Selected Acquisition Report (SAR)

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

DDG 1000 Zumwalt Class Destroyer (DDG 1000)

As of FY 2015 President's Budget

Defense Acquisition Management
Information Retrieval
(DAMIR)

Table of Contents

Common Acronyms and Abbreviations

Acq O&M - Acquisition-Related Operations and Maintenance
APB - Acquisition Program Baseline
APPN - Appropriation
APUC - Average Procurement Unit Cost
BA - Budget Authority/Budget Activity
BY - Base Year
DAMIR - Defense Acquisition Management Information Retrieval
Dev Est - Development Estimate
DoD - Department of Defense
DSN - Defense Switched Network
Econ - Economic
Eng - Engineering
Est - Estimating
FMS - Foreign Military Sales
FY - Fiscal Year
IOC - Initial Operational Capability
$K - Thousands of Dollars
LRIP - Low Rate Initial Production
$M - Millions of Dollars
MILCON - Military Construction
N/A - Not Applicable
O&S - Operating and Support
Oth - Other
PAUC - Program Acquisition Unit Cost
PB - President's Budget
PE - Program Element
Proc - Procurement
Prod Est - Production Estimate
QR - Quantity Related
Qty - Quantity
RDT&E - Research, Development, Test, and Evaluation
SAR - Selected Acquisition Report
Sch - Schedule
Spt - Support
TBD - To Be Determined
TY - Then Year
UCR - Unit Cost Reporting

Program Information

Program Name

DDG 1000 Zumwalt Class Destroyer (DDG 1000)

DoD Component

Navy

Responsible Office

Responsible Office

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Date Assigned August 6, 2010

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

The FY 2011 PB 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 is the most cost-effective solution to fleet air and missile defense requirements. The Secretary of the Navy notified Congress on February 1, 2010 of a critical DDG 1000 program Nunn-McCurdy breach to the PAUC and APUC due to the quantity change, not program performance. On June 1, 2010 Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) certified a restructure 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. Additionally, the DDG 1000 program was directed to be funded to the Director of Cost Assessment and Program Evaluation cost estimate in FY 2011 - FY 2015 and to the Navy estimate in FY 2016 and beyond.

The Navy submitted a request via Omnibus and Above Threshold Reprogramming (ATR) to fund the DDG 1000 program in accordance with the 2011 Annual Cost Review in the amount of $90.6M. The $90.6M, received in October 2012, addressed FY 2011 shortfalls of $90.6M.

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. A Below Threshold Reprograming for $9.999M of RDT&E was approved to continue Long Range Land Attack Projectile Guided Flight Tests and combat systems development. An ATR for $70.279M was received in October, 2013 to restore the SCN sequestration mark. These marks require restructuring the Raytheon contract options, and the restructuring efforts are ongoing.

Negotiations for the remaining Mission Systems Equipment (MSE) efforts for DDG 1000, 1001 and 1002 with Raytheon were completed in December 2012. The December 2012 Undefinitized Contract Action (UCA) with Raytheon for the remaining MSE included options for FY 2013, FY 2014, and FY 2015. The $70M FY 2013 SCN sequester prevented awarding the $145M FY 2013 option necessitating restructuring of the FY 2013, FY 2014, and FY 2015 options. The 2012 UCA was definitized on October 22, 2013 which included $58M for DDG 1000/1001 remaining MSE and a $17M FY 2014 option for long lead DDG 1002 MSE which was executed on November 22, 2013. The balance of DDG 1002 MSE remains to be re-negotiated for award. Additionally, the DDG 1002 sole source negotiations with Huntington Ingalls Industries for the procurement of the DDG 1002 deckhouse, hangar, and Aft Peripheral Vertical Launch System (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 limited competition. The Navy awarded Bath Iron Works (BIW) a contract modification for the design and construction of a steel deckhouse, hangar, and Aft PVLS for DDG 1002 on August 2, 2013. The program received a Request for Equitable Adjustment from BIW for DDG 1000 design, construction, and support in October 2012 with a BIW resubmittal in September 2013 and Navy analysis is ongoing.

