

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2, RDT&E Budget Item Justification						DATE: <b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>				R-1 ITEM NOMENCLATURE PE 0604300N - DDG 1000 Total Ship Systems Engineering				
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost	1,100.804	820.065	621.544	658.223	880.899	1,004.274	839.915	702.464
2464 / DDG 1000 System Design, Development and Int	985.907	735.965	429.173	328.059	383.921	435.539	245.071	150.602
2735 / Volume Search Radar	9.870	5.041	0.000	0.000	0.000	0.000	0.000	0.000
3105 / BLK II Seeker Technology Dev.	0.000	0.000	1.003	1.519	76.937	116.506	180.159	183.069
3106 / Combat Systems Integration	0.000	5.350	30.356	58.065	80.562	91.713	93.458	95.256
3107 / CG (X) Development	19.388	9.234	86.767	173.133	222.968	241.328	245.812	250.435
4009 / Advanced Gun System (AGS)	44.813	46.843	74.245	97.447	116.511	119.188	75.415	23.102
9999/ Undistributed RDTE, N Congressional Adds	40.826	17.632	0.000	0.000	0.000	0.000	0.000	0.000
<b>Defense Emergency Response Funds (DERF) Funds: N/A</b>								
<b>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</b>								
This Program Element (PE) provides funds for development of the DDG 1000 Class of U. S. Navy surface combatants, and CG(X), future cruiser development. The mission of the DDG 1000 class is to provide affordable and credible independent forward presence/deterrence and operate as an integral part of Naval, Joint or Combined Maritime Forces. DDG 1000 will provide advanced land attack capability in support of the ground campaign and contribute to Naval, Joint or Combined battlespace dominance in littoral operations. DDG 1000 will establish and maintain surface and sub-surface superiority, provide local air defense, and incorporate signature reduction to operate in all threat environments. DDG 1000 will have seamless Joint Interoperability to integrate all source information for battlespace awareness and weapons direction. CG(X) development efforts will mature the CG(X) design through Milestone B.								
<b>The following Congressional adds are contained in this Program Element:</b>								
<b>FY06 Congressional Adds:</b>								
-Project 9999-Congressional Adds: \$40.826- This project consists of the following FY06 Congressional adds: Naval smartships, Wireless maritime inspection system, Surface vessel electric actuator technology development, Floating area network, Permanent magnet motor, and CG(X) System Concept and design.								
<b>FY07 Congressional Adds:</b>								
-Project 9999-Congressional Adds: \$17.632 - This project consists of the following FY07 Congressional adds: Floating Area Network, Permanent Magnet Motor, Surface vessel electric actuator technology development. Bio/Nano Micro Electro-Mechanical Svstems (MEMS) Center for Defense Applications. Micro Electro-Mechanical Svstems (MEMS) Center for Defense Applications. and Smartlink Planar Scanne								

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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE			
<b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>		PE 0604300N - DDG 1000 Total Ship Systems Engineering			
<b>B. PROGRAM CHANGE SUMMARY:</b>					
Funding:		FY 2006	FY 2007	FY 2008	FY 2009
Previous President's Budget: (FY07 Pres Controls)		1,139.993	817.528	656.837	697.041
Current BES/President's Budget: (FY 08 Pres Controls)		1,100.804	820.065	621.544	658.223
Total Adjustments		<u>-39.189</u>	<u>2.537</u>	<u>-35.293</u>	<u>-38.818</u>
Summary of Adjustments					
Congressional rescissions		0.067	-9.000		
Congressional undistributed reductions		0.160	-3.175		
Congressional Add increases			17.700		
Undistributed General Adjustments		-1.395	-2.988	2.106	3.851
Pricing Adjustments				-0.232	-0.335
SBIR/STTR Transfer		-28.803			
Reprogrammings		-9.218			
Self Defense Test Ship/DDG1000 T&E				4.000	5.000
CG(X) Missile Realignment				-44.940	-75.030
CG(X) Development				-22.227	-20.304
LRLAP for DD(X)				26.000	48.000
Subtotal		<u>-39.189</u>	<u>2.537</u>	<u>-35.293</u>	<u>-38.818</u>
Schedule:					
Not Applicable					
Technical:					
Not					Applicable

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EXHIBIT R-2a, RDT&E Project Justification						DATE: <b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering			PROJECT NUMBER AND NAME 2464 - DDG 1000 System Design, Development & Integration			
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	<b>985.907</b>	<b>735.965</b>	<b>429.173</b>	<b>328.059</b>	<b>383.921</b>	<b>435.539</b>	<b>245.071</b>	<b>150.602</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This project encompasses DDG 1000 development efforts required to deliver the Flight I DDG 1000 Class Ships. Major efforts include software requirements analysis, architectural and design code and unit testing, integration, qualification testing, and Independent Verification and Validation (IV&V) for software releases 4-6; hullform testing at NSWC-CD; conducting testing communication and sensor aperature cosite and electromagnetic interference risk reductions testing for critical arrays; planning for IPS and ship control system testing and integration and tomahawk restrained firing test.

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 2464 - DDG 1000 System Design, Development & Integration

**B. Accomplishments/Planned Program**

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	82.000	0.000	0.000	0.000
RDT&E Articles Quantity				

In FY06, conduct MFR at-sea testing and continue S-Band Radar development, integration and testing and completion of Phase III Design Agent Contract.

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	708.289	600.492	395.304	287.294
RDT&E Articles Quantity				

Development of the DDG 1000 Flight I software, COTS/GOTS software acquisition, code and unit testing, integration, qualification testing, and Independent Verification and Validation (IV&V). Development of a total system software architecture that defines the relationships and interfaces among the software segments, elements, components, and/or configuration items. Conduct the following events for the remaining software releases: Software Specification Review (S-SSR), Software Preliminary Design Review (S-PDR), Software Critical Design Review (S-CDR), Software Integration Readiness Review (SIRR), Test Readiness Review (TRR) and Software Certification Panel (SCP). Conduct all developmental software test planning, conduct, test data analysis and reporting in accordance with the DDG 1000 TEMP. Perform total ship system design analysis. Perform systems engineering, develop, and fully integrate into the DDG 1000 System an ES system for DDG 1000.

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	195.618	135.473	29.869	35.765
RDT&E Articles Quantity				

Completion and testing of ship and warfare system engineering development models. Complete hullform testing at NSWC-Carderock. Planning for IPS and ship control system (SCS) testing and integration at NSWC-Philadelphia. Conduct communication and sense aperture cosine and electromagnetic interference risk reduction testing for critical arrays at the Wallops Island Test Facility. Conducted Tomahawk restrained firing test to verify Advanced Vertical Launching System (AVLS) protection measures. Conduct developmental testing and operation evaluation in accordance with TEMP. Conduct Live Fire Testing & vulnerability analysis in accordance with TEMP. Conduct signature range Non-Recurring Engineering (NRE) to upgrade ranges to support DDG 1000 test and evaluation.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2007</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 2464 - DDG 1000 System Design, Development & Integration		
<b>B. Accomplishments/Planned Program (Cont.)</b>				
	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.000	4.000	5.000
RDT&E Articles Quantity				
This funding is to support DDG 1000 specific testing on the Self Defense Test Ship.				
	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				
	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

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EXHIBIT R-2a, RDT&E Project Justification	DATE: <b>February 2007</b>
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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 2464 - DDG 1000 System Design, Development & Integration
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**C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To</u>	<u>Total</u>
PE 0603513N / Shipboard Sys Component Dev	44.476	49.993	9.450	9.561	9.606	9.622	9.791	9.967	CONT	CONT
BLI 211900 / SCN	706.240	2,557.268	2,953.523	2,462.783	2,500.662	2,264.771	2,370.489	2,065.435	CONT	CONT

**D. ACQUISITION STRATEGY:**

The funding in this program element supports the DDG 1000 dual lead ship acquisition strategy approved by an Acquisition Decision Memorandum (ADM) following a November 2005 Milestone B Defense Acquisition Board (DAB) decision.

