

**BUDGET ITEM JUSTIFICATION SHEET (P-40)  
FY2016 PRESIDENTS BUDGET**

DATE: February 2015

APPROPRIATION/BUDGET ACTIVITY					P-1 LINE ITEM NOMENCLATURE						
SHIPBUILDING AND CONVERSION, NAVY/BA 2 Other Warships					DDG 1000						
					BLI: 2119						
(Dollars in Millions)	PRIOR YR	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	To Complete	TOTAL PROG	
QUANTITY	3	0	0	0	0	0	0	0	0	3	
End Cost	12,288.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12,288.7	
Less Advance Procurement	1,160.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,160.1	
Less Subsequent Year FF	7,036.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7,036.7	
Plus Subsequent Year FF	5,812.6	231.7	419.5	433.4	139.5	0.0	0.0	0.0	0.0	7,036.7	
Full Funding TOA	9,904.5	231.7	419.5	433.4	139.5	0.0	0.0	0.0	0.0	11,128.6	
Plus Advance Procurement	1,160.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,160.1	
Total Obligational Authority	11,064.6	231.7	419.5	433.4	139.5	0.0	0.0	0.0	0.0	12,288.7	
Plus Outfitting / Plus Post Delivery	11.8	49.3	60.4	87.1	77.9	23.3	35.0	39.1	143.6	527.3	
Total	11,076.4	281.0	479.9	520.5	217.3	23.3	35.0	39.1	143.6	12,816.0	
Unit Cost (Ave End Cost)	4,096.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4,096.2	

**MISSION:**  
DDG 1000, a multi-mission surface combatant will serve as a versatile asset in the context of future Naval Strategy. Armed with an array of weapons, DDG 1000 will provide the Joint Force Commander with precision strike and volume fires. Designed with sustainable payload, multi-spectral stealth and optimal manning, DDG 1000 will take the fight to the enemy with unprecedented striking power, sustainability, survivability and information dominance. This Budget Submission is based on a DDG 1000 of 15,656 tons displacement with two Advanced Gun Systems (AGS) including a total magazine capacity of 600 rounds. FY16 funding will support continued construction (for all three hulls), Class Services, and GFE / Mission Systems Equipment procurement.

<b>Characteristics:</b>		<b>Hull</b>	<b>Weapons:</b>	<b>Sensors:</b>	<b>Integrated Power System:</b>	<b>Aviation:</b>
Length Overall	610'	2 Advanced Gun Systems 155mm	Multi-Function Radar	2 Main Gas Turbine Generators	MH60R (Capacity for 2)	
Beam	80.7'	80 MK 57 Vertical Launch cells	Acoustic Sensor Suite	2 Auxiliary Gas Turbine Generators	3 VTUAVs	
Displacement (LT)	15,612	2 MK 46 MOD 2 GWS	EO / IR System	2 Propulsion Motors		
Draft (Navigation)	27.6'					
Speed	30 kts					<b>Boats:</b>
Installed Power	78.4 MW					Sized for 2 11m RHIBs per ship
Crew Size (including air detachment - 28)	175					
Hull	Wave-piercing tumblehome					
Superstructure	Composite structure (1000/1001) Steel structure (1002)					

<b>Production Status:</b>	FY07 DDG 1000	FY07 DDG 1001	FY09 DDG 1002
Contract Award Date	Feb-08	Feb-08	Sep-11
Months to Completion		(Re-award Sep-11)	
a) Award to Delivery	93	105	87
b) Construction Start to Delivery	81	80	80
Delivery Date*	Nov-15	Nov-16	Dec-18
Completion of Fitting Out	Nov-16	Nov-17	Jul-19
Obligation Work Limit Date	Oct-17	Oct-18	Jun-20

\* DDG 1000 Delivery Date: Denotes HM&E Delivery Date.

**WEAPON SYSTEM COST ANALYSIS (EXHIBIT P-5)**  
 (Dollars in Thousands)

<b>BUDGET ACTIVITY: 2</b>		<b>P-1 LINE ITEM NOMENCLATURE</b>		
<b>Other Warships</b>		<b>DDG 1000</b>		
<b>ELEMENT OF COST</b>	<b>QTY</b>	<b>FY 2007 COST</b>	<b>QTY</b>	<b>FY 2009 COST</b>
PLAN COSTS	2	1,407,194	1	553,283
BASIC		3,553,907		1,095,080
CHANGE ORDERS		252,503		46,158
ELECTRONICS		2,606,749		1,331,748
HM&E		203,888		75,062
OTHER COST		247,359		127,296
ORDNANCE		526,278		262,197
<b>TOTAL SHIP ESTIMATE</b>		<b>8,797,878</b>		<b>3,490,824</b>
LESS: ADVANCE PROCUREMENT FY05		304,046		
LESS: ADVANCE PROCUREMENT FY06		706,240		
LESS: ADVANCE PROCUREMENT FY08		-		149,830
LESS: SUBSEQUENT YEAR FUNDING FY08		3,009,929		-
LESS: SUBSEQUENT YEAR FUNDING FY10		315,025		1,063,507
LESS: SUBSEQUENT YEAR FUNDING FY11		107,188		139,896
LESS: SUBSEQUENT YEAR FUNDING FY12		437,020		71,707
LESS: SUBSEQUENT YEAR FUNDING FY13		523,736		144,603
LESS: SUBSEQUENT YEAR FUNDING FY14		212,372		19,322
LESS: SUBSEQUENT YEAR FUNDING FY15		346,000		73,532
LESS: SUBSEQUENT YEAR FUNDING FY16		238,374		195,030
LESS: SUBSEQUENT YEAR FUNDING FY17		10,380		129,099
<b>NET P-1 LINE ITEM:</b>		<b>2,587,568</b>		<b>1,504,298</b>

