protection against air, surface, and subsurface threats using both ownship and remote data in support of the AAW Capstone Requirements. SSDS MK2 will also incorporate selected features of the Advanced Combat Direction System to become the integrated, coherent real time Command and Control System for Aircraft Carriers and Amphibious ships. It will: increase operational capabilities; improve combat readiness and Battle Group Interoperability; and promote standardization. It will also introduce new shipboard tactical displays and support equipment, as well as, implement interfaces common with those used by AEGIS to facilitate transition to Common Command and Decision.</p>									

R-1 SHOPPING LIST - Item No. 136 - 9 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N	PROJECT NAME AND NUMBER Quick Reaction Combat Capability / K2178
<p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. FY 2001 Accomplishments:</p> <ul style="list-style-type: none">- (U) (\$21.306) Continued SSDS MK 2 Mod 1/2 computer program coding, unit testing and multi-element integration testing.- (U) (\$ 5.421) Conducted developmental testing as Surface Combat System Center (SCSC) Wallops Island and modified software as required.- (U) (\$ 4.107) Completed development integration, began test of SSDS MK 2 Mod 0 efforts, and delivered to CVN 68, USS NIMITZ.- (U) (\$.614) Continued documentation updates, training curriculum updates and ILS planning.- (U) (\$.389) Began systems engineering for LHD unique integration efforts with SSDS MK 2.- (U) (\$ 5.000) Applied Labor Rate Adjustment on the development, integration and delivery Raytheon contract.- (U) (\$ 5.824) Coordinate and document Combat System Integration and Interoperability Requirements for the CVN68 BG, USS NIMITZ. <p>2. FY 2002 Plan:</p> <ul style="list-style-type: none">- (U) (\$27.381) Continue computer program coding, unit testing and multi-element integration testing.- (U) (\$ 5.000) Post test analysis and computer program correction for Mod 0.- (U) (\$ 5.000) Development Test (DT)/Distributed Engineering Plant (DEP) testing at SCSC Wallops Island on CVN 68 and CVN 76.- (U) (\$ 5.700) Apply remaining Labor Rate Adjustment on the development, integration and delivery Raytheon contract.- (U) (\$ 1.000) Complete DT and Operational Test (OT) on SSDS MK 2 Mod 0 configuration. <p>3. FY 2003 Plan:</p> <ul style="list-style-type: none">- (U) (\$26.511) Complete computer program development of the SSDS MK 2 Mod 1/2.- (U) (\$ 5.000) Test and Evaluation on SSDS MK 2 Mod 1 configuration CVN 76 at Wallops Island.- (U) (\$ 8.600) Post land based combat system test analysis and computer program correction of CVN 76 configuration.- (U) (\$ 2.000) Test preparation and documentation for LPD 17 configuration testing efforts planned for FY04.- (U) (\$ 6.562) Software engineering and computer program coding and begin test preparations for the LHD unique capabilities		

R-1 SHOPPING LIST - Item No. 136 - 10 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER						
RDT&E, N/BA5	SHIP SELF DEFENSE 0604755N			Quick Reaction Combat Capability / K2178						
B. Other Program Funding Summary										
QRCC / K2178	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost	
OPN 523900, 523905, 523906	9.221	39.029	47.226	63.008	46.013	35.481	32.487	211.23	611.195	
O&MN 14DRO WPN Maint. QRCC	7.813	9.827	11.147	12.778	12.888	13.03	14.21	CONT.	CONT.	
SCN CV(N) ship class	0	0	56.887	0	0	0	0	0	56.887	
SCN LPD ship class	0	44.298	45.517	47.439	21.821	22.258	0	0	181.333	
Related RDT&E: PE 0603658N (Cooperative Engagement Capability)										
C. Acquisition Strategy: LSD class procurements and installations are complete. These systems were procured under a Firm Fix Price (FFP) Contract. The FY00 requirements also include CVN 68 and 1 shore based trainer. The first SSDS MK 2 system procurements took place under a Cost Plus Award Fee contract in FY99 for the CVN 76, LPD 17, LPD 18 and CVN 69. Follow-on procurements for additional ships of the CV(N), LPD and LHD classes will be made using FFP contracts.										