**E. MAJOR PERFORMERS:**

**Major Contractors** - Raytheon, Lockheed Martin, BAE, Northrop Grumman Ship Systems, BIW  
**Government Field Activities** - NSWC Carderock, NSWC Dahlgren, NSWC Port Hueneme  
**Universities** - John Hopkins University, Applied Physics Lab (APL/JHU)

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Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2007</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DDG 1000 Total Ship Systems Engineering				2464 - DDG 1000 System Design, Development & Integration							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date (1)	FY 07 Cost	FY 07 Award Date (1)	FY 08 Cost	FY 08 Award Date (1)	FY 09 Cost	FY 09 Award Date (1)	Cost to Complete	Total Cost	Target Value of Contract
Initial System Concepts - Phase I	OTA	DD(X) Industry Team	54.800	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	54.800	54.800
Initial System Design - Phase II	OTA	DD(X) Industry Team	139.919	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	139.919	139.919
Primary H/W Development- Phase III	CPAF	DD(X) Design Agent (NGSS)	2,127.694	123.700	1QFY06	0.000	N/A	0.000	N/A	0.000	N/A	0.000	2,251.394	2,251.394
Ship Integration Development Phase I	CPAF	DDG 1000 Dev & Test (Raytheon)	0.000	657.000	1QFY06	662.000	1QFY07	404.000	1QFY08	303.400	1QFY09	CONT.	CONT.	0.000
Ship Suitability														
Systems Engineering														
Training Development														
Licenses														
Tooling														
GFE														
Award Fees														
Subtotal Product Development			2,322.413	780.700		662.000		404.000		303.400		CONT.	CONT.	2,446.113
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		01/00		0.000	0.000	
Remarks:														

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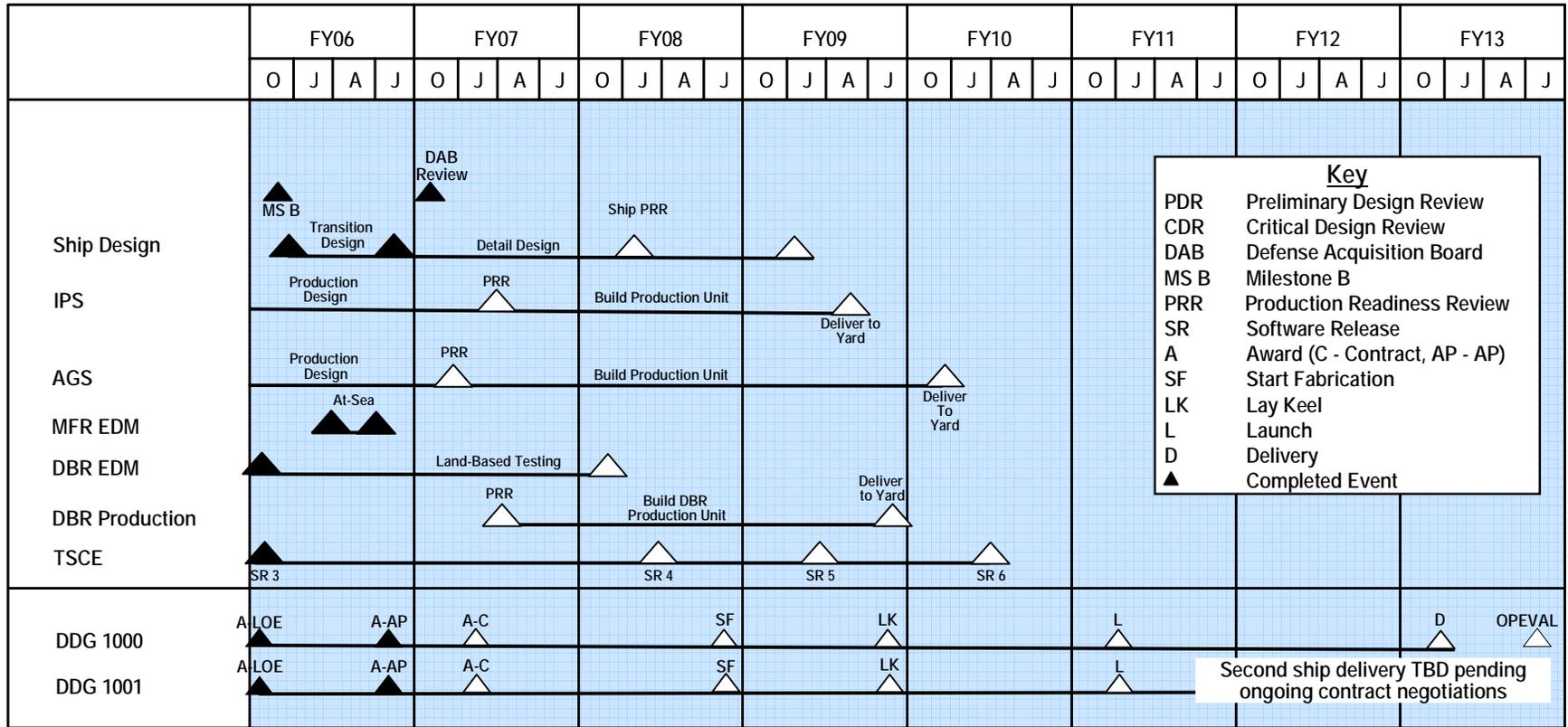
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Exhibit R-3 Cost Analysis (page 2)										DATE: <b>February 2007</b>				
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT						PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA-5</b>				PE 0604300N - DDG 1000 Total Ship Systems Engineering						2464 - DDG 1000 System Design, Development & Integration				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Live Fire Test & Evaluation	OTA	DD(X) Industry Teams	4.875	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	4.875	4.875
Live Fire Test & Evaluation	CPAF	DD(X) Design Agent	45.800	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	45.800	45.800
Live Fire Test & Evaluation	CPAF	Raytheon	0.000	27.100	1QFY06	41.000	1QFY07	0.000	N/A	0.000	N/A	CONT	CONT	
Live Fire Test & Evaluation	WR	NSWC CD Bethesda MD	22.733	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	22.733	22.733
Live Fire Test & Evaluation	WR	NSWC DD Dahlgren VA	3.400	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	3.400	3.400
Live Fire Test & Evaluation	Various	Various	20.376	12.000	1QFY06	0.000	N/A	4.000	N/A	5.068	N/A	CONT	CONT	
GFE														
Award Fees														
Subtotal T&E			97.184	39.100		41.000		4.000		5.068		CONT	CONT	76.808
Remarks: In FY08 and FY09, Live Fire Test & Evaluation "various" funding above is to support AAW Test and Evaluation Enterprise funding for the Self Defense Test Ship (\$106.3M in FY08/\$109.8M in FY09).														
Contractor Engineering Support	GSA/FFP	Anteon Arlington VA	25.397	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	25.397	25.397
	GSA	GRCI, Falls Church VA	8.361	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	8.361	8.361
	CPAF	Seaport, NAVSEA	7.080	18.500	1QFY06	3.000	1QFY07	0.000	N/A	0.000	N/A	CONT	CONT	
	Misc	Various	12.564	10.400	1QFY06	0.000	N/A	0.000	N/A	0.000	N/A	CONT	CONT	
Government Engineering Support	WR	NSWC DD Dahlgren VA	77.450	26.600	1QFY06	7.586	1QFY07	7.300	1QFY08	7.000	1QFY09	CONT	CONT	
	WR	NSWC CD Bethesda MD	50.095	25.710	1QFY06	8.100	1QFY07	8.100	1QFY08	8.100	1QFY09	CONT	CONT	
	WR	NSWC CR Crane IN	5.901	6.000	1QFY06	1.500	1QFY07	0.000	N/A	0.000	N/A	CONT	CONT	
	WR	NSWC PHD Pt Hueneme CA	10.445	10.303	1QFY06	1.000	1QFY07	0.000	N/A	0.000	N/A	CONT	CONT	
	WR	SSCSD San Diego CA	9.442	6.690	1QFY06	6.300	1QFY07	4.773	1QFY08	3.491	1QFY09	CONT	CONT	
	WR	NUWC/N Newport RI	6.550	9.500	1QFY06	0.500	1QFY07	0.000	N/A	0.000	N/A	CONT	CONT	
	WR	NSWC/PC Panama City, FL	3.027	10.600	1QFY06	0.000	N/A	0.000	N/A	0.000	N/A	CONT	CONT	
	Various	Other Govt Activities	18.861	20.000	1QFY06	0.000	N/A	0.000	N/A	0.000	N/A	CONT	CONT	
Program Management Support	Various	Various	18.642	10.107	1QFY06	0.000	N/A	0.000	N/A	0.000	N/A	CONT	CONT	
Travel	Various	Various	3.912	1.500	1QFY06	0.779	1QFY07	1.000	1QFY08	1.000	1QFY09	CONT	CONT	
Labor (Research Personnel)	CPFF	APL/JHU Laurel MD	25.129	10.197	1QFY06	4.200	1QFY07	0.000	N/A	0.000	N/A	CONT	CONT	
SBIR Assessment														
Subtotal Management			282.856	166.107		32.965		21.173		19.591		CONT	CONT	33.758
Remarks: In FY07, the majority of Production and Acquisition Support will transition to SCN funds.														
Total Cost			2,702.453	985.907		735.965		429.173		328.059		CONT.	CONT.	2,556.679
Remarks:														