**SHIPBUILDING AND CONVERSION, NAVY**  
 Analysis of Ship Cost Estimate - Basic/Escalation  
 Ship Type: DDG 1000

<u>I. Design/Schedule</u>	<u>Start/Issue</u>	<u>Complete</u> <u>/Response</u>	<u>Reissue</u>	<u>Complete</u> <u>/Response</u>
Issue date for TLR				
Issue date for TLS				
Preliminary Design				
Contract Design				
Detail Design				
Request for Proposals				
Design Agent				
ISSUE DATE FOR ORD	11/97 (DD-21)	5/04 (DD(X))		
PRELIMINARY DESIGN REVIEW (PDR)	1/04	3/04		
CRITICAL DESIGN REVIEW (CDR)	6/05	9/05		
MILESTONE B	11/05	11/05		
REQUEST FOR PROPOSALS (LEAD SHIPS)	1/06	4/06		
DAB REVIEW (LEAD SHIP CONSTRUCTION)	10/06	10/06		
MILESTONE B RECERTIFICATION	10/10	10/10		
<u>II. Classification of Cost Estimate</u>	CLASS C BUDGET ESTIMATE			
<u>III. Basic Construction/Conversion</u>	2008	2008	2009	
A. Actual Award Date	2/08	2/08 and 9/11	9/11*	
		CPAF/IF AND		
B. Contract Type ( and Share Line if applicable )	CPAF/IF	FPIC	FPIC	
* DDG1002 DECKHOUSE, HANGAR AND AFT PVLS CONTRACT Awarded to BIW on Jul 2013				
<u>IV. Escalation</u>	N/A - FORWARD PRICED			
Escalation Termination Date				
Escalation Requirement				
Labor/Material Split				
Allowable Overhead Rate				
<u>V. Other Basic(Reserves/Miscellaneous)</u>	<u>Amount</u>			
N/A				

SHIPBUILDING AND CONVERSION, NAVY  
SHIP PRODUCTION SCHEDULE

SHIP TYPE	HULL NUMBER	SHIPBUILDER	FISCAL YEAR AUTHORIZED	CONTRACT AWARD	START OF CONSTRUCTION	*DELIVERY DATE
DDG 1000	1000	BIW	07	FEB-08	Feb-09	Nov-15
DDG 1000	1001	BIW	07	SEP-11 (Re-award)	Mar-10	Nov-16
DDG 1000	1002	BIW	09	SEP-11	Apr-12	Dec-18

\* DDG 1000 Delivery Date: Denotes HM&E Delivery Date.

**SHIPBUILDING AND CONVERSION, NAVY**  
 Analysis of Ship Cost Estimates - Major Equipment  
 (Dollars in Thousands)

Ship Type: DDG 1000

	FY 2007		FY 2009	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
<b>ELECTRONICS</b>				
a. P-35 Items				
EXTERIOR COMMUNICATIONS (EXCOMMS) (SHIPSET)	2	464,648	1	79,962
INTEGRATED UNDERSEA WARFARE (IUSW) SYSTEM	2	215,763	1	105,136
MULTI FUNCTION RADAR (MFR)	2	519,609	1	262,999
COMMON ARRAY POWER SYSTEM (CAPS)	2	97,017	1	16,409
TOTAL SHIP COMPUTING ENVIRONMENT (TSCE)	2	372,377	1	262,584
ELECTRO-OPTICAL / INFRARED (EO/IR)	2	94,411	1	26,952
IDENTIFICATION FRIEND OR FOE (IFF)	2	35,532	1	28,138
COMMON ARRAY COOLING SYSTEM (CACs)	2	20,065	1	965
SHIP CONTROL SYSTEM (SCS)	2	111,527	1	117,229
COOPERATIVE ENGAGEMENT CAPABILITY (CEC)	2	16,025	1	7,800
SURFACE ELECTRONIC WARFARE IMPROVEMENT PROGRAM (SEWIP)	2	39,742	1	17,681
VERTICAL LAUNCHING SYSTEM (VLS) MK 57 4-CELL MODULES	40	276,276	20	241,023
Subtotal		2,262,993		1,166,878
b. Major Items				
Subtotal		0		0
c. Other Electronics				
MISSION SYSTEM ENGR INTEGR & TEST (MSEIT)		343,756		164,870
Subtotal		343,756		164,870
Total ELECTRONICS		2,606,749		1,331,748

**SHIPBUILDING AND CONVERSION, NAVY**  
 Analysis of Ship Cost Estimates - Major Equipment  
 (Dollars in Thousands)

Ship Type: DDG 1000

	FY 2007		FY 2009	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
<b>HM&amp;E</b>				
a. P-35 Items				
MAIN TURBINE GENERATOR (MTG)	4	78,125	2	39,412
Battle Spares		32,168		0
Subtotal		110,293		39,412
b. Major Items				
RIGID HULL INFLATABLE BOAT (RHIB)	4	2,100	2	1,100
Subtotal		2,100		1,100
c. Other HM&E				
HM&E (Activation, NGVLA, Moriah Wind Measurement System (WMS), Aviation Integration)		91,495		34,550
Subtotal		91,495		34,550
Total HM&E		203,888		75,062

