Selected Acquisition Report (SAR)

RCS: DD-A&T(Q&A)823-197

DDG 1000 Zumwalt Class Destroyer (DDG 1000)

As of FY 2017 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

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Common Acronyms and Abbreviations for MDAP Programs

Acq O&M - Acquisition-Related Operations and Maintenance
ACAT - Acquisition Category
ADM - Acquisition Decision Memorandum
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
$B - Billions of Dollars
BA - Budget Authority/Budget Activity
Blk - Block
BY - Base Year
CAPE - Cost Assessment and Program Evaluation
CARD - Cost Analysis Requirements Description
CDD - Capability Development Document
CLIN - Contract Line Item Number
CPD - Capability Production Document
CY - Calendar Year
DAB - Defense Acquisition Board
DAE - Defense Acquisition Executive
DAMIR - Defense Acquisition Management Information Retrieval
DoD - Department of Defense
DSN - Defense Switched Network
EMD - Engineering and Manufacturing Development
EVM - Earned Value Management
FOC - Full Operational Capability
FMS - Foreign Military Sales
FRP - Full Rate Production
FY - Fiscal Year
FYDP - Future Years Defense Program
ICE - Independent Cost Estimate
IOC - Initial Operational Capability
Inc - Increment
JROC - Joint Requirements Oversight Council
$K - Thousands of Dollars
KPP - Key Performance Parameter
LRIP - Low Rate Initial Production
$M - Millions of Dollars
MDA - Milestone Decision Authority
MDAP - Major Defense Acquisition Program
MILCON - Military Construction
N/A - Not Applicable
O&M - Operations and Maintenance
ORD - Operational Requirements Document
OSD - Office of the Secretary of Defense
O&S - Operating and Support
PAUC - Program Acquisition Unit Cost

PB - President’s Budget
PE - Program Element
PEO - Program Executive Officer
PM - Program Manager
POE - Program Office Estimate
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
SCP - Service Cost Position
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting
U.S. - United States
USD(AT&L) - Under Secretary of Defense (Acquisition, Technology and Logistics)

Program Information

Program Name

DDG 1000 Zumwalt Class Destroyer (DDG 1000)

DoD Component

Navy

Responsible Office

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References

SAR Baseline (Development Estimate)

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated November 23, 2005

Approved APB

Defense Acquisition Executive (DAE) Approved Acquisition Program Baseline (APB) dated March 25, 2011

Mission and Description

DDG 1000 Zumwalt Class Destroyer (DDG 1000) will be an optimally-crewed, multi-mission surface combatant designed to fulfill volume firepower and precision strike requirements. This advanced warship will provide credible forward naval presence while operating independently or as an integral part of Naval, Joint, or Combined Expeditionary Strike Forces. Armed with an array of weapons, DDG 1000 will provide offensive, distributed, and precision firepower at long ranges in support of forces ashore. To ensure effective operations in the littoral, DDG 1000 will incorporate signature reduction, active and passive self-defense systems, and enhanced survivability features.

Executive Summary

Program Highlights Since Last Report:

General

The Zumwalt program has made significant progress conducting the test, activation, and trials phase of the most challenging and complex class of ships the Navy has ever constructed. The Navy and the shipbuilder, General Dynamics Bath Iron Works (BIW) have evaluated yard-wide workload and scheduling for all construction efforts and contracts to address cost effective ship delivery approaches. The program continues to hold monthly joint BIW and Navy Flag-Level reviews, working closely to prepare for trials and delivery; and to ensure that lessons learned in the course of building and testing the first of class are being fully leveraged to improve performance on the follow ships.

Ship Status

The future USS Zumwalt (DDG 1000), the lead ship of the class is completing construction at BIW in Bath, ME. At approximately 98% complete, the program is heavily focused on the execution of an extensive series of test and trials in preparation for the Hull, Mechanical and Electrical (HM&E) delivery planned for mid-2016. This systematic approach to test and trials of ship systems will help identify and correct issues, mitigate risk and ensure a measured, deliberate approach as the Zumwalt transitions to the fleet. DDG 1000 completed an Alpha Trial December 7-13, 2015.

The stage test program is approximately 84% complete, with Builder's and Acceptance trials planned to commence in early 2016.

DDG 1001 is approximately 84% complete. Test and activation work is in progress with the Energize High Voltage Power milestone planned for early 2016. The ship is schedule to be christened mid-2016.

DDG 1002 is approximately 43% complete. Keel laying is planned for quarter one FY 2017. BIW completed design of the DDG 1002 steel deckhouse which is 22% complete. On December 31, 2015, Raytheon was awarded a contract for remaining DDG 1002 Mission Systems Equipment (MSE).

There are no significant software-related issues with this program at this time.

History of Significant Developments Since Program Initiation:

January 8, 1995: The program achieved Milestone 0 and started the Cost and Operational Effectiveness Analysis for the surface combatant for the twenty-first century (SC 21), comprised of destroyers (DD 21) and cruisers (CG 21). The DD 21 was intended to replace the DDG 51 by providing advanced land attack and multi-mission capabilities.

January 1998: The program achieved Milestone I for DD 21 and proceeded into the Program Definition and Risk Reduction phase. Primary Milestone I risks identified were a ship with a new hull form, several new combat system elements, significantly reduced manning level, very low signatures, and at lower costs than DDG 51. In order to maintain competitive cost pressure and to maintain technical competition, the Navy awarded Phase I and II concept development contracts to two industry teams.

November 13, 2001: The DD 21 program was restructured into the DD(X) program.

April 2002: Phase II concept development concluded and the Navy competitively selected and awarded a Design and Development contract to Northrop Grumman (NG) Ship systems (now Huntington Ingalls Shipbuilding – HII). The NG team was subsequently expanded to a DD(X) “national” team that also included BIW, Lockheed Martin, and Boeing. The NG concept required RDT&E increases for many of the new technologies including integrated electric drive, radars, software development, optimized manning, the advanced gun, and munitions. To reduce risk, the Navy contracted for Engineering Development Models (EDMs) for 10 subsystems.

2005: The 10 EDMs completed testing and reached sufficient technical maturity to support a Critical Design Review (CDR). At that point, DD(X) was programmed to consist of 10 highly automated, reduced signature, reduced manning electric drive ships. DD(X)’s major new systems included Dual Band Radar (DBR), and Advanced Guns System (AGS) with a Long Range Land Attack Projectile (LRLAP).