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EXHIBIT R-4, Schedule Profile		DATE: <b>February 2007</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDTE&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 2464 - DDG 1000 System Design, Development & Integration	





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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2007</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering			PROJECT NUMBER AND NAME 2735 - Volume Search Radar (VSR)			
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	<b>9.870</b>	<b>5.041</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

This project provides funds for the development of the S-Band Volume Search Radar (VSR) in association with DDG 1000. This provides DDG 1000 and other applicable surface ships with an affordable, high performance air search radar. This system is based on solid state, active array radar technology and will provide search, detect, and track while dramatically reducing manning and life-cycle costs associated with multiple systems that perform these functions today. VSR provides long range above-the-horizon surveillance and timely cueing to Multi-Function Radar (MFR). A Test Article will be available in FY 06 to support Developmental Test/Operational Assessment (DT/OA) land-based and at-sea testing.

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 2735 - Volume Search Radar (VSR)

**B. Accomplishments/Planned Program**

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	9.870	5.041	0.000	0.000
RDT&E Articles Quantity				

Government Technical Engineering Services for VSR Engineering and Manufacturing Development. Perform oversight and assessment of VSR Engineering and Manufacturing Development efforts including Test and Evaluation. Support VSR Land Based Testing in FY07.

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 2735 - Volume Search Radar (VSR)
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**C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To</u>	<u>Total</u>
PE 0603513N / Shipboard Sys Component Dev	44.476	49.993	9.450	9.561	9.606	9.622	9.791	9.967	CONT	CONT
BLI 211900 / SCN	706.240	2,557.268	2,953.523	2,462.783	2,500.662	2,264.771	2,370.489	2,065.435	CONT	CONT

**D. ACQUISITION STRATEGY:**

The funding in this program element supports the DDG 1000 dual lead ship acquisition strategy approved by an Acquisition Decision Memorandum (ADM) following a November 2005 Milestone B Defense Acquisition Board (DAB) decision.

**E. MAJOR PERFORMERS:**

- DD(X) Design Agent** - Northrop Grumman Ship Systems
- Major Subcontractors** - Raytheon, Lockheed Martin
- Government Field Activities** - NAWC China Lake, NAWC Pt Mugu, NAWC TSD, NSWC Carderock, NSWC Crane, NSWC Dahlgren, NSWC Newport, NSWC Panama City, NSWC Port Hueneme, Naval Research Laboratory, SPAWAR Systems Center
- Universities** - John Hopkins University / Applied Physics Laboratory, Applied Research Labs at University of Texas, University of Washington and Penn State University, Georgia Tech Research Institute

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Exhibit R-3 Cost Analysis (page 1)											DATE: <b>February 2007</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT								PROJECT NUMBER AND NAME				
RDT&E, N / BA-5			PE 0604300N - DDG 1000 Total Ship Systems Engineering								2735 - Volume Search Radar (VSR)				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date (1)	FY 07 Cost	FY 07 Award Date (1)	FY 08 Cost	FY 08 Award Date (1)	FY 09 Cost	FY 09 Award Date (1)	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development	OTA	DDG 1000 Industry Team	50.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	50.000	50.000	
	CPAF	DDG 1000 Design Agent (NGSS)	175.786	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	175.786	175.786	
Ship Integration	CPAF	Lockheed Martin SBAR N00024-02-C-5321	6.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	6.000	6.000	
Ship Suitability															
Systems Engineering															
Training Development															
Licenses															
Tooling															
GFE															
Award Fees															
<b>Subtotal Product Development</b>			<b>231.786</b>	<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>	<b>231.786</b>	<b>231.786</b>	
Development Support															
Software Development															
Training Development															
Integrated Logistics Support															
Configuration Management															
Technical Data															
GFE															
Award Fees															
<b>Subtotal Support</b>			<b>0.000</b>	<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	
Remarks:															