R-1 SHOPPING LIST - Item No. 136 - 11 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

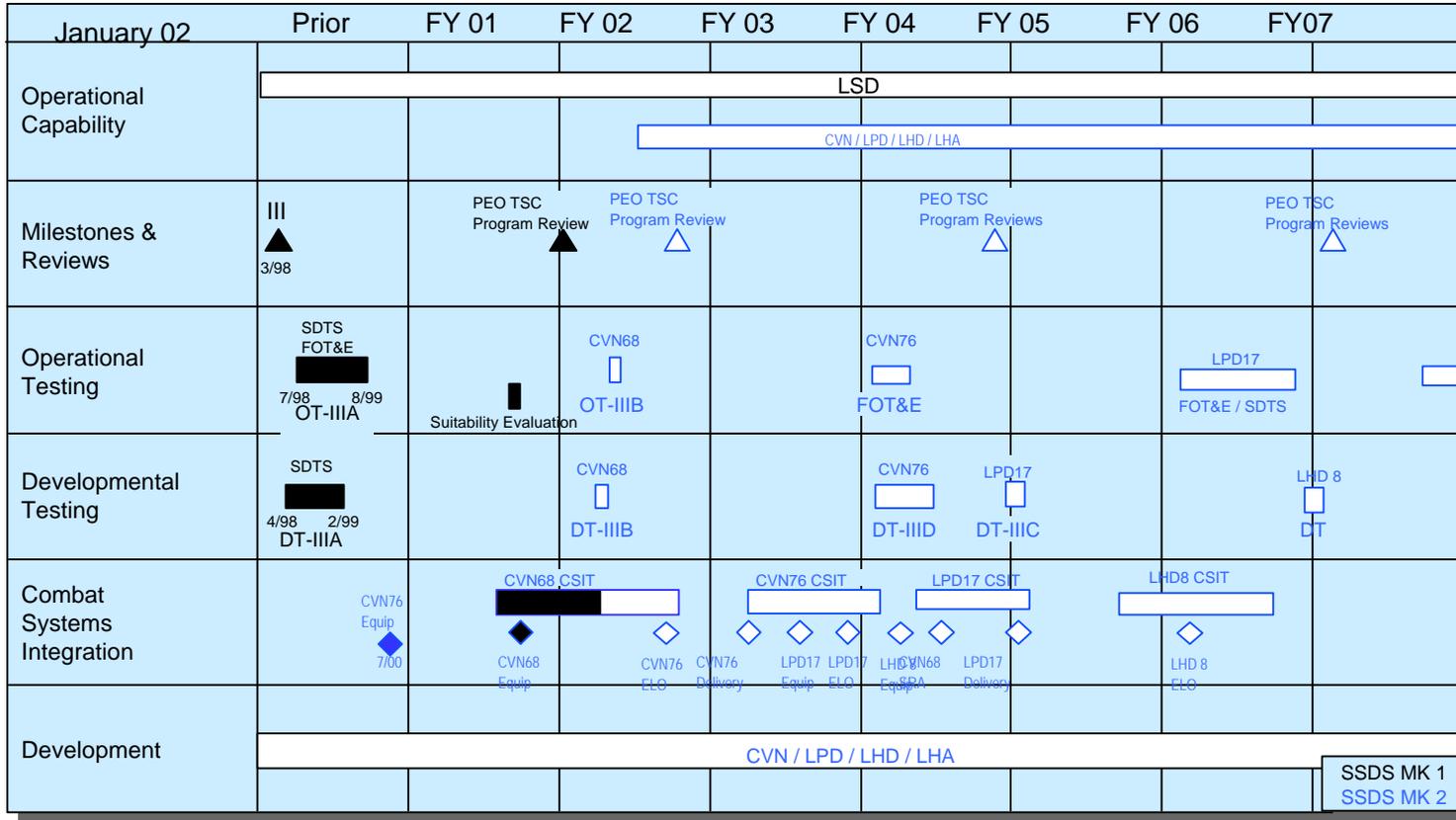
PROJECT NAME AND NUMBER

RDT&E, N/BA5

SHIP SELF DEFENSE 0604755N

Quick Reaction Combat Capability / K2178

D. Schedule Profile:



R-1 SHOPPING LIST - Item No. 136 - 12 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			Quick Reaction Combat Capability / K2178						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
QRCC / K2178	WR	NAVSEA/DD-Dahlgren, VA	15.123	2.762	10/00	2.513	10/01	3.000	10/02	CONT	CONT	N/A
Systems Engineering	SS/FP	JHU/APL-Laurel, MD	25.026	1.350	11/00	1.804	11/01	2.500	11/02	CONT	CONT	N/A
Systems Engineering	WR	NAVSEA/PHD-Pt Hueneme,CA	6.495	2.348	N/A	0.480	10/01	0.950	10/02	CONT	CONT	N/A
Systems Engineering	WR	NAVSEA/PHD-Dam Neck, VA	0.000	1.037	N/A	0.745	10/01	1.600	10/02	CONT	CONT	N/A
Product Development	SS/CPAF	RSC(5108)-San Diego, CA	21.204	23.124	10/00	26.426	10/01	26.093	TBD	CONT	CONT	120.001
Systems Engineering	SS/CPAF	RSC(5466)- San Diego, CA	20.353	0.000	N/A	0.000	N/A	0.000	N/A	0.000	20.353	20.353
Award Fees	SS/CPAF	RSC(5108)-San Diego, CA	2.791	2.299	3/01&9/01	4.432	3/01&9/01	4.390	TBD	CONT	CONT	N/A
Award Fees	SS/CPAF	RSC(5466)- San Diego, CA	2.163	0.000	N/A	0.000	N/A	0.000	N/A	0.000	2.163	N/A
Risk Reduction / EMD	Various	Various	76.366	0.000	N/A	0.000	N/A	0.000	N/A	0.000	76.366	76.366
Misc.	Various	Various	0.000	0.175	09/01	0.000	N/A	0.000	N/A	0.000	0.175	N/A
Subtotal Product Development			169.521	33.095		36.400		38.533		CONT	CONT	216.720
Remarks: Misc. product development provides Human Machine Interface improvements to MK 2 and enhancements for On Board training capability for USS NIMITZ.												
QA / RMA												
Systems Engineering	WR	NWAS Corona	8.291	0.325	10/00	0.100	10/01	0.200	10/02	0.400	9.316	
Subtotal Support			8.291	0.325		0.100		0.200		0.400	9.316	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA5			SHIP SELF DEFENSE 0604755N			Quick Reaction Combat Capability / K2178						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
QRCC / K2178	WR	NAVSEA/PHD-Pt Hueneme, CA	22.037	1.012	10/00	1.167	10/01	1.892	10/02	0.000	26.108	N/A
Developmental Test & Evaluation	WR	NAVSEA/PHD-Dam Neck, VA	0.000	1.105	10/00	1.060	10/01	2.823	10/02	0.000	4.988	
Developmental Test & Evaluation	WR	NAVSEA DD, Wallops Island	12.502	1.287	10/00	2.500	10/01	2.699	10/02	3.500	22.488	N/A
Developmental Test & Evaluation	SS/FP	JHU/APL- Laurel, MD	0.618	1.806	10/00	0.986	10/01	1.100	N/A	0.000	4.510	N/A
Developmental Test & Evaluation	WR	NAVSEA/CORONA, Corona CA	0.000	0.251	10/00	0.747	10/01	0.850	10/02	0.000	1.848	
Developmental Test & Evaluation	WR	OPTEVFOR	0.682	0.000	10/00	0.181	10/01	0.250	10/02	0.000	1.113	N/A
Misc.	Various	Various	0.000	2.735	09/01	0.000	N/A	0.000	N/A	0.000	2.735	