November 23, 2005: The program achieved Milestone B. Major outstanding risks at Milestone B were related to the schedule and cost of software development and the integration and test of Mission Systems, as well as the costs of shipbuilder construction, DBR and AGS.

April 7, 2006: The DD(X) program was renamed DDG 1000 and detail design contracts for the dual lead ships were awarded to BIW and Northrop Grumman Shipbuilding (NGSB) (formerly Information Sciences Institute).

December 22, 2007: The ADM was issued authorizing the Navy to enter Production Phase for DDG 1000.

February 13, 2008: The DoD approved LRIP for seven ships, and lead ship construction contracts were awarded to BIW and NGSB.

July 31, 2008: The Navy provided testimony to the House Armed Services Committee Seapower and Expeditionary forces Subcommittee requesting Congressional support to truncate the DDG 1000 program and restart the DDG 51 program.

February 2010: The PB FY 2011 budget submission confirmed the reduction of the DDG 1000 Program to three ships as a result of the Future Surface Combatant Radar Hull Study in which the Navy concluded a modified DDG 51 with an Advanced Missile Defense Radar was the most cost-effective solution to fleet air and missile defense requirements.

February 1, 2010: The Secretary of the Navy notified Congress of a critical DDG 1000 program Nunn-McCurdy breach to the PAUC and APUC. This breach was due to the change in ship procurement quantity, not program performance.

June 1, 2010: The USD (AT&L) certified a restructured three-ship program that included removal of the Volume Search Radar from the ship design, changed the IOC from FY 2015 to FY 2016, and revised test and evaluation requirements

October 8, 2010: Milestone B prime was achieved for the restructured program following the Nunn-McCurdy certification.

March 25, 2011: The APB for the restructured DDG 1000 Program was approved.

March 2013: Due to the FY 2013 sequestration impacts commencing during the execution year, the program experienced budget reductions of approximately $70.2M of Shipbuilding and Conversion, Navy (SCN) and $10.3M of RDT&E. The approximate $70.2M FY 2013 SCN sequester prevented the award of a $145M FY 2013 option to Raytheon for remaining MSE efforts for DDG 1000, 1001, and 1002, necessitating restructuring of the FY 2013, FY 2014, and FY 2015 options. A Below Threshold Reprograming for $9.999M of RDT&E was approved to continue LRLAP Guided Flight Tests and combat systems development.

August 2, 2013: The Navy awarded a contract modification for the design and construction of a steel deckhouse, hangar, and Aft Peripheral Vertical Launch System (PVLS) for DDG 1002 to BIW. The award occurred after the DDG 1002 sole source negotiation with HII for the procurement of the DDG 1002 composite deckhouse, composite hangar, and Aft PVLS did not reach an affordable solution and deliveries of these components for DDG 1002 were becoming time critical. The Navy concurrently pursued a steel deckhouse, hangar, and Aft PVLS using limited competition.

April 12, 2014: DDG 1000 was christened at BIW in Bath, ME.

December 31, 2015: Raytheon was awarded a contract for remaining DDG 1002 MSE.

Threshold Breaches

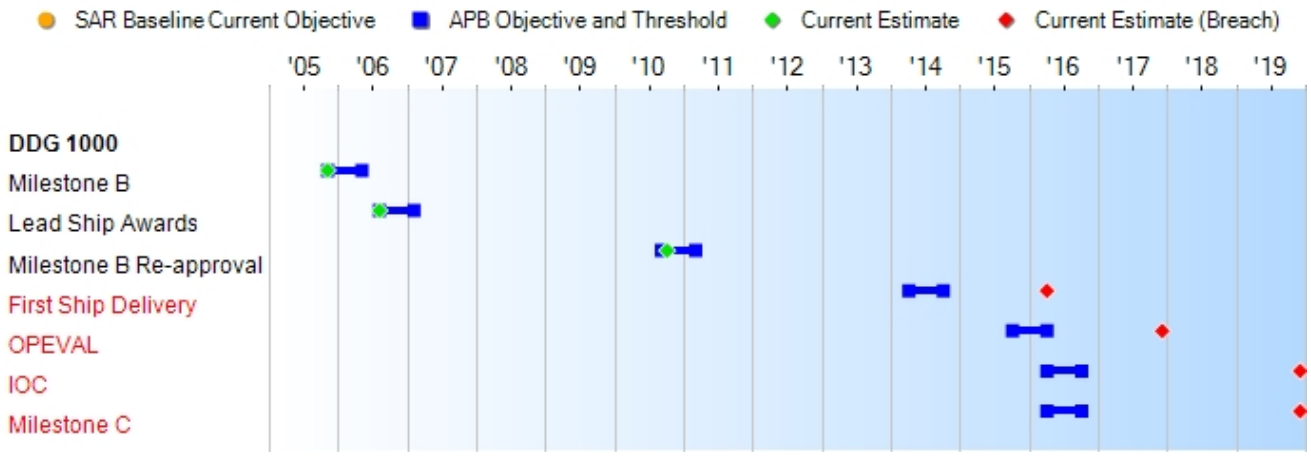
APB Breaches		
Schedule		☑
Performance		☐
Cost	RDT&E	☐
	Procurement	☐
	MILCON	☐
	Acq O&M	☐
O&S Cost		☐
Unit Cost	PAUC	☐
	APUC	☐

Nunn-McCurdy Breaches		
Current UCR Baseline		
	PAUC	None
	APUC	None
Original UCR Baseline		
	PAUC	None
	APUC	None

Explanation of Breach

Schedule Breach is due to technical risk, shipyard production and test challenges, and shipyard workforce constraints. The complexity of activation of the ship's unique Engineering Control System and Integrated Power System has extended the time required for test and activation. Current estimate for First Ship Delivery is mid-2016. Operational Evaluation, IOC and Milestone C are being assessed in view of Hull, Mechanical and Electrical (HM&E) delivery delays. An updated APB is in process.

Schedule



Schedule Events					
Events	**SAR Baseline Development Estimate**	**Current APB Development Objective/Threshold**		**Current Estimate**	
Milestone B	Nov 2005	Nov 2005	May 2006	Nov 2005	
Lead Ship Awards	Jan 2006	Aug 2006	Feb 2007	Aug 2006	
Milestone B Re-approval	N/A	Sep 2010	Mar 2011	Oct 2010	
First Ship Delivery	Sep 2012	Apr 2014	Oct 2014	**Apr 2016**[1]	(Ch-1)
OPEVAL	Sep 2013	Oct 2015	Apr 2016	**Dec 2017**[1]	(Ch-2)
IOC	Jan 2014	Apr 2016	Oct 2016	**Dec 2019**[1]	(Ch-3)
Milestone C	Mar 2015	Apr 2016	Oct 2016	**Dec 2019**[1]	(Ch-4)

[1] *APB Breach*

Change Explanations

(Ch-1) The current estimate for First Ship Delivery has changed from November 2015 to April 2016 due to delay in shipyard contract completion.
(Ch-2) The current estimate for OPEVAL has changed from August 2017 to December 2017 due to delay in shipyard contract completion.
(Ch-3) The current estimate for IOC has changed from September 2018 to December 2019 due to delay in shipyard contract completion.
(Ch-4) Milestone C is not applicable since all three ships of the class are under contract and thus IOC is used as the Milestone C date.

Notes

First Ship Delivery marks completion of DDG 1000 at point of pre-mission system activation. An initial Inspection and Survey Trial will be performed for HM&E delivery.

The Navy and the shipbuilder, General Dynamics Bath Iron Works (BIW) have evaluated yard-wide workload and scheduling for all construction efforts and contracts to address cost effective ship delivery approaches. The program continues to hold monthly joint BIW and Navy Flag-Level reviews, working closely to prepare for trials and delivery; and to ensure that lessons learned in the course of building and testing the first of class are being fully leveraged to improve performance on the follow ships.

Acronyms and Abbreviations

HM&E - Hull, Mechanical, and Electrical
OPEVAL - Operational Evaluation

Performance

Performance Characteristics				
SAR Baseline Development Estimate	**Current APB Development Objective/Threshold**		**Demonstrated Performance**	**Current Estimate**
Number of Advanced Gun Systems				
2	2	2	TBD	2
Number of Advanced Vertical Launch Cells				
128	128	80	TBD	80
Total Ship Advanced Gun System Magazine Capacity				
1200 rounds (600 rounds per magazine)	1200 rounds (600 rounds per magazine)	600 rounds total ship magazine capacity	TBD	600 rounds (300 rounds per magazine)
Number of ship's company personnel (helicopter detachment included)				
125	125	175	TBD	175
Operational Availability (Ao) for mission critical systems:				
Ao for 120-day wartime profile				
0.95	0.95	0.90	TBD	0.95
Ao for 18 month extended forward deployment				
0.95	0.95	0.90	TBD	0.95
Interoperability: All top-level IERs will be satisfied to the standards specified in the Threshold and Objective values.				
Achieve 100% of top-level IERs. DD(X) joint tactical battle management and command and control computer programs shall conform to the SIAP System Engineer's Integrated Architecture and Integrated Architecture Behavior Model now being developed. DD(X) will remain in compliance with CJCSI 6212.01 (Series), Inter-operability and Support-ability of IT and NSS, including future updates.	Achieve 100% of top-level IER. DD(X) joint tactical battle management and command and control computer programs shall conform to the SIAP System Engineer's Integrated Architecture and Integrated Architecture Behavior Model now being developed. DD(X) will remain in compliance with CJCSI 6212.01 (Series), Inter-operability and Support-ability of Information Technology and National Security Systems (IT and NSS), including future updates.	Achieve 100% top-level IER designated as critical. DD(X) joint tactical battle mangage-ment and command and control computer programs shall conform to the SIAP System Engineer's Integrated Architecture and Integrated Archi-techture Behavior Model for Track Management now being developed. DD(X) will remain in compliance with CJCSI 6212.0 (Series), Inter-operability and Support-ability of Information Technology and National Security Systems (IT and NSS), Including future updates.	TBD	Achieve 100% of interfaces; services; policy-enforcement controls; and data correctness, availability and processing requirements designated as enterprise-level or critical in the Joint integrated architecture. This includes the ORD threshold requirements for meeting the IERs which are listed in DDG 1000 ORD Rev 15 (Table B) and the DDG 1000 TEMP Rev D (Table D-3).

Classified Performance information is provided in the classified annex to this submission.

Requirements Reference

DDX ORD Change 1 dated January 23, 2006

Change Explanations

None

Acronyms and Abbreviations

CJCSI - Chairman of the Joint Chiefs of Staff Instruction
IER - Information Exchange Requirement
IT - Information Technology
NSS - National Security System
Rev - Revision
SIAP - Single Integrated Air Picture
TEMP - Test and Evaluation Master Plan

Track to Budget

RDT&E

Appn	BA	PE
Navy	05	0204202N

Project	Name		
2464	DDG 1000 System Design, Development and Integration		
4009	Advanced Gun System on DDG 1000		(Sunk)

Appn	BA	PE
Navy	04	0603513N

Project	Name		
2465	DC Survivability	(Shared)	(Sunk)
2467	Advanced Gun System	(Shared)	(Sunk)
2468	Undersea Warfare	(Shared)	(Sunk)
2469	Open System Architecture	(Shared)	(Sunk)
2470	Integrated Topside Design	(Shared)	(Sunk)
2471	Integrated Power System	(Shared)	(Sunk)
4019	Radar Upgrades	(Shared)	(Sunk)

Appn	BA	PE
Navy	05	0604300N

Project	Name		
2463	DD(X) Construction	(Shared)	(Sunk)
2464	DD(X) Sys Design, Dev & Integration	(Shared)	(Sunk)
2465	DC Survivability	(Shared)	(Sunk)
2466	MFR Development	(Shared)	(Sunk)
2735	Volume Search Radar	(Shared)	(Sunk)
4009	Advanced Gun System	(Shared)	(Sunk)
4010	Integrated Power System on DD (X)	(Shared)	(Sunk)

Appn	BA	PE
Navy	05	0604366N

Project	Name		
0439	Standard Missile Improvement: DDG 1000	(Shared)	(Sunk)

Appn	BA	PE
Navy	05	0604755N

Project	Name	
2735	Volume Search Radar	(Sunk)

Procurement

Appn	BA	PE
Navy	02	0204222N

Line Item	Name	
211900	DDG 1000 FY08-FY09	(Sunk)

Appn	BA	PE
Navy	02	0702898N

Line Item	Name
211900	Management Headquarters

Appn	BA	PE
Navy	02	0204202N

Line Item	Name	
211900	DDG 1000 Construction FY10 and follow	

Navy	1611	02	0204228N		

Line Item	Name	
211900	DDG 1000 FY05-FY07	(Sunk)

Navy	1611	05	0204222N		

Line Item	Name	
511000	Outfitting/Post Delivery	(Shared)
530000	Destroyers - Missile	(Sunk)

Navy	1810	01	0204202N		

Line Item	Name	
094700	DDG 1000 Class Support Equipment	

Cost and Funding

Cost Summary

Total Acquisition Cost							
Appropriation	BY 2005 $M			BY 2005 $M	TY $M		
	SAR Baseline Development Estimate	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Development Estimate	Current APB Development Objective	Current Estimate
RDT&E	8313.2	8994.0	9893.4	8844.4	8483.0	9325.5	9175.8
Procurement	23234.7	10195.3	11214.8	10287.3	27813.3	12497.8	13225.2
Flyaway	--	--	--	10287.3	--	--	13225.2
Recurring	--	--	--	9273.9	--	--	12065.2
Non Recurring	--	--	--	1013.4	--	--	1160.0
Support	--	--	--	0.0	--	--	0.0
Other Support	--	--	--	0.0	--	--	0.0
Initial Spares	--	--	--	0.0	--	--	0.0
MILCON	0.0	0.0	--	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	--	0.0	0.0	0.0	0.0
Total	31547.9	19189.3	N/A	19131.7	36296.3	21823.3	22401.0

Confidence Level

Confidence Level of cost estimate for current APB: 50%

The Independent Cost Estimate (ICE) to support DDG 1000 revised Milestone B decision, like all life-cycle cost estimates previously performed by the CAPE, is built upon a product-oriented work breakdown structure, based on historical actual cost information to the maximum extent possible, and, most importantly, based on conservative assumptions that are consistent with actual demonstrated contractor and government performance for a series of acquisition programs in which the Department has been successful.

It is difficult to calculate mathematically the precise confidence levels associated with life-cycle cost estimates prepared for MDAPs. Based on the rigor in methods used in building estimates, the strong adherence to the collection and use of historical cost information, and the review of applied assumptions, we project that it is about equally likely that the estimate will prove too low or too high for execution of the program described.

Total Quantity			
Quantity	SAR Baseline Development Estimate	Current APB Development	Current Estimate
RDT&E	0	0	0
Procurement	10	3	3
Total	10	3	3

Cost and Funding

Funding Summary

Appropriation Summary									
FY 2017 President's Budget / December 2015 SAR (TY$ M)									
Appropriation	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
RDT&E	8972.4	103.2	45.6	19.3	15.6	19.7	0.0	0.0	9175.8
Procurement	11916.7	479.0	343.2	195.3	110.6	77.7	41.9	60.8	13225.2
MILCON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Acq O&M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PB 2017 Total	20889.1	582.2	388.8	214.6	126.2	97.4	41.9	60.8	22401.0
PB 2016 Total	20815.1	623.7	272.5	70.0	37.5	41.7	0.0	143.6	22004.1
Delta	74.0	-41.5	116.3	144.6	88.7	55.7	41.9	-82.8	396.9

Quantity Summary										
FY 2017 President's Budget / December 2015 SAR (TY$ M)										
Quantity	Undistributed	Prior	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	To Complete	Total
Development	0	0	0	0	0	0	0	0	0	0
Production	0	3	0	0	0	0	0	0	0	3
PB 2017 Total	0	3	0	0	0	0	0	0	0	3
PB 2016 Total	0	3	0	0	0	0	0	0	0	3
Delta	0	0	0	0	0	0	0	0	0	0

Cost and Funding

Annual Funding By Appropriation

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1995	--	--	--	--	--	--	7.0
1996	--	--	--	--	--	--	10.0
1997	--	--	--	--	--	--	12.0
1998	--	--	--	--	--	--	53.5
1999	--	--	--	--	--	--	215.1
2000	--	--	--	--	--	--	281.2
2001	--	--	--	--	--	--	532.4
2002	--	--	--	--	--	--	490.4
2003	--	--	--	--	--	--	895.4
2004	--	--	--	--	--	--	1002.2
2005	--	--	--	--	--	--	1120.2
2006	--	--	--	--	--	--	1040.6
2007	--	--	--	--	--	--	755.8
2008	--	--	--	--	--	--	516.5
2009	--	--	--	--	--	--	431.2
2010	--	--	--	--	--	--	503.8
2011	--	--	--	--	--	--	347.9
2012	--	--	--	--	--	--	249.8
2013	--	--	--	--	--	--	120.8
2014	--	--	--	--	--	--	189.6
2015	--	--	--	--	--	--	197.0
2016	--	--	--	--	--	--	103.2
2017	--	--	--	--	--	--	45.6
2018	--	--	--	--	--	--	19.3
2019	--	--	--	--	--	--	15.6
2020	--	--	--	--	--	--	19.7
Subtotal	--	--	--	--	--	--	9175.8

Annual Funding 1319 | RDT&E | Research, Development, Test, and Evaluation, Navy							
Fiscal Year	Quantity	BY 2005 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
1995	--	--	--	--	--	--	8.0
1996	--	--	--	--	--	--	11.3
1997	--	--	--	--	--	--	13.4
1998	--	--	--	--	--	--	59.1
1999	--	--	--	--	--	--	234.8
2000	--	--	--	--	--	--	302.6
2001	--	--	--	--	--	--	565.1
2002	--	--	--	--	--	--	515.3
2003	--	--	--	--	--	--	927.3
2004	--	--	--	--	--	--	1009.8
2005	--	--	--	--	--	--	1099.7
2006	--	--	--	--	--	--	990.7
2007	--	--	--	--	--	--	702.4
2008	--	--	--	--	--	--	471.4
2009	--	--	--	--	--	--	388.5
2010	--	--	--	--	--	--	447.2
2011	--	--	--	--	--	--	301.6
2012	--	--	--	--	--	--	213.1
2013	--	--	--	--	--	--	102.0
2014	--	--	--	--	--	--	157.8
2015	--	--	--	--	--	--	161.9
2016	--	--	--	--	--	--	83.5
2017	--	--	--	--	--	--	36.2
2018	--	--	--	--	--	--	15.0
2019	--	--	--	--	--	--	11.9
2020	--	--	--	--	--	--	14.8
Subtotal	--	--	--	--	--	--	8844.4

Annual Funding 1611 | Procurement | Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2005	--	--	--	304.0	304.0	--	304.0
2006	--	--	--	706.2	706.2	--	706.2
2007	2	2587.6	--	--	2587.6	--	2587.6
2008	--	3009.9	--	149.8	3159.7	--	3159.7
2009	1	1504.3	--	--	1504.3	--	1504.3
2010	--	1378.5	--	--	1378.5	--	1378.5
2011	--	247.1	--	--	247.1	--	247.1
2012	--	512.6	--	--	512.6	--	512.6
2013	--	682.4	--	--	682.4	--	682.4
2014	--	312.5	--	--	312.5	--	312.5
2015	--	521.8	--	--	521.8	--	521.8
2016	--	479.0	--	--	479.0	--	479.0
2017	--	309.8	--	--	309.8	--	309.8
2018	--	162.0	--	--	162.0	--	162.0
2019	--	108.4	--	--	108.4	--	108.4
2020	--	75.4	--	--	75.4	--	75.4
2021	--	39.6	--	--	39.6	--	39.6
2022	--	60.8	--	--	60.8	--	60.8
Subtotal	3	11991.7	--	1160.0	13151.7	--	13151.7

Annual Funding 1611 | Procurement | Shipbuilding and Conversion, Navy							
Fiscal Year	Quantity	BY 2005 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2005	--	--	--	275.1	275.1	--	275.1
2006	--	--	--	617.3	617.3	--	617.3
2007	2	2162.4	--	--	2162.4	--	2162.4
2008	--	2432.5	--	121.0	2553.5	--	2553.5
2009	1	1179.4	--	--	1179.4	--	1179.4
2010	--	1044.2	--	--	1044.2	--	1044.2
2011	--	181.2	--	--	181.2	--	181.2
2012	--	367.7	--	--	367.7	--	367.7
2013	--	479.9	--	--	479.9	--	479.9
2014	--	215.7	--	--	215.7	--	215.7
2015	--	354.0	--	--	354.0	--	354.0
2016	--	319.1	--	--	319.1	--	319.1
2017	--	202.5	--	--	202.5	--	202.5
2018	--	103.8	--	--	103.8	--	103.8
2019	--	68.1	--	--	68.1	--	68.1
2020	--	46.4	--	--	46.4	--	46.4
2021	--	23.9	--	--	23.9	--	23.9
2022	--	36.0	--	--	36.0	--	36.0
Subtotal	3	9216.8	--	1013.4	10230.2	--	10230.2

Cost Quantity Information 1611 | Procurement | Shipbuilding and Conversion, Navy		
Fiscal Year	**Quantity**	**End Item Recurring Flyaway (Aligned With Quantity) BY 2005 $M**
2005	--	--
2006	--	--
2007	2	6474.9
2008	--	--
2009	1	2741.9
2010	--	--
2011	--	--
2012	--	--
2013	--	--
2014	--	--
2015	--	--
2016	--	--
2017	--	--
2018	--	--
2019	--	--
2020	--	--
2021	--	--
2022	--	--
Subtotal	3	9216.8

Annual Funding 1810 | Procurement | Other Procurement, Navy							
Fiscal Year	Quantity	TY $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	--
2015	--	--	--	--	--	--	--
2016	--	--	--	--	--	--	--
2017	--	33.4	--	--	33.4	--	33.4
2018	--	33.3	--	--	33.3	--	33.3
2019	--	2.2	--	--	2.2	--	2.2
2020	--	2.3	--	--	2.3	--	2.3
2021	--	2.3	--	--	2.3	--	2.3
Subtotal	--	73.5	--	--	73.5	--	73.5

Annual Funding 1810 | Procurement | Other Procurement, Navy							
Fiscal Year	Quantity	BY 2005 $M					
		End Item Recurring Flyaway	Non End Item Recurring Flyaway	Non Recurring Flyaway	Total Flyaway	Total Support	Total Program
2007	--	--	--	--	--	--	--
2008	--	--	--	--	--	--	--
2009	--	--	--	--	--	--	--
2010	--	--	--	--	--	--	--
2011	--	--	--	--	--	--	--
2012	--	--	--	--	--	--	--
2013	--	--	--	--	--	--	--
2014	--	--	--	--	--	--	--
2015	--	--	--	--	--	--	--
2016	--	--	--	--	--	--	--
2017	--	26.3	--	--	26.3	--	26.3
2018	--	25.7	--	--	25.7	--	25.7
2019	--	1.7	--	--	1.7	--	1.7
2020	--	1.7	--	--	1.7	--	1.7
2021	--	1.7	--	--	1.7	--	1.7
Subtotal	--	57.1	--	--	57.1	--	57.1

Cost Quantity Information 1810 | Procurement | Other Procurement, Navy		
Fiscal Year	**Quantity**	**End Item Recurring Flyaway (Aligned With Quantity) BY 2005 $M**
2007	--	29.5
2008	--	--
2009	--	27.6
2010	--	--
2011	--	--
2012	--	--
2013	--	--
2014	--	--
2015	--	--
2016	--	--
2017	--	--
2018	--	--
2019	--	--
2020	--	--
2021	--	--
Subtotal	--	57.1

Low Rate Initial Production

Item	Initial LRIP Decision	Current Total LRIP
Approval Date	11/22/2005	10/8/2010
Approved Quantity	8	3
Reference	Milestone B ADM	Milestone B ADM
Start Year	2007	2007
End Year	2014	2009

The Current Total LRIP Quantity is more than 10% of the total production quantity due to the revised Milestone B ADM of October 8, 2010 reducing the LRIP quantity to three ships, which represents the total quantity remaining on the program.

Foreign Military Sales

None

Nuclear Costs

None

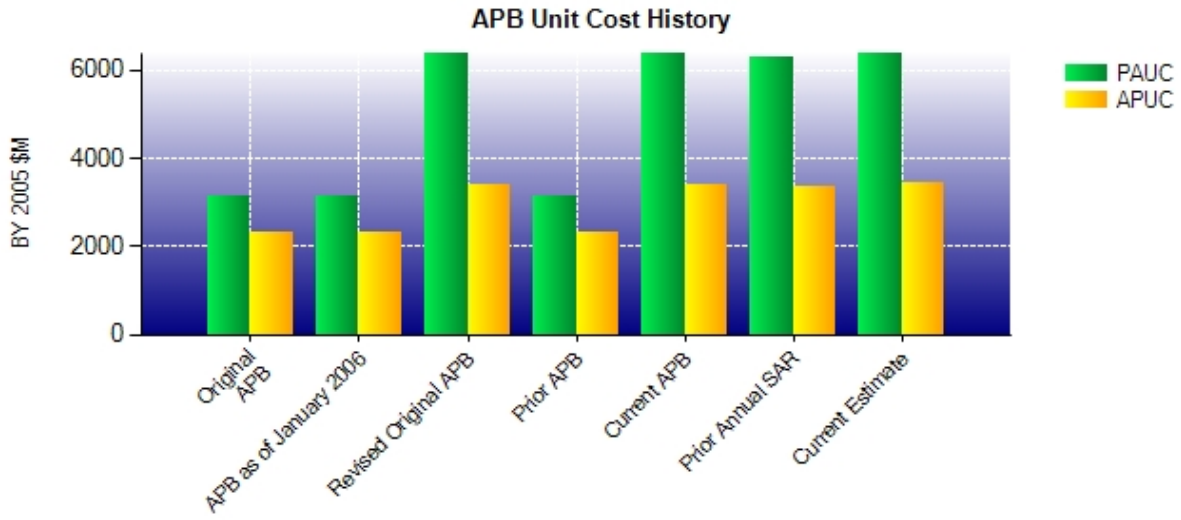
Unit Cost

Unit Cost Report

Item	BY 2005 $M Current UCR Baseline (Mar 2011 APB)	BY 2005 $M Current Estimate (Dec 2015 SAR)	% Change
Program Acquisition Unit Cost			
Cost	19189.3	19131.7	
Quantity	3	3	
Unit Cost	6396.433	6377.233	-0.30
Average Procurement Unit Cost			
Cost	10195.3	10287.3	
Quantity	3	3	
Unit Cost	3398.433	3429.100	+0.90

Item	BY 2005 $M Revised Original UCR Baseline (Mar 2011 APB)	BY 2005 $M Current Estimate (Dec 2015 SAR)	% Change
Program Acquisition Unit Cost			
Cost	19189.3	19131.7	
Quantity	3	3	
Unit Cost	6396.433	6377.233	-0.30
Average Procurement Unit Cost			
Cost	10195.3	10287.3	
Quantity	3	3	
Unit Cost	3398.433	3429.100	+0.90

Unit Cost History



Item	Date	BY 2005 $M		TY $M	
		PAUC	APUC	PAUC	APUC
Original APB	Nov 2005	3154.790	2323.470	3629.620	2781.320
APB as of January 2006	Nov 2005	3154.790	2323.470	3629.620	2781.320
Revised Original APB	Mar 2011	6396.433	3398.433	7274.433	4165.933
Prior APB	Nov 2005	3154.790	2323.470	3629.620	2781.320
Current APB	Mar 2011	6396.433	3398.433	7274.433	4165.933
Prior Annual SAR	Dec 2014	6289.367	3357.767	7334.700	4296.600
Current Estimate	Dec 2015	6377.233	3429.100	7467.000	4408.400

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)									
Initial PAUC Development Estimate	Changes								PAUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
3629.630	609.833	2104.837	38.100	22.067	1062.533	0.000	0.000	3837.370	7467.000

Current SAR Baseline to Current Estimate (TY $M)									
Initial APUC Development Estimate	Changes								APUC Current Estimate
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2781.330	606.967	125.469	37.167	-126.500	983.967	0.000	0.000	1627.070	4408.400

SAR Baseline History				
Item	SAR Planning Estimate	SAR Development Estimate	SAR Production Estimate	Current Estimate
Milestone I	N/A	N/A	N/A	N/A
Milestone B	Nov 2005	Nov 2005	N/A	Nov 2005
Milestone C	Mar 2015	Mar 2015	N/A	Dec 2019
IOC	Jan 2014	Jan 2014	N/A	Dec 2019
Total Cost (TY $M)	36296.2	36296.3	N/A	22401.0
Total Quantity	10	10	N/A	3
PAUC	3629.620	3629.630	N/A	7467.000

Cost Variance

Summary TY $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Development Estimate)	8483.0	27813.3	--	36296.3
Previous Changes				
Economic	+11.4	+1813.3	--	+1824.7
Quantity	--	-19092.9	--	-19092.9
Schedule	+2.8	+57.7	--	+60.5
Engineering	+445.7	-379.5	--	+66.2
Estimating	+171.4	+2677.9	--	+2849.3
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+631.3	-14923.5	--	-14292.2
Current Changes				
Economic	-2.8	+7.6	--	+4.8
Quantity	--	--	--	--
Schedule	--	+53.8	--	+53.8
Engineering	--	--	--	--
Estimating	+64.3	+274.0	--	+338.3
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+61.5	+335.4	--	+396.9
Total Changes	+692.8	-14588.1	--	-13895.3
CE - Cost Variance	9175.8	13225.2	--	22401.0
CE - Cost & Funding	9175.8	13225.2	--	22401.0

Summary BY 2005 $M				
Item	**RDT&E**	**Procurement**	**MILCON**	**Total**
SAR Baseline (Development Estimate)	8313.2	23234.7	--	31547.9
Previous Changes				
Economic	--	--	--	--
Quantity	--	-14646.0	--	-14646.0
Schedule	+1.7	+63.8	--	+65.5
Engineering	+385.3	-369.4	--	+15.9
Estimating	+94.6	+1790.2	--	+1884.8
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+481.6	-13161.4	--	-12679.8
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	+37.0	--	+37.0
Engineering	--	--	--	--
Estimating	+49.6	+177.0	--	+226.6
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+49.6	+214.0	--	+263.6
Total Changes	+531.2	-12947.4	--	-12416.2
CE - Cost Variance	8844.4	10287.3	--	19131.7
CE - Cost & Funding	8844.4	10287.3	--	19131.7

Previous Estimate: December 2014

RDT&E	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	-2.8
Revised estimated for Navy-wide funding adjustments. (Estimating)	-4.5	-5.5
Revised estimate due to decision to fund DDG 1000 Class Component and Full Ship Shock Trials in the RDT&E Account. (Estimating)	+31.6	+41.6
Revised estimate to fund Test and Evaluation effort in accordance with the Test and Evaluation Master Plan. (Estimating)	+21.8	+27.5
Revised estimate due to Bipartisan Budget Act reductions. (Estimating)	-1.5	-1.9
Adjustment for current and prior escalation. (Estimating)	+2.2	+2.6
RDT&E Subtotal	+49.6	+61.5

Procurement	$M	
Current Change Explanations	Base Year	Then Year
Revised escalation indices. (Economic)	N/A	+7.6
Revised estimate due to cost increases associated with delivery delays. (Schedule)	+37.0	+53.8
Revised estimate to reflect shipbuilding completion; and on site support for HM&E test and activation activities. (Estimating)	+234.5	+364.6
Adjustment for current and prior escalation. (Estimating)	-5.0	-7.2
Revised estimate due to HM&E Activation. (Estimating)	+6.8	+10.0
Revised estimate due budget adjustments (OPN). (Estimating)	+0.2	+0.3
Revised estimate due to reduction in Outfitting/Post Delivery; Congressional reductions; FY 2022 Phasing outside the FYDP. (Estimating)	-59.5	-93.7
Procurement Subtotal	+214.0	+335.4

Contracts

Contract Identification

Appropriation: Procurement

Contract Name: Phase IV AGS Equipment (DDG 1002)

Contractor: BAE Systems

Contractor Location: 4800 E. River Rd
Minneapolis, MN 55421

Contract Number: N00024-12-C-5311

Contract Type: Fixed Price Incentive(Firm Target) (FPIF), Cost Plus Fixed Fee (CPFF)

Award Date: October 26, 2011

Definitization Date: November 19, 2012

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
73.0	N/A	2	190.4	201.6	2	172.1	173.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to initial target was the not-to-exceed price for hardware being procured under a Undefinitized Contract Action (UCA). Current contract price represents the target for the full scope of the contract.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/1/2016)	-2.7	-1.4
Previous Cumulative Variances	+1.9	-6.3
Net Change	-4.6	+4.9

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to subcontractor hardware cost overruns, greater than anticipated engineering support for magazine testing, and costs incurred from Servo Amplifier Unit repair & rework.

The favorable net change in the schedule variance is due to early completion of magazine assembly, early receipt of vendor materials for the fixed shields and upper & lower guns.

General Contract Variance Explanation

The unfavorable cumulative cost variance is minor and schedule variance is recoverable; contractor forecasts on-time contract completion. There is not an impact to in yard need date delivery.

Notes

The Navy awarded the Advanced Gun System (AGS) for DDG 1002 to British Aerospace Engineering (BAE) on October 26, 2011 as an UCA. The UCA was definitized November 19, 2012. The definitization was delayed by changes in contract terms and conditions to better control cost and performance and a change in government contracts negotiator personnel. BAE established the Performance Measurement Baseline for the DDG 1002 effort, and conducted an Integrated Baseline Review for that effort in April 2013.The contract includes options for FY 2012, FY 2013, and FY 2014 to complete the two AGS for the DDG 1002 and the supporting systems.

This contract is more than 90% complete; therefore, this is the final report for this contract.

Contract Identification

Appropriation: Procurement

Contract Name: Phase IV BIW Construciton (DDG 1002)

Contractor: General Dynamics

Contractor Location: 700 Washington Street
Bath, ME 04530

Contract Number: N00024-11-C-2306/881

Contract Type: Fixed Price Incentive (Successive Targets) (FPIS), Firm Fixed Price (FFP)

Award Date: September 15, 2011

Definitization Date: September 15, 2011

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
665.1	N/A	1	673.9	N/A	1	806.6	771.2

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to this being the first time this contract is reported as a unique effort. Previously, contracts N00024-11-C-2306/880, 881, and 882 were reported as a single contract effort.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/1/2016)	-90.2	-15.2
Previous Cumulative Variances	--	--
Net Change	-90.2	-15.2

Cost and Schedule Variance Explanations

The unfavorable cumulative cost variance is due to overall effects of shipyard production and test challenges. The program is aggressively working to minimize the overall exposure and is addressing the cost variance through Cost Reduction Candidates (CRCs). Through month ending December 2015, the program has processed modifications for $18.6M of scope reductions for the contract. An additional $3.0M of modifications for scope reductions have been proposed and the program will continue to identify CRCs.

The unfavorable cumulative schedule variance is due to yard-wide workforce constraints and scheduling impacts.

The Navy and the shipbuilder, General Dynamics Bath Iron Works (BIW) have evaluated yard-wide workload and scheduling for all construction efforts and contracts to address cost effective ship delivery approaches. The program continues to hold monthly joint BIW and Navy Flag-Level reviews, working closely to prepare for trials and delivery; and to ensure that lessons learned in the course of building and testing the first of class are being fully leveraged to improve performance on the follow ships.

Notes

This is the first time this contract is being reported.

Contract Identification

Appropriation: Procurement

Contract Name: Phase IV BIW Construction (DDG 1001)

Contractor: General Dynamics

Contractor Location: 700 Washington Street
Bath, ME 04530

Contract Number: N00024-11-C-2306/880

Contract Type: Fixed Price Incentive (Successive Targets) (FPIS), Firm Fixed Price (FFP)

Award Date: September 15, 2011

Definitization Date: September 15, 2011

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
663.4	N/A	1	762.5	N/A	1	915.7	939.2

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to this being the first time this contract is reported as a unique effort. Previously, contracts N00024-11-C-2306/880, 881, and 882 were reported as a single contract effort.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/1/2016)	-148.0	-66.8
Previous Cumulative Variances	--	--
Net Change	-148.0	-66.8

Cost and Schedule Variance Explanations

The unfavorable cumulative cost variance is due to overall effects of shipyard production and test challenges in addition to variances related to redetermination areas, including material and engineering support. The program is aggressively working to minimize the overall exposure and is addressing the cost variance through Cost Reduction Candidates (CRCs). Through month ending December 2015, the program has processed modifications for $14.2M of scope reductions for the contract. An additional $2.4M of modifications for scope reductions have been proposed for the program and will continue to identify CRCs.

Bath Iron Works (BIW) and the Navy have evaluated yard-wide workload and scheduling for all construction efforts and contracts to address cost effective ship delivery approaches. The Program Office will continue reviewing that analysis, including impacts when DDG 1000 starts Post Delivery Availability and Mission Systems Activation, and subsequently adjusting the related Navy Estimated Price at Completion, if necessary.

The unfavorable cumulative schedule variance is due to yard-wide workforce constraints and scheduling impacts being addressed in monthly joint BIW and Navy Flag-Level reviews.

Notes

This is the first time this contract is being reported.

Contract Identification

Appropriation: Procurement

Contract Name: Phase IV BIW Construction (DDG 1002 Steel Superstructure (Deckhouse))

Contractor: General Dynamics

Contractor Location: 700 Washington Street
Bath, ME 04530

Contract Number: N00024-11-C-2306/882

Contract Type: Fixed Price Incentive(Firm Target) (FPIF)

Award Date: August 02, 2013

Definitization Date: August 02, 2013

Contract Price							
Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price At Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
212.0	N/A	1	215.9	237.5	1	183.9	212.1

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to this being the first time this contract is reported as a unique effort. Previously, contracts N00024-11-C-2306/880, 881, and 882 were reported as a single contract effort.

Contract Variance		
Item	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/1/2016)	+5.4	-29.1
Previous Cumulative Variances	--	--
Net Change	+5.4	-29.1

Cost and Schedule Variance Explanations

The favorable cumulative cost variance is due to Support and Manufacturing hours at $2.9M and $2.7M respectively with a negative overall rate offset ($0.8M). The at-complete variance is projected to be positive at $0.6M. This is primarily attributable to hours at positive $2.8M with a negative rate offset of ($2.2M), or negative ($1.85) per hour. The Support burden center at positive $2.9M over the life of the project is responsible for the total positive variance due to hours, while the Manufacturing burden center at negative ($2M) over the life of the project is responsible for the total rate variance at completion.

The unfavorable cumulative schedule variance is due to yard-wide workforce constraints and scheduling impacts.

General Contract Variance Explanation

The unfavorable schedule variance is due to overall effects of shipyard production and test challenges.

Bath Iron Works (BIW) and the Navy have evaluated yard-wide workload and scheduling for all construction efforts and contracts to address cost effective ship delivery approaches. The Program Office will continue reviewing that analysis, including impacts when the DDG 1000 starts Post Delivery Availability and Mission Systems Activation, and subsequently adjusting the related Navy Estimated Price at Completion, if necessary.

Notes

This is the first time this contract is being reported.

Deliveries and Expenditures

Deliveries				
Delivered to Date	**Planned to Date**	**Actual to Date**	**Total Quantity**	**Percent Delivered**
Development	0	0	0	--
Production	0	0	3	0.00%
Total Program Quantity Delivered	0	0	3	0.00%

Expended and Appropriated (TY $M)			
Total Acquisition Cost	22401.0	Years Appropriated	22
Expended to Date	19696.0	Percent Years Appropriated	78.57%
Percent Expended	87.92%	Appropriated to Date	21471.3
Total Funding Years	28	Percent Appropriated	95.85%

The above data is current as of February 09, 2016.

Operating and Support Cost

Cost Estimate Details

Date of Estimate:	June 02, 2015
Source of Estimate:	Service ICE
Quantity to Sustain:	3
Unit of Measure:	Ship
Service Life per Unit:	35.00 Years
Fiscal Years in Service:	FY 2017 - FY 2055

O&S cost estimates are based on the 2015 Gate 6 Review of DDG 1000 Class. Costs are shown in BY 2005 dollars. The estimate is based on an average unit cost of three ships with an average 35 year service life. The estimate includes separately priced mission system equipment sustainment cost. Mid-life modernization is not included.

The O&S costs are provided in revised cost elements based on the CAPE 2014 O&S Cost-Estimating Guide.

Sustainment Strategy

DDG 1000 maintenance is apportioned to either the ship or a land-based facility. There are two levels of maintenance planned for the DDG 1000 ship class; "on-ship" - accomplished by ship's force and "off-ship" - accomplished through maintenance support contracts in addition to legacy Navy maintenance infrastructure. Maintenance support contracts similar to legacy Multi Ship/Multi Option contracting strategy for repairs and overhauls are planned. The DDG 1000 program provides Integrated Logistics Support oversight and guidance to Participating Acquisition Resource Managers that develop various sustainment approaches for combat systems and Communications, Command, Control, Computers, and Intelligence.

Antecedent Information

The most analogous system to DDG 1000 is DDG 51. The DDG 1000 and DDG 51 ships differ in various aspects that make comparison difficult. Considerations include new technologies, size difference, and an all electric ship design.

The 2014 unit cost of the DDG 51 (Antecedent) is derived using the Naval Visibility and Management of Operating and Support Costs database and is shown in BY 2005 $M. DDG 51 estimates are based on a service life of 35 years for the 28 Flight I and Flight II ships and 40 years for the 54 Flight IIA and Flight III ships. The DDG 51 reports in BY 1987 $M.

Annual O&S Costs BY2005 $M		
Cost Element	**DDG 1000 Average Annual Cost Per Ship**	**DDG 51 (Antecedent) Average Annual Cost Per Ship**
Unit-Level Manpower	12.776	12.640
Unit Operations	8.603	6.960
Maintenance	22.197	3.440
Sustaining Support	8.131	0.920
Continuing System Improvements	15.368	2.870
Indirect Support	6.623	5.730
Other	0.000	0.000
Total	73.698	32.560

Item	Total O&S Cost $M			
	DDG 1000			DDG 51 (Antecedent)
	Current Development APB Objective/Threshold		Current Estimate	
Base Year	7744.4	8518.8	7738.3	93259.6
Then Year	15245.3	N/A	14946.0	N/A

Disposal Cost is included in the Operating and Support Cost of the current APB objective and threshold for this program.

Equation to Translate Annual Cost to Total Cost

The equation that links the unitized cost to the total cost for DDG 1000 is Total Cost = average annual cost per ship * number of ships * service life = $73.7M per Ship x 3 Ships x 35 year (service life) = $7,738.3M (BY 2005)

O&S Cost Variance		
Category	**BY 2005 $M**	**Change Explanations**
Prior SAR Total O&S Estimates - Dec 2014 SAR	5740.3	
Programmatic/Planning Factors	0.0	
Cost Estimating Methodology	0.0	
Cost Data Update	1998.0	Increased costs in personnel, fuel, and Mission System Equipment Maintenance
Labor Rate	0.0	
Energy Rate	0.0	
Technical Input	0.0	
Other	0.0	
Total Changes	1998.0	
Current Estimate	7738.3	

Disposal Estimate Details

Date of Estimate:	June 02, 2015
Source of Estimate:	Service ICE
Disposal/Demilitarization Total Cost (BY 2005 $M):	Total costs for disposal of all Ship are 53.7

O&S Baseline data is from MS B recertification Program Life Cycle Cost Estimates (PLCCE).