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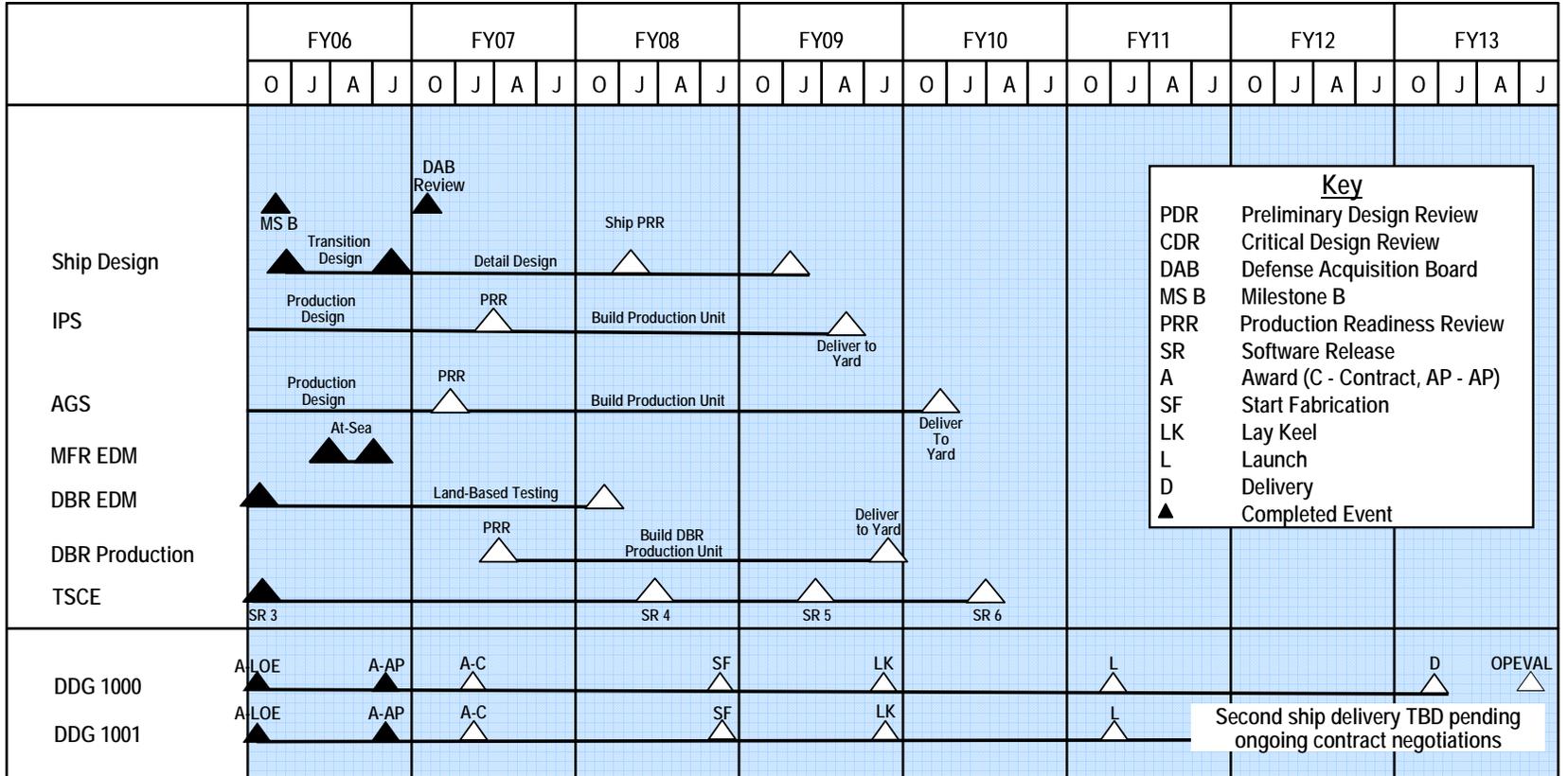
CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)											DATE: <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DDG 1000 Total Ship Systems Engineering				2735 - Volume Search Radar (VSR)							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test Evaluation	CPAF	SCSC Wallops Island VA	0.600	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.600	0.600
	Various	Various	0.497	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.497	0.497
Subtotal T&E			1.097	0.000		0.000		0.000		0.000		0.000	1.097	1.097
Remarks:														
Contractor Engineering Support														
Government Engineering Support	WX	NSWC DD Dahlgren VA	3.706	2.115	2QFY06	0.850	1QFY07	0.000	N/A	0.000	N/A	0.000	6.671	
	WX	NSWC PHD Pt Hueneme CA	1.630	1.345	2QFY06	0.325	1QFY07	0.000	N/A	0.000	N/A	0.000	3.300	
	WX	Various	15.242	3.744	2QFY06	3.766	1QFY07	0.000	N/A	0.000	N/A	0.000	22.752	
Program Management Support	CPFF	Various	2.873	2.666	2QFY06	0.100	1QFY07	0.000	N/A	0.000	N/A	0.000	5.639	
Travel														
Labor (Research Personnel)														
SBIR Assessment														
Subtotal Management			23.451	9.870		5.041		0.000		0.000		0.000	38.362	0.000
Remarks:														
Total Cost			256.334	9.870		5.041		0.000		0.000		0.000	271.245	232.883
Remarks:														

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-4, Schedule Profile			DATE: <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering			PROJECT NUMBER AND NAME 2735 - Volume Search Radar (VSR)	





# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2007</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering			PROJECT NUMBER AND NAME 3105 - BLK II Seeker Technology Dev.			
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	<b>0.000</b>	<b>0.000</b>	<b>1.003</b>	<b>1.519</b>	<b>76.937</b>	<b>116.506</b>	<b>180.159</b>	<b>183.069</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

CG(X), the future cruiser, will focus on providing the Air and Missile Defense capabilities as part of the 21st Century family of surface combatants. CG(X) will replace the aging CG-47 class as they reach the end of their 35 year service life. This project encompasses efforts for the missile seeker development and integration within the combat system computer programs into the CG(X) class combat system. These missile seeker development and missile and combat system integration efforts include systems engineering, analysis, computer program development/modification, interface design, technical documentation, test site development and system testing to ensure fully functional systems integration.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 3105 - BLK II Seeker Technology Dev.

**B. Accomplishments/Planned Program**

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.003	1.519
RDT&E Articles Quantity				

FY08: Initiate CG(X) Missile Seeker Preliminary Design studies and analysis to support missile and total ship system requirements documentation.  
 FY09: Continue CG(X) Preliminary Design studies and System integration. Conduct design between radar system and missile system designs.

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>				PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering			PROJECT NUMBER AND NAME 3105 - BLK II Seeker Technology Dev.			
<b>C. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI 211400 / SCN	0.000	0.000	0.000	0.000	0.000	3,234.494	0.000	3,064.439	CONT	CONT
<b>D. ACQUISITION STRATEGY:</b>										
TBD - Will be developed in FY07 in accordance with concept resulting from Analysis of Alternative and leading to Milestone A, scheduled for 4th quarter FY07.										
<b>E. MAJOR PERFORMERS:</b>										
<b>Contractors</b> - TBD - Based on results of Analysis of alternatives and acquisition strategy developed for Milestone A, scheduled for 4th quarter FY07.										
<b>Field Activities</b> - NSWC Carderock, NSWC Dahlgren, NSWC Port Hueneme, NSWC Port Hueneme										
<b>Universities</b> - JHUAPL										

# UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2007</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DDG 1000 Total Ship Systems Engineering					3105 - BLK II Seeker Technology Dev.				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date (1)	FY 06 Cost	FY 06 Award Date (1)	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ship Integration												
Ship Suitability												
Systems Engineering												
Training Development												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.000	0.000		0.000		0.000		0.000	0.000	
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	
Remarks:												