Subtotal T&E			35.839	8.196		6.641		9.614		3.500	63.790	N/A
Remarks: Misc. DT&E supports CVN68 USS NIMITZ Battle Group Interoperability.												
Program Management support												
Program Management support			5.676	1.045	N/A	0.940	N/A	0.326	N/A	0.670	8.657	N/A
Subtotal Management			5.676	1.045		0.940		0.326		0.670	8.657	N/A
Remarks: Program management support includes travel and support services.												
Total Cost			219.327	42.661	N/A	44.081	N/A	48.673	N/A	CONT	CONT	N/A
Remarks:												

R-1 SHOPPING LIST - Item No. 136 - 14 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification						DATE:				
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5		PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N*			PROJECT NAME AND NUMBER NULKA DECOY/K2190/K2441/K9081					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		3.097	9.714*							
RDT&E Articles Qty										
<p>A. (U) Mission Description and Budget Item Justification The Offboard Active Decoy (NULKA) is a joint cooperative program between the United States and Australia that developed an active offboard decoy which utilizes a broadband radio frequency repeater mounted atop a hovering rocket. NULKA is designed to counter a wide variety of present and future radar guided Anti-Ship Missiles by radiating a large radar cross section while flying a ship-like trajectory. The United States developed the electronic payload and fire control system, while Australia developed the hovering rocket. Currently the United States is completing efforts to integrate with Ship Self Defense System (SSDS), maintain Electromagnetic Compatibility with shipboard emitters, and integration with the Advanced Integrated Electronic Warfare System (AIEWS). In order to maintain our effectiveness in countering both current and evolving threats, it is critical to maintain a continuous RDT&E budget for payload modifications and testing. This will ensure we provide the fleet with a proven and effective capability that they can have complete confidence in when called on to go in harms way.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2001 Accomplishments: - (U) (\$3.097) Completed AIEWS integration. Prepared detailed specification for an infra-red (IR) material payload and dispensing mechanism. Conducted at-sea test to support tactics development.</p> <p>2. (U) FY 2002 Plan: (U) FY02 funding of (\$2.775) should be in PE 0604757N K2190 *(U) FY 02 also reflects Congressional Adds of (\$6.939). Project Numbers K2190 (\$1.388) and K9081 (\$5.551) apply. These should be reflected in Program Element 0604756/20167. Funding will be used to commence development and test of the SEARAM ECP to the RAM MK 39 Guided Missile Weapon System.</p> <p>3. (U) FY 2003 Plan: N/A</p>										