**SHIPBUILDING AND CONVERSION, NAVY**  
 Analysis of Ship Cost Estimates - Major Equipment  
 (Dollars in Thousands)

Ship Type: DDG 1000

	FY 2007		FY 2009	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
<b>ORDNANCE</b>				
a. P-35 Items				
ADVANCED GUN SYSTEM (AGS)	4	488,127	2	247,402
CLOSE-IN GUN SYSTEM (CIGS)	4	38,151	2	14,795
Subtotal		526,278		262,197
b. Major Items				
Subtotal		0		0
c. Other ORDNANCE				
Subtotal		0		0
Total ORDNANCE		526,278		262,197

**SHIPBUILDING AND CONVERSION, NAVY**  
 MAJOR SHIP COMPONENT FACT SHEET  
 (Dollars in Thousands)

**P-35 EXHIBIT**  
**FY2016 PRESIDENTS BUDGET**  
 February 2015

Ship Type: **DDG 1000**  
 Equipment Item: **EXCOMMS (SHIPSET)**  
 PARM Code: **PEOC4I**

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

EXCOMMs are part of the DDG-1000 C3I Segment and consists of a set of seven (7) external communications elements. The EXCOMM Elements support the DDG-1000 system in achieving its mission by providing communications between DDG-1000 and other land, air, and sea based platforms as well as pier-side communications. These EXCOMM elements provide the voice, data, and video communications between DDG-1000 and the external world at sea as well as when in port. The 7 elements are: Satellite Communications (SATCOMs), Line of Sight (LOS), Common Data Link-Navy (CDL-N), Information Security (INFOSEC), Common Array Element (CAE), Cooperative Engagement Capability (CEC) and Integrated Communications Controller Software (ICCS). Government legacy systems include: Distributed Common Ground System, Navy (DCGS-N), Cooperative Engagement Capability (CEC), Communication Terminals, AN/WSC-6(V)9 Shipboard Terminal, Common Link Integrated Processor (CLIP), Automated Digital Network System (ADNS), Global Broadcast Service (GBS), Communications Data Link System (CDLS), & Naval Modular Automated Communications System (NAVMACS).

**II. CURRENT FUNDING:**

**P-35 Category**

	<b>FY 2007</b>		<b>FY 2009</b>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	2	195,953	1	20,600
Technical Support Services		28,248		6,585
Other Costs (NRE)		240,448		52,777
Total		464,648		79,962

**III. CONTRACT DATA:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>PRIME</u>	<u>CONTRACT</u>	<u>AWARD</u>	<u>NEW</u>	<u>QTY</u>	<u>HARDWARE</u>
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>		<u>UNIT COST</u>
FY07	DDG-1000	Raytheon	CPAF/IF	MAY-08		2	97,976
FY09	DDG-1000	Raytheon	CPAF/IF	MAY-12		1	20,600

**IV. DELIVERY DATE:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>EARLIEST SHIP</u>	<u>MONTHS REQUIRED</u>	<u>PRODUCTION</u>	<u>REQUIRED</u>
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	43	26	Feb-10
FY09	DDG-1000	Dec-18	43	26	Mar-13

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

**NOTE:**



**SHIPBUILDING AND CONVERSION, NAVY**  
 MAJOR SHIP COMPONENT FACT SHEET  
 (Dollars in Thousands)

Ship Type: **DDG 1000**  
 Equipment Item: **INTEGRATED UNDERSEA WARFARE (IUSW) SYSTEM**  
 PARM Code: **IWS 5.0 XR**

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

The IUSW suite supports DDG-1000 in achieving Undersea and Surface Dominance with the capability to detect and track hostile surface vessels, submarines, and moored volume mines. It supports the Sensor Systems Segment in accomplishing its Integrated Air and Surface Dominance (IASD) and Integrated Undersea Dominance (IUSD) objectives by providing the capability to conduct Anti-Submarine Warfare (ASW), Torpedo Defense (TD) and Mine Warfare (MIW) missions. Military Operations Other than War (MOOTW) objectives, such as Search and Rescue (SAR) (locating downed aircraft and vessels in the ocean) are also supported. There are four major subcomponents: Bow Array Component, Towed Array Component, Towed Torpedo Countermeasures Component, as well as Software.

**II. CURRENT FUNDING:**

**P-35 Category**

	FY 2007		FY 2009	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	2	95,829	1	54,300
Technical Support Services		10,793		5,639
Other Costs (NRE)		109,141		45,198
Total		215,763		105,136

**III. CONTRACT DATA:**

PROGRAM	SHIP	PRIME	CONTRACT	AWARD	NEW		HARDWARE
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>	<u>QTY</u>	<u>UNIT COST</u>
FY07	DDG-1000	Raytheon	CPAF/IF	MAY-08		2	47,914
FY09	DDG-1000	Raytheon	CPAF/IF	OCT-12		1	54,300

**IV. DELIVERY DATE:**

PROGRAM	SHIP	EARLIEST SHIP	MONTHS REQUIRED	PRODUCTION	REQUIRED
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	47	18	Jun-10
FY09	DDG-1000	Dec-18	46	18	Aug-13

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

**NOTE:**

**SHIPBUILDING AND CONVERSION, NAVY**  
**MAJOR SHIP COMPONENT FACT SHEET**  
(Dollars in Thousands)

Ship Type: **DDG 1000**  
Equipment Item: **MULTI FUNCTION RADAR**  
PARM Code: **IWS 2.0 SQ**

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

The Multi Function Radar (MFR) element supports the DDG-1000 system in achieving Integrated Air and Surface Dominance with the capability to neutralize hostile surface vessels and aircraft at short ranges. The MFR is comprised of X-Band (AN/SPY-3) arrays integrated through a common signal data processor offering surface and horizon search capabilities and 3-D air search radar capabilities. The X-Band portion also has two navigation modes (high power and lower power) for use in piloting and marine navigation.