**UNCLASSIFIED**

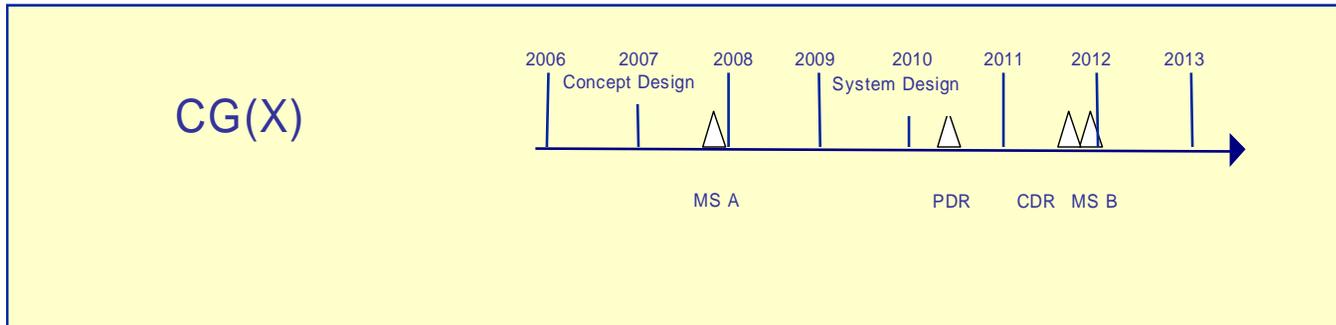
**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)											DATE: <b>February 2007</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT NUMBER AND NAME								PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA-5</b>			PE 0604300N - DDG 1000 Total Ship Systems Engineering								3105 - BLK II Seeker Technology Dev.				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Developmental Test Evaluation															
Subtotal T&E			0.000	0.000		0.000		0.000		0.000		0.000	0.000		
Remarks:															
Contractor Engineering Support	TBD	Various						0.403	1QFY08	0.600	1QFY09	CONT	CONT		
Government Engineering Support	TBD	Various						0.600	1QFY08	0.919	1QFY09	CONT	CONT		
Program Management Support															
Travel															
Labor (Research Personnel)															
SBIR Assessment															
Subtotal Management			0.000	0.000		0.000		1.003		1.519		CONT	CONT		
Remarks:															
Total Cost			0.000	0.000		0.000		1.003		1.519		CONT	CONT		
Remarks:															

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: <b>February 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 3105 - BLK II Seeker Technology Dev.





# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2007</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering			PROJECT NUMBER AND NAME 3106 - Combat Systems Integration			
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	<b>0.000</b>	<b>5.350</b>	<b>30.356</b>	<b>58.065</b>	<b>80.562</b>	<b>91.713</b>	<b>93.458</b>	<b>95.256</b>
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

CG(X), the future cruiser, will focus on providing the Air and Missile Defense capabilities as part of the 21st Century family of surface combatants. CG(X) will replace the aging CG-47 class as they reach the end of their 35 year service life. This project encompasses efforts for the integration of communications, electronics, command and control, weapons, surveillance and shipboard systems and combat system computer programs into the CG(X) class combat system. These integration efforts include systems engineering, analysis, computer program development/modification, interface design, technical documentation, combat system test site development and system testing to ensure fully functional combat systems integration.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 3106 - Combat Systems Integration

**B. Accomplishments/Planned Program**

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.850	21.939	43.571
RDT&E Articles Quantity				

FY07: Commence system integration requirements studies and assess DD(X) combat system component applicability to CG(X). FY08: Award Mission System Engineering and Integration Agent contract. Initiate Preliminary Design and System Integration for the CG(X) Total Ship System. Develop Ship Systems Baseline concepts. FY09: Initiate Total Ship Systems Integration requirements. Allocate requirements to functional baseline design. Develop ship system baseline system element requirements.

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	1.240	2.030	3.493
RDT&E Articles Quantity				

FY07: Establish Technical Team responsible for participation, oversight and monitoring of system integration effort. FY08: Development of top level Total Ship System Requirements documents. Review and evaluation of total ship system requirements, preliminary designs and contract designs. FY09: Evaluation of contract design against top level requirements. Review of contract design allocation and analysis.

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	3.260	6.387	11.001
RDT&E Articles Quantity				

FY07: Conduct Milestone A preparations, to include contract solicitation development for systems integration efforts. FY08: Initiate development of program documentation based on result of Analysis of Alternatives and finalized acquisition strategy. Develop acquisition documentation for competitive evaluation and selection process. FY09: Conduct contract administration for Mission System Engineering and Integration contract. Initiate development of Ship Detailed Contract Design Contract source selection documentation.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>				PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering			PROJECT NUMBER AND NAME 3106 - Combat Systems Integration			
<b>C. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI 211400 / SCN	0.000	0.000	0.000	0.000	0.000	3,234.494	0.000	3,064.439	CONT	CONT
<b>D. ACQUISITION STRATEGY:</b>										
TBD - Will be developed in FY07 in accordance with concept resulting from Analysis of Alternative and leading to Milestone A, scheduled for 4th quarter FY07.										
<b>E. MAJOR PERFORMERS:</b>										
<b>Contractors</b> - TBD - Based on results of Analysis of alternatives and acquisition strategy developed for Milestone A, scheduled for 4th quarter FY07.										
<b>Field Activities</b> - NSWC Carderock, NSWC Dahlgren, NSWC Port Hueneme										
<b>Universities</b> - JHUAPL										

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)											DATE: <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY						PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>						PE 0604300N - DDG 1000 Total Ship Systems Engineerin					3106 - Combat Systems Integration			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date (1)	FY 07 Cost	FY 07 Award Date (1)	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development														
Ship Integration	TBD	Various						24.363	3QFY08	46.276	3QFY09	CONT	CONT	
Ship Suitability														
Systems Engineering														
Training Development														
Licenses														
Tooling														
GFE														
Award Fees														
Subtotal Product Development			0.000	0.000		0.000		24.363		46.276		0.000	0.000	
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	0.000	
Remarks:														

**UNCLASSIFIED**

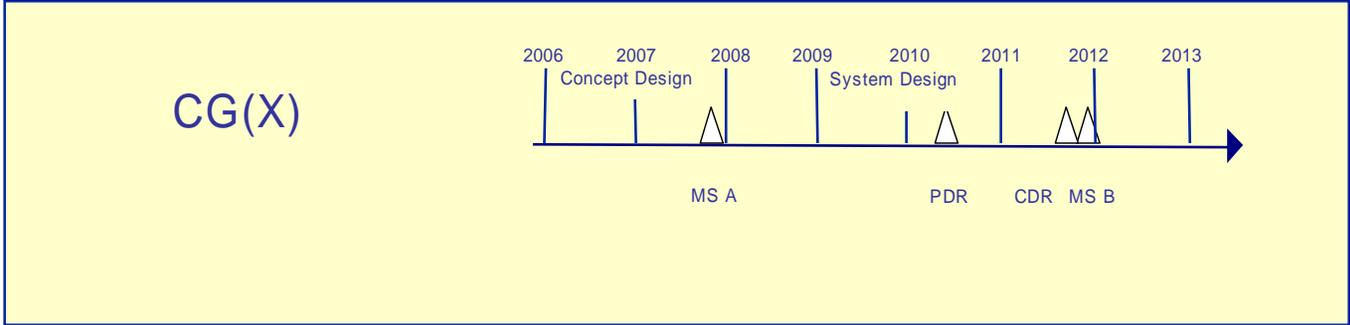
**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)											DATE: <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA-5</b>					PE 0604300N - DDG 1000 Total Ship Systems Engineering					3106 - Combat Systems Integration				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test Evaluation														
Subtotal T&E			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks:														
Contractor Engineering Support	TBD	Various				1.605	1QFY07	1.778	1QFY08	3.345	1QFY09	CONT	CONT	
Government Engineering Support	TBD	Various				3.745	1QFY07	4.215	1QFY08	8.444	1QFY09	CONT	CONT	
Program Management Support														
Travel														
Labor (Research Personnel)														
SBIR Assessment														
Subtotal Management			0.000	0.000		5.350		5.993		11.789		CONT	CONT	
Remarks:														
Total Cost			0.000	0.000		5.350		30.356		58.065		CONT	CONT	
Remarks:														

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: <b>February 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RD&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 3106 - Combat Systems Integration





# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2007</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering			PROJECT NUMBER AND NAME 3107 - CG (X) Development				
COST (\$ in Millions)		FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost		<b>19.388</b>	<b>9.234</b>	<b>86.767</b>	<b>173.133</b>	<b>222.968</b>	<b>241.328</b>	<b>245.812</b>	<b>250.435</b>
RDT&E Articles Qty									

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

CG(X), the future cruiser, will focus on providing the Air and Missile Defense capabilities as part of the 21st Century family of surface combatants. CG(X) will replace the aging CG-47 class as they reach the end of their 35 year service life. This project encompasses efforts for total ship system development and integration of Hull, Mechanical and Electrical (HM&E) and shipboard systems into the CG(X) class. These engineering development and integration efforts include systems engineering, analysis, computer program development, interface design, Engineering Development Models (EDMs), technical documentation and system testing to ensure a fully functional CG(X) system design. This project will mature the CG(X) design through several ship design cycles and baselines. Preparation and execution of a program level Preliminary Design Review (PDR) and Critical Design Review (CDR) will occur through these efforts.

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**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 3107 - CG (X) Development

**B. Accomplishments/Planned Program**

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	14.500	2.000	64.762	129.824
RDT&E Articles Quantity				

FY06: Support the Maritime Air and Missile Defense of the Joint Forces (MAMDJF) Initial Capabilities Document (ICD) review to gain final Joint Requirements Oversight Council (JROC) approval. Conduct the Integrating Integrated Product Team (IIPT) and Overarching Integrated Product Team (OIPT) events in support of the Acquisition Decision Memorandum (ADM) for the Analysis of Alternatives (AoA). Plan and begin execution of the Analysis of Alternatives effort. FY07: Complete the AoA and brief results to the Defense Acquisition Executive (DAE). FY08: Award Mission System Engineering and Integration Agent contract. Initiate Preliminary Design and System Integration for the CG(X) Total Ship System. Develop Ship Systems Baseline concepts. FY09: Initiate Total Ship Systems Integration requirements. Allocate requirements to functional baseline design. Develop ship system baseline system element requirements.

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	4.000	1.452	5.817	11.208
RDT&E Articles Quantity				

FY06/07: Conduct Concept Design model development and upgrades. Conduct CG(X) technology assessment. FY08: Development of top level Total Ship System Requirements documents. Review and evaluation of total ship system requirements, preliminary designs and contract designs. FY09: Evaluation of contract design against top level requirements. Review of contract design allocation and analysis.

	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.888	5.782	16.188	32.101
RDT&E Articles Quantity				

FY06/07: Execute Milestone A preparation and acquisition strategy development. FY08: Initiate development of program documentation based on results of Analysis of Alternatives and finalized acquisition strategy. Develop acquisition documentation for competitive evaluation and selection process. FY09: Conduct contract administration for Mission System Engineering and Integration contract. Initiate development of Ship Detailed Contract Design Contract source selection documentation.

# UNCLASSIFIED

**CLASSIFICATION:**

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>			PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineerin				PROJECT NUMBER AND NAME 3107 - CG (X) Development			
<b>C. OTHER PROGRAM FUNDING SUMMARY:</b>										
<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
BLI 211400 / SCN	0.000	0.000	0.000	0.000	0.000	3,234.494	0.000	3,064.439	CONT	CONT
<b>D. ACQUISITION STRATEGY:</b>										
TBD - Will be developed in FY07 in accordance with concept resulting from Analysis of Alternative and leading to Milestone A, scheduled for 4th quarter FY07.										
<b>E. MAJOR PERFORMERS:</b>										
Contractors - TBD - Based on results of Analysis of alternatives and acquisition strategy developed for Milestone A, scheduled for 4th quarter FY07.										
Field Activities - NSWC Dahlgren, NSWC Port Hueneme, NSWC Corona, NSWC Carderock										
Universities - JHU/APL										

**UNCLASSIFIED**

**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 1)											DATE: <b>February 2007</b>				
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT						PROJECT NUMBER AND NAME				
<b>RDT&amp;E, N / BA-5</b>					PE 0604300N - DDG 1000 Total Ship Systems Engineering						3107 - CG (X) Development				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development															
Ship Integration	TBD	Various						69.500	3QFY08	138.412	3QFY09	CONT	CONT		
Ship Suitability															
Systems Engineering															
Training Development															
Licenses															
Tooling															
GFE															
Award Fees															
<b>Subtotal Product Development</b>			0.000	0.000		0.000		69.500		138.412		0.000	0.000		
Remarks:															
Development Support															
Software Development															
Training Development															
Integrated Logistics Support															
Configuration Management															
Technical Data															
GFE															
Award Fees															
<b>Subtotal Support</b>			0.000	0.000		0.000		0.000		0.000		0.000	0.000		
Remarks:															

**UNCLASSIFIED**

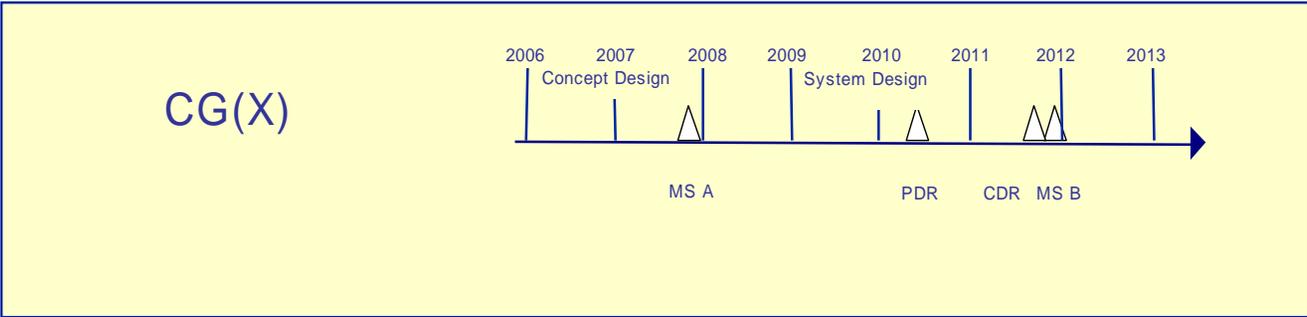
**CLASSIFICATION:**

Exhibit R-3 Cost Analysis (page 2)											DATE: <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>					PROGRAM ELEMENT PE 0604300N - DD(X) Total Ship Systems Engineering					PROJECT NUMBER AND NAME 3107 - CG (X) Development				
Cost Categories	Contract Method & Type	Performing Activity & Location	Total P Y s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test Evaluation														
Subtotal T&E			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks:														
Contractor Engineering Support	TBD	Various		4.847	2QFY06	2.320	1QFY07	5.757	1QFY08	11.904	1QFY09	CONT	CONT	
Government Engineering Support	TBD	Various		14.541	2QFY06	6.914	1QFY07	11.510	1QFY08	22.817	1QFY09	CONT	CONT	
Program Management Support														
Travel														
Labor (Research Personnel)														
SBIR Assessment														
Subtotal Management			0.000	19.388		9.234		17.267		34.721		CONT	CONT	
Remarks:														
Total Cost			0.000	19.388		9.234		86.767		173.133		CONT	CONT	
Remarks:														

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: <b>February 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 3107 - CG (X) Development





# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2007</b>	
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering			PROJECT NUMBER AND NAME 4009 - Advanced Gun System (AGS)			
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	44.813	46.843	74.245	97.447	116.511	119.188	75.415	23.102
RDT&E Articles Qty								

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

These funds provide for the development of the Advanced Gun System (AGS) and the development, qualification, transition to production and initial production of the Long Range Attack Projectile (LRLAP) associated with the development of DDG 1000. The AGS will consist of a major caliber gun, an automated ammunition handling system, and a family of munitions/propelling charges. The AGS will, at a minimum, meet the Land Attack and Surface Dominance Missions assigned to the gun system. The system will provide a high rate of fire (approximately 10 rounds per minute) with a magazine capacity sufficient in size for meeting USMC operational requirements. LRLAP will be stored throughout its life cycle in an 8 round pallet which is handled by the AGS magazine. By palletizing the munition AGS is able to significantly reduce manning and improve munition reliability, safety and resupply. The LRLAP EDM guided flight tests began in Dec 2004. System Design and Development began in FY06 with final land based qualification testing planned in FY09 and FY10. The Long Range Land Attack Projectile (LRLAP) will deliver a high explosive unitary payload with Global Positioning System (GPS) accuracy.

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<b>B. Accomplishments/Planned Program</b>				
	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	1.037	2.388	0.000	0.000
RDT&E Articles Quantity				
AGS Qualification				
	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	43.776	44.455	49.432	49.000
RDT&E Articles Quantity				
LRLAP System Design, Development and qualification testing.				
	FY 06	FY 07	FY 08	FY 09
Accomplishments/Effort/Subtotal Cost	0.000	0.000	24.813	48.447
RDT&E Articles Quantity				
Procurement of LRLAP rounds for qualification testing.				

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DD(X) Total Ship Systems Engineering	PROJECT NUMBER AND NAME 4009 - Advanced Gun System (AGS)
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**C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>To Complete</u>	<u>Total Cost</u>
PE 0603513N / Shipboard Sys Component Dev	44.476	49.993	9.450	9.561	9.606	9.622	9.791	9.967	CONT	CONT
BLI 211900 / SCN	706.240	2,557.268	2,953.523	2,462.783	2,500.662	2,264.771	2,370.489	2,065.435	CONT	CONT

**D. ACQUISITION STRATEGY:**

The funding in this program element supports the DDG 1000 dual lead ship acquisition strategy approved by an Acquisition Decision Memorandum (ADM) following a November 2005 Milestone B Defense Acquisition Board (DAB) decision.

**E. MAJOR PERFORMERS:**

**Major Contractors**- BAE Systems, Lockheed Martin and Northrop Grumman Ship Systems  
**Field Activities** - NSWC Carderock, NSWC Dahlgren, NSWC Port Hueneme, NSWC Port Hueneme Louisville detachment, NSWC Indian Head  
**Universities** - N/A

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Exhibit R-3 Cost Analysis (page 1)											DATE: <b>February 2007</b>				
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT					PROJECT NUMBER AND NAME					
<b>RDT&amp;E, N / BA-5</b>					PE 0604300N - DDG 1000 Total Ship Systems Engineering					4009 - Advanced Gun System (AGS)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date (2)	FY 07 Cost	FY 07 Award Date (2)	FY 08 Cost	FY 08 Award Date (2)	FY 09 Cost	FY 09 Award Date (2)	Cost to Complete	Total Cost	Target Value of Contract	
Primary Hardware Development	CPAF	DDG 1000 Design Agent	242.684	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	242.684	242.684	
	845/804	DDG 1000 Industry Teams	177.435	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	177.435	177.435	
	CPAF	BAE/Lockheed Martin	0.000	44.813	1QFY 06	46.843	1QFY 07	66.000	1QFY08	81.000	1QFY09	CONT	CONT		
Ship Integration														0.000	
Ship Suitability															0.000
Systems Engineering															0.000
Training Development															0.000
Licenses															0.000
Tooling															0.000
GFE															0.000
Award Fees															0.000
<b>Subtotal Product Development</b>			<b>420.119</b>	<b>44.813</b>		<b>46.843</b>		<b>66.000</b>		<b>81.000</b>		<b>CONT</b>	<b>CONT</b>	<b>420.119</b>	
Remarks:															
Development Support															0.000
Software Development															0.000
Training Development															0.000
Integrated Logistics Support															0.000
Configuration Management															0.000
Technical Data															0.000
GFE															0.000
Award Fees															0.000
<b>Subtotal Support</b>			<b>0.000</b>	<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	
Remarks:															

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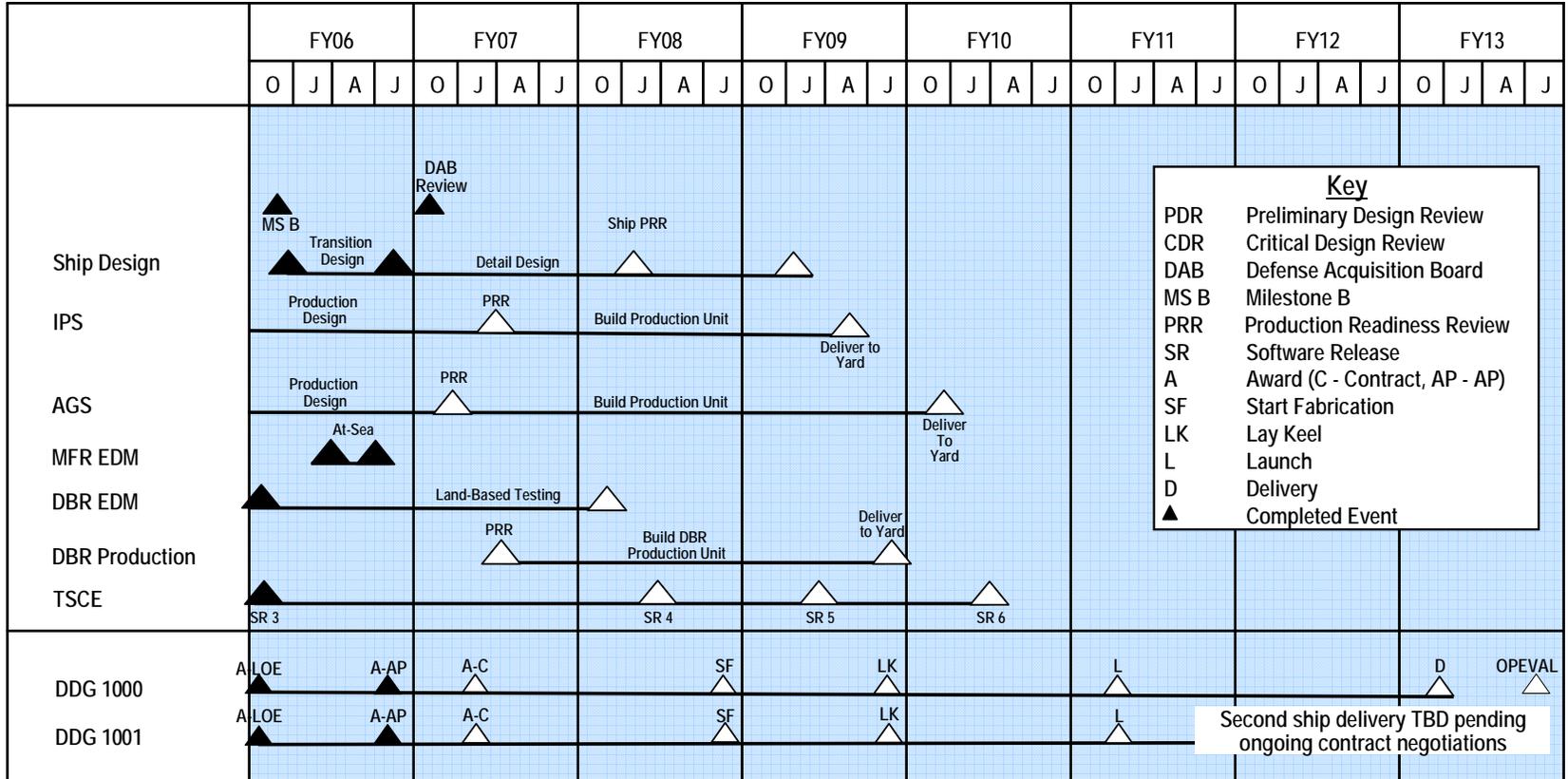
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Exhibit R-3 Cost Analysis (page 2)											DATE: <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT							PROJECT NUMBER AND NAME			
<b>RDT&amp;E, N / BA-5</b>				PE 0604300N - DDG1000 Total Ship Systems Engineering							4009 - Advanced Gun System (AGS)			
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	0.000	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	0.000	0.000	0.000
Subtotal T&E			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks:														
Contractor Engineering Support	GSA/CPFF	Anteon Arlington VA	7.026	0.000	N/A	0.000	N/A	0.000	N/A	0.000	N/A	CONT	CONT	
	Various	Other Contractors	15.577	0.000	N/A	0.000	N/A	0.500	Various	3.947	Various	CONT	CONT	
Government Engineering Support	WX	NSWC DD Dahlgren VA	17.558	0.000	N/A	0.000	N/A	3.513	10/07	5.000	10/08	CONT	CONT	
	WX	NSWC PHD Pt Hueneme CA	8.945	0.000	N/A	0.000	N/A	3.500	10/07	5.000	10/08	CONT	CONT	
	WX	Other Gov't Activities	11.536	0.000	N/A	0.000	N/A	0.732	10/07	2.500	10/08	CONT	CONT	
Program Management Support														
Travel														
Labor (Research Personnel)														
SBIR Assessment														
Subtotal Management			60.642	0.000		0.000		8.245		16.447		CONT	CONT	
Remarks:														
Total Cost			480.761	44.813		46.843		74.245		97.447		CONT	CONT	420.119
Remarks:														

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EXHIBIT R4, Schedule Profile			DATE: <b>February 2</b>		
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>		PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering		PROJECT NUMBER AND NAME 4009 - Advanced Gun System (AGS)	





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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2007</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 9999 Congressional Plus-Ups : VARIOUS

**CONGRESSIONAL PLUS-UPS:**

	FY 06	FY07		
9554C				
Naval Smartship	0.969	0.000		

Congressional add funds the development and factory testing of specific technology solutions in the areas of motor and component thermal management, insulation design and breakdown mechanisms, and motor electrical component reliability.

	FY 06	FY07		
9832N				
CG(X) System Concept and Design	29.070	0.000		

Congressional add accelerates concept design, concept studies, and other development work for the CG (X) next generation cruiser.

	FY 06	FY07		
9833N/C				
Floating Area Network	1.937	1.992		

Congressional add funds development of a Floating Area Network (FAN) enabling a direct Line of Sight (LOS), wireless, Transmission Control Protocol/Internet Protocol (TCP/IP) network among intra-battle group ships.

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME PE 0604300N - DDG 1000 Total Ship Systems Engineering	PROJECT NUMBER AND NAME 9999 Congressional Plus-Ups : VARIOUS

**CONGRESSIONAL PLUS-UPS:**

	FY 06	FY07		
9834C				
Permanent Magnet Motor	6.411	10.958		

Congressional add funds the development and factory testing of specific technology solutions in the areas of motor and component thermal management, insulation design and breakdown mechanisms, and motor electrical component reliability.

	FY 06	FY07		
9835N/C				
Surface Vessel Electric Actuator Tech Dev	0.986	1.395		

Congressional add funding to assist in the development of the next generation linear electric actuators as a replacement for hydraulic systems. Actuators convert energy from hydraulic, air or electric power to achieve mechanical movement and control of heavy or remote devices.

	FY 06	FY07		
9836N				
Wireless Maritime Inspection System	1.453	0.000		

Congressional add funding to develop a wireless capability that aids Maritime Interdiction Operations (MIO) information exchange.

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**CONGRESSIONAL PLUS-UPS:**

	FY 06	FY 07		
9A35N				
Bio/nano-MEMS Center for Defense Applications	0.000	1.295		

Congressional add funds the University of Louisville Bio/Nano-MEMS Center that will create a multi-disciplinary science and engineering team to carry out comprehensive research, design and testing directed toward insertion of advanced, reliable MEMS devices into fielded military systems.

	FY 06	FY 07		
9A36N				
MEMS Center for Defense Applications	0.000	0.996		

Congressional add funds the University of Louisville MEMS Center to create a multidisciplinary science and engineering team that will carry out a comprehensive research, design and testing directed toward insertion of advanced, reliable MEMS devices into fielded military systems. The Bio/Nano-MEMS Center will interface with systems' programs to identify MEMS solutions and technologies that address and satisfy performance requirements

	FY 06	FY 07		
9A37N				
Smartlink planar scanner antenna modernization	0.000	0.996		

Congressional add funds the development, design and implementation of low-cost, low-RCS, small planar scanner antenna for tactical SATCOM on Navy surface ships, aircraft and vehicles. Goals-demonstrate planar scanner technology for war-fighter use.