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2002
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA5	PROGRAM ELEMENT NAME AND NUMBER SHIP SELF DEFENSE 0604755N*	PROJECT NAME AND NUMBER NULKA Decoy/K2190/K2441/K9081

B. (U) Other Program Funding Summary

	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007
OPN Line 553000/553005	36.872	27.269	27.976	35.888	43.283	44.178	40.674
O&M,N Line 1D4D 14DR0	4.300	2.478	2.085	2.798	3.321	3.375	3.463

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDTE&E, N/BA5			SHIP SELF DEFENSE 0604757N			NULKA Decoy/K2190/K2441/K9081						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development/Softwr Dev	SS/CPFF	Raytheon Co., Tucson AZ				6.939*						
Product Development	WR	NSWC Crane, IN	2.838	0.417	10/00							
	WR	NSWC Indian Head, MD	2.047									
	WR	NSWC Dahlgren, VA	5.499	0.736	10/00	0.477						
	WR	NSWC Port Hueneme, CA	0.908	0.050	12/00	0.067						
	WR	NRL Washington, DC	3.723	0.541	12/00							
	SS/CPFF	Sippican Boston, MA	3.592			1.832						
	SS/CPFF	BAeA, Australia	5.953			0.100						
	SS/CPFF	TBD	0.000									
	PD	NAVSUP Washington, DC	2.400									
Subtotal Product Development			26.960	1.744		9.714						
Remarks: *Congressional Adds of \$6.939 ,Proj K2190 (1.388) and K9081 (\$5.551) should be in PE 64756/20167. Congressional Add of (+\$2.775) should be in PE 64757/k2190												
Support and Management	CC/CPFF	Anteon Arlington, VA	1.001	0.256	10/00	0.029						
	CC/CPFF	DTI		0.169	01/01							
	MIPR	GRCI	0.055									
Travel	Various	Various	1.845	0.117	10/00							
Miscellaneous	Various	Various	0.144	0.000	10/00	0.270						
Subtotal Support and Management			3.045	0.542		0.299						
Remarks:												
Test & Evaluation	WR	OPTEVFOR	0.250									
	WR	NSWC Pt. Mugu, CA.	0.567									
	WR	NRL Washington, DC	0.825	0.811								
Subtotal T&E			1.642	0.811								
Total Cost			31.647	3.097		2.775						
Remarks: FOR FY 03 AND OUT - SEE Pes 64756 and 64757.												

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER			PROJECT NAME AND NUMBER						
RDT&E, NBA 5	Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost		44.409	2.081 *						Cont.	Cont.
RDT&E Articles Qty										
<p>A. (U) Mission Description and Budget Item Justification: Advanced Integrated Electronic Warfare System (AIEWS) is the next-generation Electronic Warfare (EW) system which will be an integral part of the ship combat system (AEGIS and Ship Self Defense System (SSDS)). AIEWS will be developed in two sequential increments. Increment 1 will introduce advanced Electronic Support (ES) consisting of precision Electronic Support Measures (ESM), Specific Emitter Identification (SEI) and special receiver, increased processing throughput, open architecture, a standard combat system workstation with new Human Machine Interface (HMI), decoy integration, and EMI improvements. Increment 2 will introduce both Radio Frequency (RF) and Infrared (IR) advanced Electronic Attack (EA) capabilities including advanced off-board decoys. This development will support both backfit and forward fit. The Engineering and Manufacturing Development (EMD) prime contract includes Engineering Development Models (EDMs) to be used for multiple purposes: factory qualification tests, Landbased Testing (LBT) and Operational Assessment (OA), Wallops Island B/L 7 and 6 and SSDS combat system interface testing, Combat System Engineering Development System (CSEDS) testing and TECHEVAL/OPEVAL.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>(U) FY01 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> - (U) (\$33.875) Continued AIEWS Increment 1 EMD prime contract; build EDMs; Lab/Field Activity support included. - (U) (\$8.173) Continued CAPS software development. - (U) (\$0.615) Continued development of Increment 1 logistics efforts. - (U) (\$1.746) Continued test and evaluation efforts to support engineering, development and operational testing. <p>(U) FY02 PLAN:</p> <ul style="list-style-type: none"> - (U) (\$2.081) SBIR Phase III follow-on effort. <p>* Note: FY02 funding should be in new PE0604757N/K2309 for AIEWS.</p>										