**II. CURRENT FUNDING:**

**P-35 Category**

	FY 2007		FY 2009 <sup>(1)</sup>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	2	314,313	1	189,573
Technical Support Services		21,993		8,145
Other Costs (NRE)		183,303		65,281
Total		519,609		262,999

**III. CONTRACT DATA:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>PRIME</u>	<u>CONTRACT</u>	<u>AWARD</u>	<u>NEW</u>	<u>HARDWARE</u>
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>	<u>UNIT COST</u>
FY07	DDG-1000	Raytheon	CPAF/IF	MAR-08		2 157,157
FY09	DDG-1000	Raytheon	CPAF/IF	OCT-12		1 189,573

**IV. DELIVERY DATE:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>EARLIEST SHIP</u>	<u>MONTHS REQUIRED</u>	<u>PRODUCTION</u>	<u>REQUIRED</u>
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	45	28	Oct-09
FY09	DDG-1000	Dec-18	36	28	Aug-13

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

**NOTE:**

Volume Search Radar (VSR) was removed from the DDG-1000 class per the Nunn McCurdy Certification. VSR procured for DDG-1002 will be transferred to the CVN-79.

**SHIPBUILDING AND CONVERSION, NAVY**  
**MAJOR SHIP COMPONENT FACT SHEET**  
 (Dollars in Thousands)

Ship Type: **DDG 1000**  
 Equipment Item: **COMMON ARRAY POWER SYSTEM (CAPS)**  
 PARM Code: **IWS 2.0 SQ**

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

The Common Array Power System (CAPS) provides electrical power for the Multi Function Radar (MFR), Identification of Friend or Foe (IFF), EW/Cryptology and External Communications (EXCOMMs) Elements. The CAPS is a distributed power system designed to operate from the ship-supplied medium voltage distribution Integrated Power System's (IPS) 13.8 kV AC power source. The CAPS consists of two Power Distribution Units (PDUs) and four Power Conversion Units (PCUs).

**II. CURRENT FUNDING:**

	FY 2007		FY 2009	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	2	56,185	1	12,624
Battle Spares		1,000		0
Technical Support Services		4,490		420
Other Costs (NRE)		35,342		3,365
Total		97,017		16,409

**III. CONTRACT DATA:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>PRIME</u>	<u>CONTRACT</u>	<u>AWARD</u>	<u>NEW</u>	<u>HARDWARE</u>
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>	<u>UNIT COST</u>
FY07	DDG-1000	Raytheon	CPAF/IF	MAR-08		28,093
FY09	DDG-1000	Raytheon	CPAF/IF	NOV-12		12,624

**IV. DELIVERY DATE:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>EARLIEST SHIP</u>	<u>MONTHS REQUIRED</u>	<u>PRODUCTION</u>	<u>REQUIRED</u>
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	48	28	Jul-09
FY09	DDG-1000	Dec-18	35	28	Sep-13

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

**NOTE:**

**SHIPBUILDING AND CONVERSION, NAVY**  
**MAJOR SHIP COMPONENT FACT SHEET**  
(Dollars in Thousands)

Ship Type: **DDG 1000**  
Equipment Item: **TOTAL SHIP COMPUTING ENVIRONMENT (TSCE)**  
PARM Code: **IWS 9.0 XV**

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

The Total Ship Computing Environment (TSCE) Segment provides all computing resources and associated software to the DDG-1000 System. It is a single computing environment for Ship, Combat and Support Systems. The TSCE provides a common middleware platform upon which all application/functional software can build and execute. The segment applications software, combined with TSCE hardware and software infrastructure represent the majority of the computing resources and associated software for the DDG-1000 System.

**II. CURRENT FUNDING:**

**P-35 Category**

	FY 2007		FY 2009	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	2	196,450	1	134,345
Technical Support Services		18,834		14,224
Other Costs (NRE)		157,093		114,014
Total		372,377		262,584

**III. CONTRACT DATA:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>PRIME</u>	<u>CONTRACT</u>	<u>AWARD</u>	<u>NEW</u>	<u>HARDWARE</u>
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>	<u>UNIT COST</u>
FY07	DDG-1000	Raytheon	CPAF/IF	MAY-08		2 98,225
FY09	DDG-1000	Raytheon	CPAF/IF	OCT-12		1 134,345

**IV. DELIVERY DATE:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>EARLIEST SHIP</u>	<u>MONTHS REQUIRED</u>	<u>PRODUCTION</u>	<u>REQUIRED</u>
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	48	21	Feb-10
FY09	DDG-1000	Dec-18	43	21	Aug-13