In October 2010, in conjunction with the Milestone B decision, certification was made pursuant to section 2366b of title 10, United States Code. Based on program maturity, DDG 1000 was deemed ready to re-enter the Engineering and Manufacturing Development phase; however, the USD(AT&L) waived two of the 2366b provisions, (a)(1)(B) and (a)(1)(D). With the submission of the FY 2015 PB and the associated Future Years Defense Program, and sequestration impacts, DDG 1000 does not satisfy the certification requirement for the waived provisions. The shortfall is being addressed within the Navy, and the Department will continue to review the DDG 1000 program at least annually until the certification components are satisfied.

Though occurring after December 31, 2013, it is important to note that the National Defense Authorization Act language for FY 2014 included the following provision related to the DDG 1000 program:

“….As part of the kind in settlement of A–12 aircraft litigation, and not withstanding any other provision of law, during fiscal year 2014 and any subsequent fiscal year, the Secretary of the Navy is authorized to accept and retain the following consideration in lieu of a monetary payment for purposes of the settlement of A–12 aircraft litigation arising from the default termination of Contract No. N00019-88-C-0050: from General Dynamics Corporation, credit in an amount not to exceed $198,000,000 toward the design, construction, and delivery of the steel deckhouse, hangar, and aft missile launching system for the DDG 1002….”

The consideration referenced within the FY 2014 National Defense Authorization Act language was planned and executed in the DDG 1002 contract with BIW, a General Dynamics Company, and is within the program’s FY 2015 PB controls.

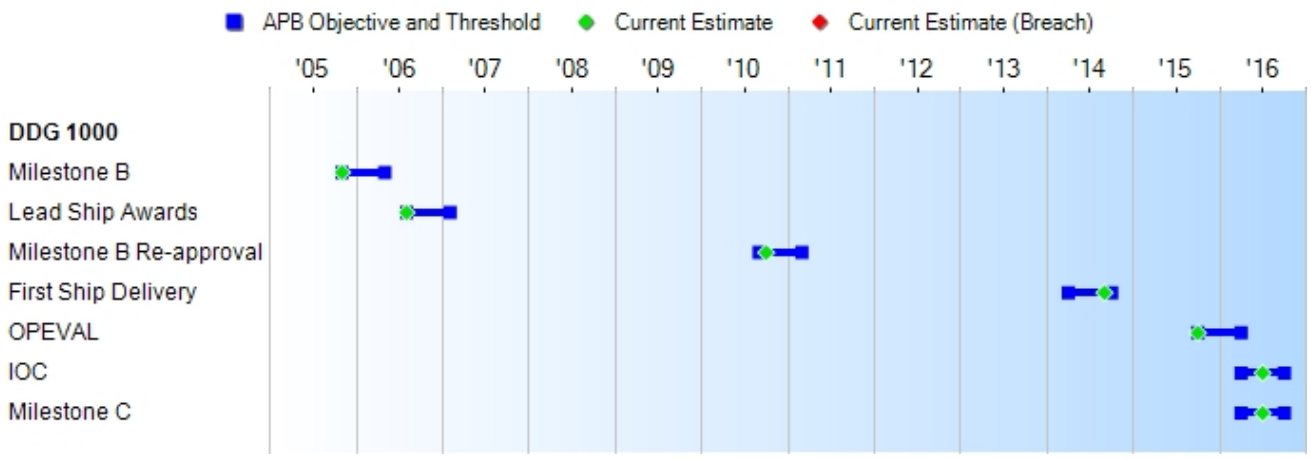
There are no significant software-related issues with this program at this time. The program is closely managing integration of MSE schedule to complete and test and activation. The software development is more than 95% complete and is under contract.

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

Schedule



Milestones	SAR Baseline Dev Est	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	SEP 2014
OPEVAL	SEP 2013	OCT 2015	APR 2016	OCT 2015
IOC	JAN 2014	APR 2016	OCT 2016	JUL 2016
Milestone C	MAR 2015	APR 2016	OCT 2016	JUL 2016

Change Explanations

None

Memo

First Ship Delivery marks completion of DDG 1000 construction at point of pre-mission system activation. An initial Inspection and Survey Trial has been performed targeting hull, electrical and mechanical.