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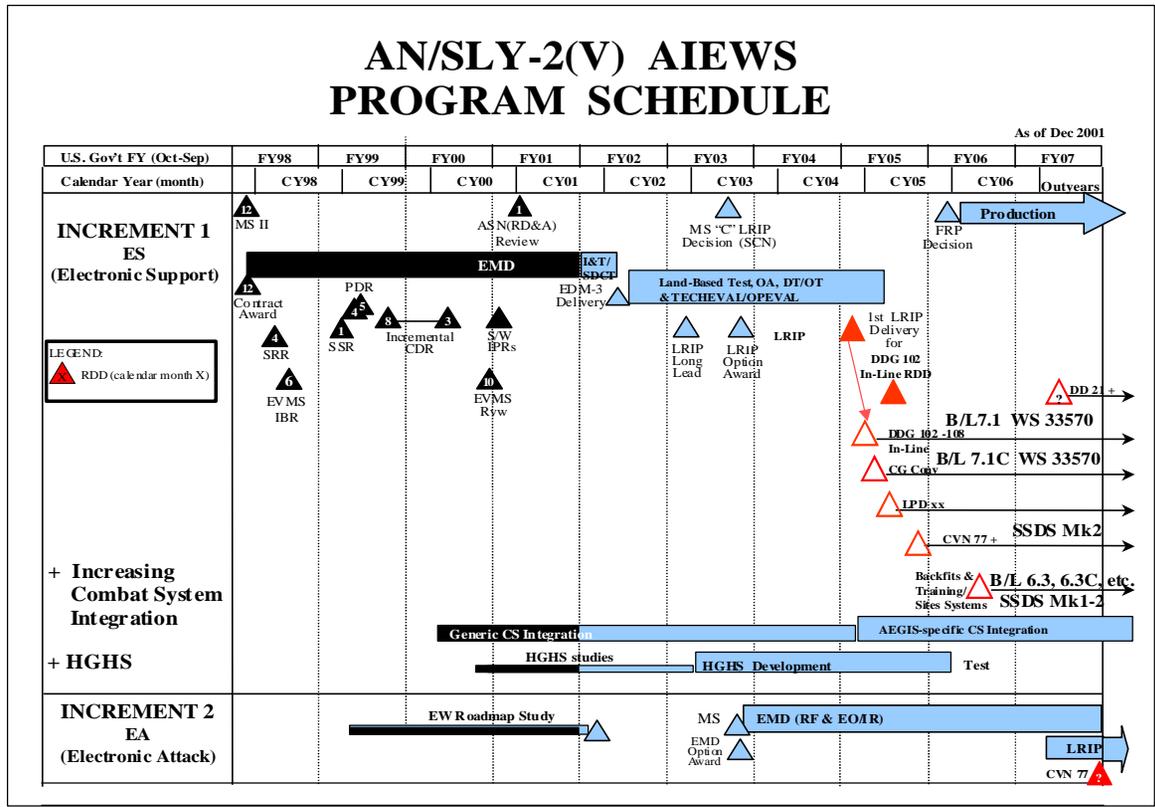
EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002																																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA 5		PROGRAM ELEMENT NAME AND NUMBER Ship Self Defense / 0604755N			PROJECT NAME AND NUMBER Advanced Integrated Electronic Warfare System (AIEWS)/K2309																																		
<p>(U) FY03 PLAN: N/A</p> <p>B. (U) Other program Funding Summary</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 10%;">FY2001</th> <th style="width: 10%;">FY2002</th> <th style="width: 10%;">FY2003</th> <th style="width: 10%;">FY2004</th> <th style="width: 10%;">FY2005</th> <th style="width: 10%;">FY2006</th> <th style="width: 10%;">FY2007</th> <th style="width: 10%;">To Complete</th> <th style="width: 10%;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN 231300</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">15.808</td> <td style="text-align: center;">16.136</td> <td style="text-align: center;">19.159</td> <td style="text-align: center;">33.100</td> <td style="text-align: center;">33.304</td> <td style="text-align: center;">CONT</td> <td style="text-align: center;">CONT</td> </tr> <tr> <td>AIEWS O&MN (14DR0)</td> <td></td> <td></td> <td style="text-align: center;">1.738</td> <td style="text-align: center;">1.721</td> <td style="text-align: center;">1.686</td> <td style="text-align: center;">1.711</td> <td style="text-align: center;">1.755</td> <td style="text-align: center;">CONT</td> <td style="text-align: center;">CONT</td> </tr> </tbody> </table> <p>C. (U) Acquisition Strategy: The AIEWS program awarded its Increment 1 EMD Cost Plus Award Fee (CPAF) contract based on best value as a result of a full and open competition. Included in the contract were phased price options for Increment 1 LRIP and production. Other options include Increment 2 EMD and LRIP for RF and IR countermeasures. Options for full contractor support including Direct Vendor Delivery (DVD), Software Support Activity (SSA) and engineering services are also part of the contract. A special receiver capability HGHS will be separately developed and funded beginning in FY 03. HGHS Acquisition Strategy being developed for FY03 start.</p> <p>D. (U) Schedule Profile: See attached schedule.</p>											FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Cost	OPN 231300	0	0	15.808	16.136	19.159	33.100	33.304	CONT	CONT	AIEWS O&MN (14DR0)			1.738	1.721	1.686	1.711	1.755	CONT	CONT
	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	To Complete	Total Cost																														
OPN 231300	0	0	15.808	16.136	19.159	33.100	33.304	CONT	CONT																														
AIEWS O&MN (14DR0)			1.738	1.721	1.686	1.711	1.755	CONT	CONT																														