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

**Note:**

**SHIPBUILDING AND CONVERSION, NAVY**  
**MAJOR SHIP COMPONENT FACT SHEET**  
(Dollars in Thousands)

**P-35 EXHIBIT**  
**FY2016 PRESIDENTS BUDGET**  
February 2015

Ship Type: **DDG 1000**  
Equipment Item: **ELECTRO-OPTICAL / INFRARED (EO/IR)**  
PARM Code: **IWS 2.0 SJ**

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

The Electro-Optical / Infrared (EO/IR) Sensor Suite Element is composed of both the hardware and software components required to detect and range on specified targets and report track data to C2. The EO/IR sensor suite consists of five (5) gimbaleed EO sensors located on the cardinal faces of the deckhouse and associated electronics in Electronic Modular Enclosures (EMEs). Also included are Detect and Tracking Software components that provide embedded control and generate tracks for the C2 system and Mine Like Object (MLO) detection algorithm.

**II. CURRENT FUNDING:**

**P-35 Category**

	FY 2007		FY 2009	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	2	33,368	1	12,973
Technical Support Services		6,900		1,551
Other Costs (NRE)		54,144		12,429
Total		94,411		26,952

**III. CONTRACT DATA:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>PRIME</u>	<u>CONTRACT</u>	<u>AWARD</u>	<u>NEW</u>	<u>QTY</u>	<u>HARDWARE</u>
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>		<u>UNIT COST</u>
FY07	DDG-1000	Raytheon	CPAF/IF	MAY-08		2	16,684
FY09	DDG-1000	Raytheon	CPAF/IF	NOV-12		1	12,973

**IV. DELIVERY DATE:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>EARLIEST SHIP</u>	<u>MONTHS REQUIRED</u>	<u>PRODUCTION</u>	<u>REQUIRED</u>
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	47	22	Feb-10
FY09	DDG-1000	Dec-18	41	22	Sep-13

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

**NOTE:**

**SHIPBUILDING AND CONVERSION, NAVY**  
**MAJOR SHIP COMPONENT FACT SHEET**  
(Dollars in Thousands)

**P-35 EXHIBIT**  
**FY2016 PRESIDENTS BUDGET**  
February 2015

Ship Type: **DDG 1000**  
Equipment Item: **IDENTIFICATION FRIEND OR FOE (IFF)**  
PARM Code: **NAVAIR**

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

Identification Friend or Foe (IFF) sensor element supports the DDG-1000 Ship System segment in accomplishing Anti-Air Warfare (AAW) and Anti-Surface Warfare (ASUW) missions. The IFF Sensor Element is a cooperative "challenge and reply" system that assists in the rapid identification, tracking and control of friendly platforms. IFF is comprised of three hardware components to include the Interrogator component, the Transponder component and the Electronically Scanned Antenna (ESA) component, as well as software.

**II. CURRENT FUNDING:**

**P-35 Category**

	FY 2007		FY 2009	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	2	16,018	1	8,640
Technical Support Services		2,186		2,163
Other Costs (NRE)		17,328		17,335
Total		35,532		28,138

**III. CONTRACT DATA:**

PROGRAM	SHIP	PRIME	CONTRACT	AWARD	NEW		HARDWARE
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>	<u>QTY</u>	<u>UNIT COST</u>
FY07	DDG-1000	Raytheon	CPAF/IF	MAY-08		2	8,009
FY09	DDG-1000	Raytheon	CPAF/IF	DEC-12		1	8,640

**IV. DELIVERY DATE:**

PROGRAM	SHIP	EARLIEST SHIP	MONTHS REQUIRED	PRODUCTION	REQUIRED
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	40	29	Feb-10
FY09	DDG-1000	Dec-18	33	29	Oct-13

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

**NOTE:**

SHIPBUILDING AND CONVERSION, NAVY  
 MAJOR SHIP COMPONENT FACT SHEET  
 (Dollars in Thousands)

Ship Type: DDG 1000  
 Equipment Item: COMMON ARRAY COOLING SYSTEM (CACS)  
 PARM Code: IWS 2.0 SQ

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

The Common Array Cooling System (CACS) provides liquid cooling for the Multi Function Radar (MFR) and External Communications (EXCOMMs) arrays. CACS is a distributed cooling system consisting of three Cooling Equipment Units (CEUs). Each CEU operates an independent coolant loop used to transport, monitor and control coolant flow to the DBR and EXCOMMs Equipment. CEUs consist of redundant pumps, a heat exchanger and filtration system. It is designed to provide liquid coolant to the MFR and EXCOMM equipment and dissipate heat to the ship-supplied chilled water.

**II. CURRENT FUNDING:**

**P-35 Category**

	FY 2007		FY 2009	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	2	11,766		0
Battle Spares		1,000		0
Technical Support Services		824		107
Other Costs (NRE)		6,475		858
Total		20,065		965

**III. CONTRACT DATA:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>PRIME</u>	<u>CONTRACT</u>	<u>AWARD</u>	<u>NEW</u>	<u>QTY</u>	<u>HARDWARE</u>
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>		<u>UNIT COST</u>
FY07	DDG-1000	Raytheon	CPAF/IF	MAY-08		2	5,883
FY09	DDG-1000	Raytheon	CPAF/IF	NOV-12		1	0

**IV. DELIVERY DATE:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>EARLIEST SHIP</u>	<u>MONTHS REQUIRED</u>	<u>PRODUCTION</u>	<u>REQUIRED</u>
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	49	28	Jun-09
FY09	DDG-1000	Dec-18	35	28	Sep-13

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

**NOTE:**

CACS Technical Services are incorporated into DBR Technical Services. DDG 1002 CACS costs are included in the MFR 1002 value.