Navy is in the process of assessing the delivery date in view of First of Class issues impacting test and activation events. In conjunction, Bath Iron Works is preparing a schedule update for review in Quarters 2-3 FY 2014 to address cost effective ship delivery approaches.

Acronyms and Abbreviations

OPEVAL - Operational Evaluation

Performance

Characteristics	SAR Baseline Dev Est	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	148
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	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	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	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

	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.	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.	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.		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 Source

DDX Operational Requirements Document (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
ORD - Operational Requirements Document
Rev - Revision
SIAP - Single Integrated Air Picture
TEMP - Test and Evaluation Master Plan

Track to Budget

RDT&E

Appn		BA	PE		
Navy	1319	05	0204202N		
	Project		**Name**		
	2464		DDG 1000 System Design, Development and Integration		
	4009		Advanced Gun System on DDG 1000		(Sunk)
Navy	1319	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)
Navy	1319	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)
Navy	1319	05	0604366N		
	Project		**Name**		
	0439		Standard Missile Improvement: DDG 1000	(Shared)	(Sunk)
Navy	1319	05	0604755N		
	Project		**Name**		
	2735		Volume Search Radar		(Sunk)

The congressional adds in PE 0603513N and PE 0604300N are not part of the core DDG 1000 Program.

Procurement

Appn	BA	PE

Navy	1611	02	0204228N		
	Line Item		**Name**		
	211900		DDG 1000 FY05-FY07	(Shared)	(Sunk)
	Notes:		FY05-07		
Navy	1611	02	0204222N		
	Line Item		**Name**		
	211900		DDG 1000 FY08-FY09		(Sunk)
	Notes:		FY08-09		
Navy	1611	02	0204202N		
	Line Item		**Name**		
	211900		DDG 1000 Construction FY10 and follow		
	Notes:		FY10 and follow		
Navy	1611	05	0204222N		
	Line Item		**Name**		
	511000		Outfitting/Post Delivery	(Shared)	
	530000		Destroyers - Missile		(Sunk)

Cost and Funding

Cost Summary

Total Acquisition Cost and Quantity

	BY2005 $M			BY2005 $M	TY $M		
Appropriation	SAR Baseline Dev Est	Current APB Development Objective/Threshold		Current Estimate	SAR Baseline Dev Est	Current APB Development Objective	Current Estimate
RDT&E	8313.2	8994.0	9893.4	8789.8	8483.0	9325.5	9113.3
Procurement	23234.7	10195.3	11214.8	9851.1	27813.3	12497.8	12545.9
Flyaway	--	--	--	9851.1	--	--	12545.9
Recurring	--	--	--	8283.1	--	--	10727.3
Non Recurring	--	--	--	1568.0	--	--	1818.6
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	18640.9	36296.3	21823.3	21659.2

Confidence Level for Current APB Cost 50% -

The Independent Cost Estimate (ICE) to support DDG 1000 revised Milestone B decision, like all life-cycle cost estimates previously performed by the Cost Assessment and Program Evaluation (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 Major Defense Acquisition Programs (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.

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

Cost and Funding

Funding Summary

Appropriation and Quantity Summary
FY2015 President's Budget / December 2013 SAR (TY$ M)

Appropriation	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	To Complete	Total
RDT&E	8586.7	187.9	202.5	129.0	7.2	0.0	0.0	0.0	9113.3
Procurement	11077.6	265.8	499.3	292.6	208.8	7.3	46.0	148.5	12545.9
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 2015 Total	19664.3	453.7	701.8	421.6	216.0	7.3	46.0	148.5	21659.2
PB 2014 Total	19671.0	468.0	582.0	194.9	138.4	63.8	45.3	50.8	21214.2
Delta	-6.7	-14.3	119.8	226.7	77.6	-56.5	0.7	97.7	445.0

Quantity	Undistributed	Prior	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	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 2015 Total	0	3	0	0	0	0	0	0	0	3
PB 2014 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 TY$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
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	--	--	--	--	--	--	348.8
2012	--	--	--	--	--	--	249.8
2013	--	--	--	--	--	--	120.8
2014	--	--	--	--	--	--	187.9
2015	--	--	--	--	--	--	202.5
2016	--	--	--	--	--	--	129.0
2017	--	--	--	--	--	--	7.2
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**9113.3**

Annual Funding BY$
1319 | RDT&E | Research, Development, Test, and Evaluation, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2005 $M	Non End Item Recurring Flyaway BY 2005 $M	Non Recurring Flyaway BY 2005 $M	Total Flyaway BY 2005 $M	Total Support BY 2005 $M	Total Program BY 2005 $M
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	--	--	--	--	--	--	302.3
2012	--	--	--	--	--	--	212.8
2013	--	--	--	--	--	--	101.3
2014	--	--	--	--	--	--	154.9
2015	--	--	--	--	--	--	163.9
2016	--	--	--	--	--	--	102.4
2017	--	--	--	--	--	--	5.6
Subtotal	**--**	**--**	**--**	**--**	**--**	**--**	**8789.8**

Annual Funding TY$
1611 | Procurement | Shipbuilding and Conversion, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway TY $M	Non End Item Recurring Flyaway TY $M	Non Recurring Flyaway TY $M	Total Flyaway TY $M	Total Support TY $M	Total Program TY $M
2005	--	--	--	304.0	304.0	--	304.0
2006	--	--	--	706.2	706.2	--	706.2
2007	2	1779.2	--	808.4	2587.6	--	2587.6
2008	--	3159.8	--	--	3159.8	--	3159.8
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	--	677.5	--	--	677.5	--	677.5
2014	--	265.8	--	--	265.8	--	265.8
2015	--	499.3	--	--	499.3	--	499.3
2016	--	292.6	--	--	292.6	--	292.6
2017	--	208.8	--	--	208.8	--	208.8
2018	--	7.3	--	--	7.3	--	7.3
2019	--	46.0	--	--	46.0	--	46.0
2020	--	--	--	--	--	--	--
2021	--	--	--	--	--	--	--
2022	--	148.5	--	--	148.5	--	148.5
Subtotal	**3**	**10727.3**	**--**	**1818.6**	**12545.9**	**--**	**12545.9**

Annual Funding BY$
1611 | Procurement | Shipbuilding and Conversion, Navy

Fiscal Year	Quantity	End Item Recurring Flyaway BY 2005 $M	Non End Item Recurring Flyaway BY 2005 $M	Non Recurring Flyaway BY 2005 $M	Total Flyaway BY 2005 $M	Total Support BY 2005 $M	Total Program BY 2005 $M
2005	--	--	--	275.1	275.1	--	275.1
2006	--	--	--	617.3	617.3	--	617.3
2007	2	1486.8	--	675.6	2162.4	--	2162.4
2008	--	2554.6	--	--	2554.6	--	2554.6
2009	1	1181.1	--	--	1181.1	--	1181.1
2010	--	1047.2	--	--	1047.2	--	1047.2
2011	--	182.1	--	--	182.1	--	182.1
2012	--	370.1	--	--	370.1	--	370.1
2013	--	480.4	--	--	480.4	--	480.4
2014	--	185.0	--	--	185.0	--	185.0
2015	--	340.9	--	--	340.9	--	340.9
2016	--	195.9	--	--	195.9	--	195.9
2017	--	137.0	--	--	137.0	--	137.0
2018	--	4.7	--	--	4.7	--	4.7
2019	--	29.0	--	--	29.0	--	29.0
2020	--	--	--	--	--	--	--
2021	--	--	--	--	--	--	--
2022	--	88.3	--	--	88.3	--	88.3
Subtotal	**3**	**8283.1**	**--**	**1568.0**	**9851.1**	**--**	**9851.1**

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	5966.4
2008	--	--
2009	1	2316.7
2010	--	--
2011	--	--
2012	--	--
2013	--	--
2014	--	--
2015	--	--
2016	--	--
2017	--	--
2018	--	--
2019	--	--
2020	--	--
2021	--	--
2022	--	--
Subtotal	**3**	**8283.1**