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		February 2002
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER	PROJECT NAME AND NUMBER
RDT&E, N/BA 5	Ship Self Defense / 0604755N	Advanced Integrated Electronic Warfare System (AIEWS)/K2309



R-1 SHOPPING LIST - Item No. 136 - 20 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2002				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost *	Target Value of Contract
Hardware Development Inc 1	C/CPAF	LMIS Syracuse NY	66.457	27.872	11/00							
HGHS Development	TBD	TBD	-	-	-							
Hardware Development Inc 2	C/CPAF	LMIS Syracuse NY	-	-	-							
Software Development	C/CPAF	DSR Fairfax VA	23.477	6.804	11/00	2.081	02/02				TBD	TBD
Systems Engineering	WR/RCP	NSWCDD	5.070	1.194	10/00							
Combat Sys Modification/Integration	Various	Various	2.114	-	-							
Miscellaneous	Various	Various	6.623	2.762	10/00							
Q-70 Procurement	FFP	LM/Eagan	0.896	0.520	03/01						1.416	N/A
Award Fees	C/CPAF	LM & DSR	3.223	1.369	04/01							
Subtotal Product Development			107.860	40.521		2.081		0.000		CONT	CONT	
Remarks: * Total cost for Increment 1 hardware development identified in PE0604757N/K2309.												
Specialty Engineering												
Integrated Logistics Support												
Training												
Technical Engineering Services	WR/RCP	NRL	3.809	0.751	10/00					CONT	CONT	
Miscellaneous	Various	Various	4.685	1.043	10/00					CONT	CONT	
Subtotal Support			8.494	1.794		0.000		0.000		CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 136 - 21 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, NBA 5			Ship Self Defense / 0604755N			Advanced Integrated Electronic Warfare System (AIEWS)/K2309						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Test Planning/T&E Events	WR/RCP	NSWCDD	0.400	0.575	10/00					CONT	CONT	
Miscellaneous	Various	Various	0.530	1.171	10/00					CONT	CONT	
Test Events (Aircraft Services	Various	Various										
Subtotal T&E			0.930	1.746		0.000		0.000		CONT	CONT	
Remarks:												
Program Management Support	Various	Various	0.865	0.185						CONT	CONT	
Travel			0.166	0.163								
Subtotal Management			1.031	0.348		0.000		0.000		CONT	CONT	
Remarks:												
Total Cost			118.315	44.409		2.081		0.000		CONT	CONT	
Remarks:												