**SHIPBUILDING AND CONVERSION, NAVY**  
**MAJOR SHIP COMPONENT FACT SHEET**  
(Dollars in Thousands)

**P-35 EXHIBIT**  
**FY2016 PRESIDENTS BUDGET**  
February 2015

Ship Type: **DDG 1000**  
Equipment Item: **SHIP CONTROL SYSTEM (SCS)**  
PARM Code: **SPAWAR**

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

The Flight 1 Ship Control System (SCS) element is a system of hardware and software items that provide hierarchical and integrated ship control by the DDG-1000 crew. The SCS software architecture allows for various levels of automation for monitoring, control, reporting and configuration of SCS equipment and operations to support mission and low manning concepts. From workstation positions on the ship bridge or in the ship mission centers, the SCS coordinates, controls and monitors the navigation, hull, electric plant, machinery plant and damage control functions on the DDG-1000.

**II. CURRENT FUNDING:**

**P-35 Category**

	FY 2007		FY 2009	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	2	58,000	1	42,801
Technical Support Services		6,031		8,256
Other Costs (NRE)		47,497		66,173
Total		111,527		117,229

**III. CONTRACT DATA:**

<u>PROGRAM</u> <u>YEAR</u>	<u>SHIP</u> <u>TYPE</u>	<u>PRIME</u> <u>CONTRACTOR</u>	<u>CONTRACT</u> <u>TYPE</u>	<u>AWARD</u> <u>DATE</u>	<u>NEW</u> <u>/OPTION</u>	<u>QTY</u>	<u>HARDWARE</u> <u>UNIT COST</u>
FY07	DDG-1000	Raytheon	CPAF/IF	MAY-08		2	29,000
FY09	DDG-1000	Raytheon	CPAF/IF	MAY-12		1	42,801

**IV. DELIVERY DATE:**

<u>PROGRAM</u> <u>YEAR</u>	<u>SHIP</u> <u>TYPE</u>	<u>EARLIEST SHIP</u> <u>DELIVERY DATE</u>	<u>MONTHS REQUIRED</u> <u>BEFORE DELIVERY</u>	<u>PRODUCTION</u> <u>LEADTIME</u>	<u>REQUIRED</u> <u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	38	31	Feb-10
FY09	DDG-1000	Dec-18	38	31	Mar-13

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A



**SHIPBUILDING AND CONVERSION, NAVY**  
 MAJOR SHIP COMPONENT FACT SHEET  
 (Dollars in Thousands)

Ship Type: **DDG 1000**  
 Equipment Item: **COOPERATIVE ENGAGEMENT CAPABILITY (CEC)**  
 PARM Code: **IWS 6.0 XN**

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

Cooperative Engagement Capability (CEC) is a sensor network with Integrated Fire Control capability that significantly improves Battle Force air and missile defense capabilities by coordinating measurement data from Battle Force air search sensors on CEC-equipped units into a single, real-time, composite cooperating unit (CU), to all other CUs in the Battle Force through a real-time, line of sight, high data rate sensor and engagement data distribution network. CEC is highly resistant to jamming and provides accurate grid locking (relative spatial positioning) between CUs. Each CU independently employs high capacity, parallel processing and advanced algorithms to combine all distributed sensor data into a high quality track picture which is the same for all CUs. CEC data is presented as a superset of the best air and missile defense sensor capabilities from each CU, all of which are integrated into a single input to each CU's combat weapon system. CEC significantly improves Battle Force defense in depth, including both local and area defense capabilities against current and future air missile threats.

**II. CURRENT FUNDING:**

**P-35 Category**

	<b>FY 2007</b>		<b>FY 2009</b>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	2	12,000	1	6,800
Technical Support Services		4,025		1,000
Other Costs (NRE)		0		0
Total		16,025		7,800

**III. CONTRACT DATA:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>PRIME</u>	<u>CONTRACT</u>	<u>AWARD</u>	<u>NEW</u>	<u>QTY</u>	<u>HARDWARE</u>
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>		<u>UNIT COST</u>
FY07	DDG 1000	RAYTHEON	FPI	FEB-07		2	6,000
FY09	DDG 1000	RAYTHEON	FPI	OCT-13		1	6,800

**IV. DELIVERY DATE:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>EARLIEST SHIP</u>	<u>MONTHS REQUIRED</u>	<u>PRODUCTION</u>	<u>REQUIRED</u>
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG 1000	Nov-15	34	18	Jul-11
FY09	DDG 1000	Dec-18	34	18	Aug-14

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

**NOTE:**

**SHIPBUILDING AND CONVERSION, NAVY**  
**MAJOR SHIP COMPONENT FACT SHEET**  
 (Dollars in Thousands)

Ship Type: **DDG 1000**  
 Equipment Item: **SURFACE ELECTRONIC WARFARE IMPROVEMENT PROGRAM (SEWIP)**  
 PARM Code: **IWS 2.0 SJ**

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

SEWIP provides enhanced Electronic Warfare (EW) capabilities to improve anti-ship missile defense, counter-targeting and counter surveillance capabilities, as well as improved situational awareness to pace the threat, improving detection, accuracy, and mitigation of EMI. The SEWIP Block 2 is an upgraded antenna, receiver and combat system interface for AN/SLQ-32.