Low Rate Initial Production

	Initial LRIP Decision	Current Total LRIP
Approval Date	11/22/2005	10/8/2010
Approved Quantity	8	3
Reference	ADM	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 Acquisition Decision Memorandum (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

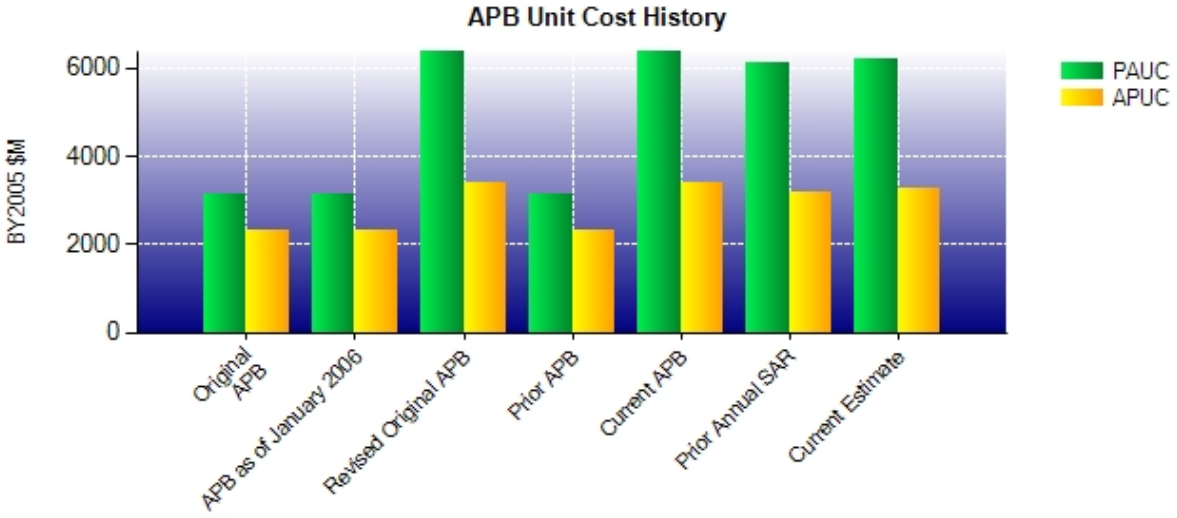
Unit Cost

Unit Cost Report

Unit Cost	BY2005 $M Current UCR Baseline (MAR 2011 APB)	BY2005 $M Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	19189.3	18640.9	
Quantity	3	3	
Unit Cost	6396.433	6213.633	-2.86
Average Procurement Unit Cost (APUC)			
Cost	10195.3	9851.1	
Quantity	3	3	
Unit Cost	3398.433	3283.700	-3.38

Unit Cost	BY2005 $M Revised Original UCR Baseline (MAR 2011 APB)	BY2005 $M Current Estimate (DEC 2013 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	19189.3	18640.9	
Quantity	3	3	
Unit Cost	6396.433	6213.633	-2.86
Average Procurement Unit Cost (APUC)			
Cost	10195.3	9851.1	
Quantity	3	3	
Unit Cost	3398.433	3283.700	-3.38

Unit Cost History



		BY2005 $M		TY $M	
	Date	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 2012	6118.833	3172.500	7071.400	4009.133
Current Estimate	DEC 2013	6213.633	3283.700	7219.733	4181.967

SAR Unit Cost History

Current SAR Baseline to Current Estimate (TY $M)

Initial PAUC Dev Est	Changes								PAUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
3629.630	604.033	2104.837	19.233	22.067	839.933	0.000	0.000	3590.103	7219.733

Current SAR Baseline to Current Estimate (TY $M)

Initial APUC Dev Est	Changes								APUC Current Est
	Econ	Qty	Sch	Eng	Est	Oth	Spt	Total	
2781.330	598.300	125.471	19.233	-126.500	784.133	0.000	0.000	1400.637	4181.967

SAR Baseline History

Item/Event	SAR Planning Estimate (PE)	SAR Development Estimate (DE)	SAR Production Estimate (PdE)	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	JUL 2016
IOC	JAN 2014	JAN 2014	N/A	JUL 2016
Total Cost (TY $M)	36296.2	36296.3	N/A	21659.2
Total Quantity	10	10	N/A	3
Prog. Acq. Unit Cost (PAUC)	3629.620	3629.630	N/A	7219.733

Cost Variance

Summary Then Year $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	8483.0	27813.3	--	36296.3
Previous Changes				
Economic	+25.7	+1789.0	--	+1814.7
Quantity	--	-19092.9	--	-19092.9
Schedule	--	+57.7	--	+57.7
Engineering	+445.7	-379.5	--	+66.2
Estimating	+232.4	+1839.8	--	+2072.2
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+703.8	-15785.9	--	-15082.1
Current Changes				
Economic	-8.5	+5.9	--	-2.6
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-65.0	+512.6	--	+447.6
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-73.5	+518.5	--	+445.0
Total Changes	+630.3	-15267.4	--	-14637.1
CE - Cost Variance	9113.3	12545.9	--	21659.2
CE - Cost & Funding	9113.3	12545.9	--	21659.2

Summary Base Year 2005 $M				
	RDT&E	Proc	MILCON	Total
SAR Baseline (Dev Est)	8313.2	23234.7	--	31547.9
Previous Changes				
Economic	--	--	--	--
Quantity	--	-14646.0	--	-14646.0
Schedule	--	+63.8	--	+63.8
Engineering	+385.3	-369.4	--	+15.9
Estimating	+140.5	+1234.4	--	+1374.9
Other	--	--	--	--
Support	--	--	--	--
Subtotal	+525.8	-13717.2	--	-13191.4
Current Changes				
Economic	--	--	--	--
Quantity	--	--	--	--
Schedule	--	--	--	--
Engineering	--	--	--	--
Estimating	-49.2	+333.6	--	+284.4
Other	--	--	--	--
Support	--	--	--	--
Subtotal	-49.2	+333.6	--	+284.4
Total Changes	+476.6	-13383.6	--	-12907.0
CE - Cost Variance	8789.8	9851.1	--	18640.9
CE - Cost & Funding	8789.8	9851.1	--	18640.9

Previous Estimate: December 2012

RDT&E	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	-8.5
Adjustment for current and prior escalation. (Estimating)	+3.9	+4.7
Revised cost estimate to better align Test and Evaluation Master Plan activities, and reflect Contractor Support Services reductions across the Future Year Defense Program (FYDP). (Estimating)	-53.1	-69.7
RDT&E Subtotal	-49.2	-73.5

Procurement	$M	
Current Change Explanations	**Base Year**	**Then Year**
Revised escalation indices. (Economic)	N/A	+5.9
Adjustment for current and prior escalation. (Estimating)	-3.7	-4.8
Revised cost estimate to properly price and fund prior shipbuilding program within the FYDP. (Estimating)	+339.3	+520.2
Revised cost estimate for efficiency in execution. (Estimating)	-2.0	-2.8
Procurement Subtotal	+333.6	+518.5

Contracts

Appropriation: Procurement	
Contract Name	**Phase IV BIW DD&C (DDG 1000)**
Contractor	Bath Iron Works
Contractor Location	700 Washington Street Bath, ME 04530-2574
Contract Number, Type	N00024-06-C-2303, CPAF/CPIF/CPFF
Award Date	August 08, 2006
Definitization Date	September 08, 2006

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price at Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
373.5	N/A	1	2036.4	N/A	1	2696.3	2591.8

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the addition of transition to production and exercise of the ship construction Contract Line (CLIN) Item and the deobligation for Class Common Equipment (CCE) for DDG 1001.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/26/2014)	-189.2	-63.6
Previous Cumulative Variances	-145.9	-46.5
Net Change	-43.3	-17.1

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to Bath Iron Works (BIW) experiencing challenges in electrical work as the lead ship progresses to ship activation; this has been and remains a top concern. PMS 500 has not yet seen the anticipated improvement in the overall performance trend from the implementation of additional electrical scope risk mitigation measures, utilizing the lessons learned from the activation activities at the Land Based Test Site, and additional Navy controls over design changes. The DDG 1000 program will continue to hold on-site Engineering Review Boards (ERBs) to control and prioritize change as DDG 1000 construction progresses. BIW is preparing a schedule update for review in Quarters 2-3 FY 2014 to address cost effective ship delivery approaches. PMS 500 will review and update Navy Estimates at Completion if necessary.

The unfavorable net change in the schedule variance is due to mostly electrical work performance on CLIN0003 (Construction). BIW completed DDG 1000 Float-off on October 28, 2013 which allowed more schedule for Ships Completion and Test and Activation scope to be completed at the Land Level Transfer Facility, where work has proven to be more efficient than during the water stage of construction. Schedule variance will continue to be monitored closely.

Contract Comments

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

BIW's DDG 1000 contract scope previously included long lead time material and advanced procurement efforts for DDG 1001. The BIW DDG 1001/1002 contract was awarded September 15, 2011. Therefore, the DDG 1000 contract now includes only the detail design and construction of the DDG 1000 lead ship.

Appropriation: Procurement	
Contract Name	**Phase IV HIIDD&C (DDG 1000 / 1001)**
Contractor	Huntington Ingalls Inc
Contractor Location	1000 Access Road Pascagoula, MS 39568-7003
Contract Number, Type	N00024-06-C-2304, CPAF/CPIF/CPFF
Award Date	August 31, 2006
Definitization Date	August 31, 2006

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price at Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
364.0	N/A	1	1263.2	N/A	2	1649.7	1594.2

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the addition of transition to production and exercise of the ship construction CLIN, the deobligation of Class Common Equipment for DDG 1001, and the partial termination of construction of the DDG 1001.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/19/2014)	-109.9	-27.1
Previous Cumulative Variances	-94.0	-43.5
Net Change	-15.9	+16.4

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to composite material rework occurring as skilled staff transition ahead of the facility closure. The program office is closely monitoring the status as final product delivery approaches this year.

The favorable net change in the schedule variance is due to the DDG 1001 Hangar and Deckhouse nearing completion in the earned value Performance Measurement Baseline (PMB). The program office is closely tracking Huntington Ingalls Industries' (HII) ability to meet their committed product delivery dates.

Contract Comments

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

In April 2009, the Navy, Bath Iron Works, and Northrop Grumman Shipbuilding (now HII), signed Memorandums of Agreements regarding the allocation of ship construction workload for DDG 1000 and DDG 51 Class ships. The current scope of the HII contract is for the detail design and construction of the DDG 1000 and 1001 Deckhouse and Aft Peripheral Vertical Launch System.

Appropriation: Procurement	
Contract Name	**Phase IV BIW (DDG 1001 & 1002)**
Contractor	Bath Iron Works
Contractor Location	700 Washington Street Bath, ME 04530
Contract Number, Type	N00024-11-C-2306, FPIS/FPIF/FFP/CR
Award Date	September 15, 2011
Definitization Date	May 15, 2011

Initial Contract Price ($M)			Current Contract Price ($M)			Estimated Price at Completion ($M)	
Target	Ceiling	Qty	Target	Ceiling	Qty	Contractor	Program Manager
1825.7	N/A	2	1582.2	N/A	2	1891.9	1712.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to reflecting Contract Performance Report scope; this excludes the values of the Firm Fixed Price Class Common Equipment. The Current Contract Price Target does reflect the modification for the design and construction of a steel deckhouse, hangar, and Aft Peripheral Vertical Launch System (PVLS) for DDG 1002 on August 2, 2013.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/26/2014)	-76.9	-116.9
Previous Cumulative Variances	-37.2	-47.7
Net Change	-39.7	-69.2

Cost and Schedule Variance Explanations

The unfavorable net change in the cost variance is due to variances related to redetermination areas, including material and engineering support, as well as performance. 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, 2013, the program has processed modifications for $24.2M of scope reductions and will continue to identify CRCs.

The unfavorable net change in the schedule variance is due to production schedule changes incorporated as part of the DDG 1002 deckhouse, hangar, and AFT PVLS award to Bath Iron Works (BIW). The DDG 1001 and 1002 are being rescheduled for delivery five (5) and ten (10) months later than the current EVM reporting period represents.

Contract Comments

BIW's DDG 1001 contract scope for long lead time material and advanced procurement efforts were initiated and previously captured and reported under contract N00024-06-C-2303. The BIW DDG 1001/1002 contract was awarded September 15, 2011 as a Fixed-Price Incentive Successive Targets contract. The Navy awarded BIW a contract modification for the design and construction of a steel deckhouse, hangar, and Aft PVLS for DDG 1002 on August 2, 2013. The Program Office conducted an Integrated Baseline Review (IBR) the week of December 16, 2013.

Appropriation: Procurement	
Contract Name	**Phase IV AGS Equipment (DDG 1002)**
Contractor	BAE Systems
Contractor Location	4800 E. River Rd Minneapolis, MN 55421
Contract Number, Type	N00024-12-C-5311, FPIF/CPFF
Award Date	October 26, 2011
Definitization Date	November 19, 2012

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	164.8	N/A	2	165.1	168.0

Target Price Change Explanation

The difference between the Initial Contract Price Target and the Current Contract Price Target is due to the exercise of the FY 2012 and FY 2013 option, which is reflected in the current contract price of $164.8M. Estimated Price at Completion has increased to $168.0M due to inclusion of the FY 2013 and FY 2014 option years.

Variance	Cost Variance	Schedule Variance
Cumulative Variances To Date (1/31/2014)	-0.3	+14.9
Previous Cumulative Variances	0.0	0.0
Net Change	-0.3	+14.9

Cost and Schedule Variance Explanations

The unfavorable cumulative cost variance is due to efficient use of resources, reducing effort required to support welding and machining activity.

The favorable cumulative schedule variance is due to early receipt of materials.

Contract Comments

The Navy awarded the Advanced Gun System (AGS) for DDG 1002 to British Aerospace Engineering (BAE) on October 26, 2011 as an Undefinitized Contract Action (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 PMB for the DDG 1002 effort, and conducted an IBR 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.

Deliveries and Expenditures

Delivered to Date	Plan 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	21659.2	Years Appropriated	20
Expended to Date	18052.6	Percent Years Appropriated	71.43%
Percent Expended	83.35%	Appropriated to Date	20118.0
Total Funding Years	28	Percent Appropriated	92.88%

The above data is current as of 3/18/2014.

Operating and Support Cost

DDG 1000

Assumptions and Ground Rules

Cost Estimate Reference:
O&S cost estimates are based on the Navy 2011 revised Milestone B DDG 1000 Navy Program Life Cycle Cost Estimate. Costs are shown in BY 2005 dollars. The O&S costs are provided in revised cost elements based on the Cost Assessment and Program Evaluation, October 2007 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. The estimate is based on an average unit cost of three ships with an average 35 year service life.

Antecedent Information:
There is no antecedent system for DDG 1000.

Unitized O&S Costs BY2005 $M		
Cost Element	**DDG 1000 Avg. Annual Cost per ship**	**No Antecedent (Antecedent)**
Unit-Level Manpower	10.235	0.000
Unit Operations	8.378	0.000
Maintenance	19.446	0.000
Sustaining Support	1.803	0.000
Continuing System Improvements	11.436	0.000
Indirect Support	3.372	0.000
Other	0.000	0.000
Total	54.670	--

Unitized Cost Comments:
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 = 54.670 * 3 * 35 = 5740.35.

	Total O&S Cost $M			
	Current Development APB Objective/Threshold		Current Estimate	
	DDG 1000		DDG 1000	No Antecedent (Antecedent)
Base Year	7744.4	8518.8	5740.3	N/A
Then Year	15245.3	N/A	11187.7	N/A

Total O&S Costs Comments:
None.

Disposal Costs:

Disposal costs for DDG 1000 are $36.08M (BY 2005) for the three ships.