R-1 SHOPPING LIST - Item No. 136 - 22 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER				
RDT&E, N/BA 5	Ship Self Defense / 0604755N				Infrared Search and Track (IRST) 22649				
COST (\$ in Millions)	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Project Cost	8.072	2.676	9.320	2.469	0.000	0.000	0.000	0.000	75.060
RDT&E Articles Qty									
<p>A. (U) This project provides funding for the Infrared Search & Track (IRST) System. The threat from Sea Skimming Anti-Ship Cruise Missiles (ASCMs) is increasing at a substantial rate and is impacting the Navy's force protection and battle space dominance capability. The IRST program bolsters ships force protection capabilities by providing fully integrated passive detection/declaration of Sea Skimming ASCM threats. Because IRST operates in the infrared portion of the electromagnetic spectrum, it is immune to radar countermeasures and is not affected by atmospheric anomalies such as surface based ducting. In addition, IRST provides extremely accurate and precise elevation data at the horizon that allows immediate determination of hostile intent. IRST can also free up search radar resources by providing horizon search coverage where radar performance is marginal. The IRST provides passive augmentation to complement radar, electronic support measures and visual surveillance systems for air targets. IRST will identify those air targets to the ships' combat system.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS: 1. (U) FY 2001 ACCOMPLISHMENTS - (U) (\$1.251) Continued systems engineering; begin systems integration and testing. - (U) (\$1.948) Continued detector design and fabrication; conduct integration test. - (U) (\$.087) Contracted engineering services - (U) (\$1.068) Completed SPS design, fabrication, integration, and acceptance test. - (U) (\$1.319) Continued SPCU design modifications and fabrication. - (U) (\$.907) Continued software modifications. - (U) (\$.251) Continued integrated logistics, reliability, maintainability, and training support. - (U)(\$.919) Independent Systems Engineering. - (U) (\$.322) Program Management/Technical Support.</p>									

R-1 SHOPPING LIST - Item No. 136 - 23 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2002

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NAME AND NUMBER

PROJECT NAME AND NUMBER

RDT&E, N/BA 5

Ship Self Defense / 0604755N

Infrared Search and Track (IRST) 22649

2. (U) FY 2002 PLAN:

- (U) (\$.629) Continue hardware fabrication, integration, and test
- (U) (\$.302) Continue systems engineering; and begin systems integration and test.
- (U) (\$.774) Continue software modifications.
- (U) (\$.050) Continue integrated logistics, reliability, maintainability, and training support.
- (U) (\$.600) Independent systems engineering
- (U) (\$.087) Contract engineering services.
- (U) (\$.234) Program management/technical support.

3. (U) FY 2003 PLAN:

- (u) (\$5.153) Continue hardware fabrication, integration, and test
- (U) (\$.335) Continue systems engineering, systems integration and test
- (U) (\$.087) Contract engineering services
- (U) (\$1.975) Continue software modifications
- (U) (\$.055) Continue integrated logistics, reliability, maintainability, and training support
- (U) (1.300) Independent systems engineering
- (U) (\$.415) Program management/technical support

B. Other Program Funding Summary: Not Applicable

C. Acquisition Strategy: Not Applicable

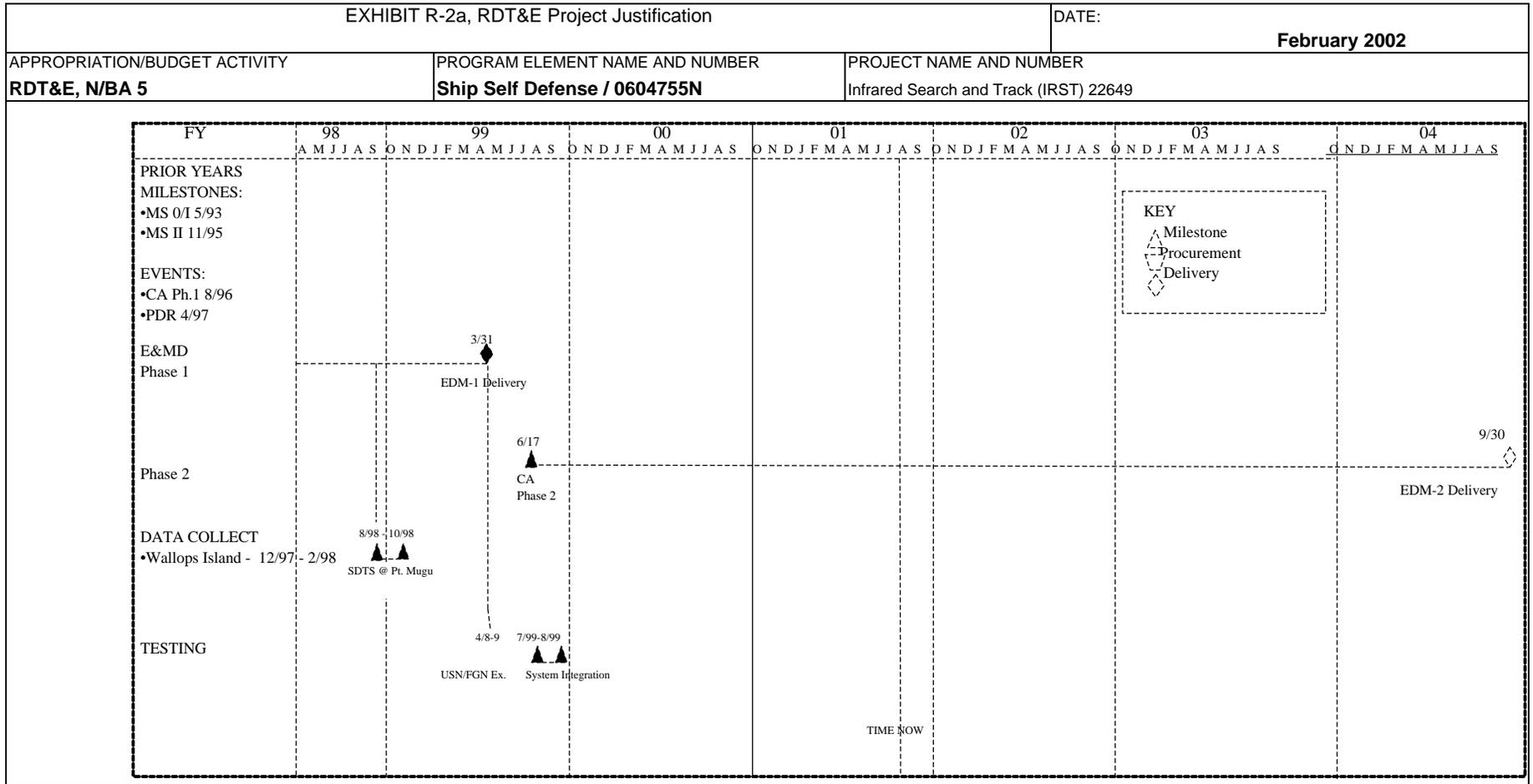
D. Schedule Profile: See attached

R-1 SHOPPING LIST - Item No. 136 - 24 of 136 - 27

UNCLASSIFIED

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R-1 SHOPPING LIST - Item No. 136 - 25 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

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Exhibit R-3 Cost Analysis (page 1)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Infrared Search and Track (IRST) 22649						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware (Detector)	C/CPAF	LOCKHEED MARTIN	42.682	2.033	11/00	0.629	11/01	5.153	11/01	0.150	50.647	
Ancillary Hardware Development												
Systems Engineering (SE&SI&T)	C/CPAF	LOCKHEED MARTIN		1.251		0.302		0.335		0.758	2.646	
Contract Engineering Services		LOCKHEED MARTIN		0.087		0.087		0.087		0.087	0.348	
Tooling												
SPS	C/CPAF	LOCKHEED MARTIN		1.068							1.068	
Award Fees												
SPCU		LOCKHEED MARTIN		1.357							1.357	
Subtotal Product Development			42.682	5.796		1.018		5.575		0.995	56.066	
Remarks:												
Development Support Equipment												
Software Development		Various	2.668	0.907	Various	0.774	Various	1.975	Various	0.227	6.551	
Training Development												
Integrated Logistics Support			0.679	0.160		0.050		0.055		0.047	0.991	
Configuration Management												
Technical Data												
GFE												
Subtotal Support			3.347	1.067		0.824		2.030		0.274	7.542	
Remarks:												

R-1 SHOPPING LIST - Item No. 136 - 26 of 136 - 27

UNCLASSIFIED

CLASSIFICATION:

UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)										DATE: February 2002		
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA 5			Ship Self Defense / 0604755N			Infrared Search and Track (IRST) 22649						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation		NSWC/Lockheed Martin Joint Exercise	2.300		11/00		11/01		11/02	0.000	2.300	
Operational Test & Evaluation		NSWC/Lockheed Martin, Integration Testing	0.875				11/00			0.000	0.875	
Independent Systems Engineering GFE		NSWC/Dahlgren	0.850	0.887		0.600		1.300		1.000	4.637	
Subtotal T&E			4.025	0.887		0.600		1.300		1.000	7.812	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management/Tech Support	Various	Various	2.382	0.299	11/00	0.200	11/01	0.380	11/02	0.175	3.436	
Travel			0.087	0.023		0.034		0.035		0.025	0.204	
											0.000	
Overhead												
Subtotal Management			2.469	0.322		0.234		0.415		0.200	3.640	
Remarks:												
Total Cost			52.523	8.072		2.676		9.320		2.469	75.060	
Remarks:												

R-1 SHOPPING LIST - Item No. 136 -27 of 136 - 27

UNCLASSIFIED