**II. CURRENT FUNDING:**

**P-35 Category**

	<b>FY 2007</b>		<b>FY 2009</b>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	2	36,214	1	15,906
Technical Support Services		1,906		935
Other Costs (NRE)		1,622		841
Total		39,742		17,681

**III. CONTRACT DATA:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>PRIME</u>	<u>CONTRACT</u>	<u>AWARD</u>	<u>NEW</u>	<u>QTY</u>	<u>HARDWARE</u>
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>		<u>UNIT COST</u>
FY07	DDG-1000	Lockheed Martin	FPI	Jul-12		2	18,107
FY09	DDG-1000	Lockheed Martin	FPI	Jan-15		1	15,906

**IV. DELIVERY DATE:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>EARLIEST SHIP</u>	<u>MONTHS REQUIRED</u>	<u>PRODUCTION</u>	<u>REQUIRED</u>
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	2	19	Feb-14
FY09	DDG-1000	Dec-18	2	16	Jun-17

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

**NOTE:**

**SHIPBUILDING AND CONVERSION, NAVY**  
**MAJOR SHIP COMPONENT FACT SHEET**  
(Dollars in Thousands)

**P-35 EXHIBIT**  
**FY2016 PRESIDENTS BUDGET**  
February 2015

Ship Type: **DDG 1000**  
Equipment Item: **VERTICAL LAUNCHING SYSTEM (VLS) MK 57 4-CELL MODULES**  
PARM Code: **IWS 3L S8**

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

The MK 57 VLS is a general purpose, operationally unmanned launching system capable of stowing, preparing, and launching missiles in support of DDG-1000 mission areas including: land attack warfare, integrated air and surface dominance, and integrated undersea dominance. The MK57 VLS provides the capability for rapid launch of missiles into a 360-degree hemispherical volume above and about the ship. The canistered missiles are stowed within the launching systems below-deck cells. DDG-1000 will have 80 total cells grouped into 20 four cell modules. Flight 1 missiles to be carried include: Enhanced SeaSparrow Missile (ESSM), Standard Missile-2 (SM-2) Blk III, Tomahawk Land Attack Missile (TLAM) Blk III/IV, and Vertical Launch Anti-Submarine Rocket (VLA).

**II. CURRENT FUNDING:**

**P-35 Category**

	<b>FY 2007</b>		<b>FY 2009</b>	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	40	180,987	20	172,878
Technical Support Services		8,524		4,231
Other Costs (NRE)		86,766		63,914
Total		276,276		241,023

**III. CONTRACT DATA:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>PRIME</u>	<u>CONTRACT</u>	<u>AWARD</u>	<u>NEW</u>	<u>HARDWARE</u>
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>	<u>UNIT COST</u>
FY07	DDG-1000	Raytheon	CPAF/IF	MAY-08		4,525
FY09	DDG-1000	Raytheon	CPAF/IF	OCT-12		8,644

**IV. DELIVERY DATE:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>EARLIEST SHIP</u>	<u>MONTHS REQUIRED</u>	<u>PRODUCTION</u>	<u>REQUIRED</u>
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	40	24	Jul-10
FY09	DDG-1000	Dec-18	40	24	Aug-13

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

**NOTE:**

SHIPBUILDING AND CONVERSION, NAVY  
 MAJOR SHIP COMPONENT FACT SHEET  
 (Dollars in Thousands)

Ship Type: DDG 1000  
 Equipment Item: MAIN TURBINE GENERATOR (MTG)  
 PARM Code: PMS 500 WA

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

The Main Turbine Generator Set (MTG) shall be capable of being utilized as the prime power source on the DDG-1000 Destroyer for electrical power applications (propulsion, ship services, and combat systems loads). The DDG-1000 baseline includes two MTGs. The minimum output power from each MTG shall be 35.25 MWe. The engine utilizes a Full Authority Digital Control Local Operating Panel (FADC LOCOP) and electric start system. The generator contains redundant automatic voltage regulators (AVR) with automatic changeover.

**II. CURRENT FUNDING:**

**P-35 Category**

	FY 2007		FY 2009	
	QTY	COST	QTY	COST
Major Hardware	4	73,262	2	39,412
Battle Spares		32,168		0
Technical Support Services		1,485		0
Other Costs (NRE)		3,378		0
Total		110,293		39,412

**III. CONTRACT DATA:**

PROGRAM	SHIP	PRIME	CONTRACT	AWARD	NEW		HARDWARE
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>	<u>QTY</u>	<u>UNIT COST</u>
FY07	DDG-1000	Rolls-Royce	FFP	MAR-07	New	4	18,316
FY09	DDG-1000	Rolls-Royce	FFP	JAN-08	Option	2	19,706

**IV. DELIVERY DATE:**

PROGRAM	SHIP	EARLIEST SHIP	MONTHS REQUIRED	PRODUCTION	REQUIRED
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	33	24	Feb-11
FY09	DDG-1000	Dec-18	33	24	Mar-14

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A  
 NOTE:

**SHIPBUILDING AND CONVERSION, NAVY**  
 MAJOR SHIP COMPONENT FACT SHEET  
 (Dollars in Thousands)

**P-35 EXHIBIT**  
**FY2016 PRESIDENTS BUDGET**  
 February 2015

Ship Type: **DDG 1000**  
 Equipment Item: **ADVANCED GUN SYSTEM (AGS)**  
 PARM Code: **IWS 3C YF**

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

The Advanced Gun System is a fully automated, single barrel, 155mm, vertically loaded, stabilized gun mount that is capable of storing, initializing/programming, loading and firing projectiles and propelling charges. Its primary mission is Land Attack Warfare in support of ground and expeditionary forces beyond the Line of Sight in the DDG-1000 system's littoral engagement area where precise, rapid-response, high-volume, long-range fire support is required. Each DDG-1000 will carry two complete AGS systems - Mount 61 and 62. The above deck configurations are identical but each has a slightly different below deck configuration. Presently, the only projectile used in AGS is the Long Range Land Attack Projectile (LRLAP). It is a long-range, GPS guided round that delivers a unitary High Explosive (HE) payload at a controlled burst height above a target or during contact with a range of 20 to 83nm.

**II. CURRENT FUNDING:**

**P-35 Category**

	FY 2007		FY 2009	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	4	302,254	2	206,747
Battle Spares		19,000		0
Technical Support Services		8,934		0
Other Costs (NRE)		157,939		40,655
Total		488,127		247,402

**III. CONTRACT DATA:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>PRIME</u>	<u>CONTRACT</u>	<u>AWARD</u>	<u>NEW</u>	<u>QTY</u>	<u>HARDWARE</u>
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>		<u>UNIT COST</u>
FY07	DDG-1000	BAE	CPAF/IF	APR-08		4	75,564
FY09	DDG-1000	BAE	TBD	APR-12		2	103,374

**IV. DELIVERY DATE:**

<u>PROGRAM</u>	<u>SHIP</u>	<u>EARLIEST SHIP</u>	<u>MONTHS REQUIRED</u>	<u>PRODUCTION</u>	<u>REQUIRED</u>
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	31	39	Jan-10
FY09	DDG-1000	Dec-18	31	39	Feb-13

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

SHIPBUILDING AND CONVERSION, NAVY  
 MAJOR SHIP COMPONENT FACT SHEET  
 (Dollars in Thousands)

P-35 EXHIBIT  
 FY2016 PRESIDENTS BUDGET  
 February 2015

Ship Type: DDG 1000  
 Equipment Item: CLOSE-IN GUN SYSTEM (CIGS)  
 PARM Code: IWS 3C YF

**I. DESCRIPTION/CHARACTERISTICS/PURPOSE:**

The Close-In Gun System (CIGS) supports the DDG-1000 system in achieving Integrated Air and Surface Dominance with the capability to neutralize hostile surface vessels and aircraft at short ranges. CIGS also supports the Military Operations Other than War (MOOTW) missions, such as performing maritime interdiction, conducting maritime law enforcement, and supporting hostage rescue. Two (2) CIGS will be mounted on the aft end of the hanger. The CIGS MK 46 MOD 2 GWS is composed of a turret assembly that houses the MK 44 MOD 2 cannon and an advanced Fire Control System that includes a ballistic solution computer, an electro-optical sensor package, and an eye-safe laser range finder. The system uses a forward-looking infrared sensor, a low-light television camera, and eye safe laser range finder with a closed-loop tracking system to optimize accuracy against small, high-speed surface targets. The system can be operated locally from the gun control station inside the turret, remotely from the MK 46 MOD 2 GWS Remote Gun Station Operator (RGSO) panel in the Combat Information Center (CIC), or manually using hand cranks from inside the turret. The 30mm cannon, MK 44 MOD 2, is a single barrel, open bolt, dual feed, electrically powered, chain-driven automatic cannon. The system has a magazine capacity of 424 rounds, a dual-feed capability with a firing rate of 200 rounds per minute, and is capable of selectively switching between ammunition types and firing modes.

**II. CURRENT FUNDING:**

**P-35 Category**

	FY 2007		FY 2009	
	<u>QTY</u>	<u>COST</u>	<u>QTY</u>	<u>COST</u>
Major Hardware	4	18,034	2	8,535
Technical Support Services		7,177		3,381
Other Costs (NRE)		12,940		2,880
Total		38,151		14,795

**III. CONTRACT DATA:**

PROGRAM	SHIP	PRIME	CONTRACT	AWARD	NEW	<u>QTY</u>	HARDWARE
<u>YEAR</u>	<u>TYPE</u>	<u>CONTRACTOR</u>	<u>TYPE</u>	<u>DATE</u>	<u>/OPTION</u>		<u>UNIT COST</u>
FY07	DDG-1000	TBD	FFP	MAR-14		4	4,509
FY09	DDG-1000	TBD	FFP	MAR-16		2	4,267

**IV. DELIVERY DATE:**

PROGRAM	SHIP	EARLIEST SHIP	MONTHS REQUIRED	PRODUCTION	REQUIRED
<u>YEAR</u>	<u>TYPE</u>	<u>DELIVERY DATE</u>	<u>BEFORE DELIVERY</u>	<u>LEADTIME</u>	<u>AWARD DATE</u>
FY07	DDG-1000	Nov-15	6	22	Jul-13
FY09	DDG-1000	Dec-18	6	18	Dec-16

**V. COMPETITION/SECOND SOURCE INITIATIVES:**

N/A

NOTE: