BALLISTIC MISSILE DEFENSE SYSTEM (BMDS) ACCOUNTABILITY REPORT (BAR) for 2012

The Missile Defense Agency (MDA) presents the 2012 BMDS Accountability Report (BAR) to Congress to enhance the transparency, accountability, and oversight of the BMDS program.

(b)(6)

Lieutenant General, USA
Director

4 Feb '12
DATE

Missile Defense Agency

Ballistic Missile Defense System (BMDS) Accountability Report (BAR) For 2012

February 15, 2012

This document contains information exempt from mandatory disclosure under the Freedom of Information Act.
[5 U.S.C. 552(b)(3) and (5) apply.]

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1.0 Introduction

In its annual BMDS Accountability Report (BAR), the Missile Defense Agency (MDA) presents baseline parameters used to guide and track development of ballistic missile defense capabilities. Unless noted, information in this report is through January 27, 2012. This report presents program baselines for BMDS component elements in MDA's Product Development and Initial Production acquisition lifecycle phases. The BAR also presents resource, schedule, and technical variances from the previously reported baselines. This report is in response to Sections 231 and 232 of the National Defense Authorization Act (NDAA) for fiscal year (FY) 2012, Public Law (P.L.) 112-81.

This 2012 BAR updates baselines for MDA component element programs from the 2011 BAR. The 2012 BAR also incorporates suggestions provided by the Government Accountability Office (GAO) to include: 1) addition of information to explain the major changes experienced by each program over the past year; 2) addition of a buy/delivery information for each program that has advanced to Product Development or Initial Production; 3) a description of cost items not included in program Resource Baselines; and 4) a description of confidence levels for cost estimates. In addition, Appendix A includes Earned Value Management (EVM) data for the BMDS component element programs to show trends in cost and schedule performance on current work under contract.

BMDS component element haselines are aligned with the President's Budget (PB) submission for FY 2013 (PB13). PB13 directed budget reductions to the BMDS across the Future Years Defense Program (FYDP) of approximately $3.9 billion. This reduction, as well as the Continuing Resolution during FY 2011 and through the second quarter of FY 2012, impacted MDA's ability to execute program plans and drove changes to some BMDS program content and schedule. Changes also occurred in BMDS component element programs expected to establish baselines in 2011. For example, in the 2011 BAR, MDA reported intent to establish baselines for Ground-based Missile Defense (GMD) Enhanced Homeland Defense; Terminal High Altitude Area Defense (THAAD) 2.0; AN/TPY-2 Increment 2.0; and Upgraded Early Warning Radar (UEWR) Increment 2.0; and Command and Control, Battle Management and Communications (C2BMC) Spiral 8.2, and report them in the 2012 BAR. However, because of the reductions and associated delays, MDA deferred establishing these program baselines to FY 2012 with first baseline reporting anticipated in the 2013 BAR. This BAR presents the content and schedule program impacts to current BMDS component element programs in the MDA Product Development phase and Initial Production phase.

MDA is working with the operational test and evaluation community to update the Test baselines and produce the Integrated Master Test Plan (IMTP) version 12.1. The component element program test baselines are reflected in the IMTP and therefore are not delivered in this BAR. Due to the impacts of the FY 2012 appropriations in late December 2011, MDA will release of the updated IMTP in early March 2012.

In addition to the required reporting of BMDS component element program baselines in Product Development or Initial Production, this BAR continues to include updated program plans for Precision Tracking Space System (PTSS) and Standard Missile (SM)-3 Block IIB.

These programs are critical to the future of the BMDS and have widespread external interest. PTSS is currently in MDA's Materiel Solution Analysis acquisition lifecycle phase and SM-3 IIB recently transitioned into the Technology Development phase.

MDA is developing a flexible target family with the ability to interchange Re-Entry Vehicles across Medium Range Ballistic Missile (MRBM), Intermediate Range Ballistic Missile (IRBM), and Intercontinental Ballistic Missile (ICBM) target classes. This strategy allows MDA to emulate a wide range of threat capabilities with fewer unique target configurations. In order to accomplish this, MDA has realigned the BMDS targets' portfolio by parsing common components from the Short Range Ballistic Missile (SRBM), MRBM, and IRBM programs. This new Targets Common Components program provides additional insight of cost, schedule, and acquisition strategy for reentry vehicles and associated objects. MDA conducted development baseline reviews for the new and revised programs and approved the baselines in February 2012. Also, MDA will revise the acquisition strategy (b)(3):10 USC §130,(b)(5)

(b)(3):10 USC §130,(b)(5)

The 2012 BAR improves management visibility and insight into the Aegis BMD 5.0 program. The updated Aegis BMD 5.0 baselines consolidate activity required to adapt the Aegis BMD combat system computer programs to operate on land (i.e., support the Aegis Ashore program) and to expand system capability to support BMDS responses to evolving threat operational characteristics and raid sizes. These upgrades are identified as Aegis BMDS 5.0 Capability Upgrade (CU) in this report.

The 2012 BAR also improves management visibility and insight into the Aegis Ashore program. The expanded Aegis Ashore baselines include planned BMDS program content such as: site activation, military construction, site-specific systems engineering, and non-tactical communications. These contributions to Aegis Ashore are managed outside the Aegis Ashore Program Office, but are necessary to successfully complete the baseline.

The BMDS Sea-Based X-band radar (SBX) program completed development and production and is now in operations and sustainment. Furthermore, MDA completed transfer of the SBX capability to the Navy on December 21, 2011 so SBX is no longer reported in BAR.

Several BMDS component element programs transitioned to a new acquisition lifecycle phase or rebaselined within their current phase. The decision memorandums approving the corresponding new baselines are included in Section 6.0. These programs are:

- THAAD Increment 1.0 entered Initial Production (Batteries 3, 4, and 5) with the December 2010 USD(AT&L) Acquisition Decision Memorandum (ADM) thereby establishing new program baselines for the Initial Production Phase.

- AN/TPY-2 Increment 1.0 entered Initial Production (radars 9 and 10) in concert with THAAD.

- Aegis SM-3 Block IB, and Aegis Weapon System (AWS) 4.0.1 reestablished program baselines with the June 2011 MDA Director Development Decision Memorandum (DDM). The MDA Director and the Assistant Secretary of the Navy (ASN) (Research, Development & Acquisition (RDA)) directed the program baselines to be updated to address baseline changes caused by the design modification of the Throttleable Divert and Attitude Control System (TDACS) to meet service life requirements.

MDA updated the strategy for delivering capability to the Warfighter. This change has not altered the content of the BMDS program baselines, but does provide capability to the Warfighter sooner. Previously, MDA's strategy was to align BMDS development to BMDS "Capability Deliveries." These Capability Deliveries occurred in 2-3 year increments and included the hardware and software systems projected for delivery inside that window. Since the 2011 BAR, MDA has migrated to a more rapid incremental delivery strategy. Under this strategy, MDA delivers capability to the Warfighter as it is ready; making the delivery increments smaller and more frequent. Baselines are no longer tied to a single BMDS Capability Delivery; they are now aligned with multiple incremental deliveries. As a result this report shows new nomenclature for the AN/TPY-2 and GMD baselined program increments, but program content did not change except as specifically indicated.

2.0 Definitions of Baselines

MDA's baselines are expected outcomes that serve as parameters to guide development of ballistic missile defense capabilities. Their implementation enhances the Agency's transparency, accountability, and oversight. The six BMDS program baselines are:

- The *schedule baseline* is a timeline for key product development milestones and tasks, such as key decision points and product deliveries.
- The *technical baseline* is an engineering management tool used by MDA to control the technical aspects of BMDS product development. Each product baseline is comprised of a listing of capability needs derived from the Warfighters' Prioritized Capabilities List (PCL)[1], enduring capabilities, current and future capabilities, and knowledge points. Together these elements form a product functionality trace and define the way points the program must achieve to proceed successfully through development.
- The *test baseline* is a schedule of major flight and ground tests, key modeling and simulation events, and the primary goals associated with those tests and events[2].

[1] The United States Strategic Command (USSTRATCOM) published the Air and Missile Defense PCL for Program Objective Memorandum (POM) FY 2014 on October 11, 2011 (known as the 2011 PCL) which provides additional Warfighter priorities to the 2009 PCL. The 2012 BAR provides Technical Baselines which trace capability requirements to both the 2009 and 2011 PCL where applicable. The 2009 PCL captured "Needs" and "Enduring Capabilities", whereas the 2011 PCL identifies "Priorities" which are found in Appendix B, Table B-10 of the 2011 PCL.

[2] As noted earlier, the Test baselines are deferred to the IMTP 12.1 report to Congress.

- The *operational capacity baseline* (OCB) is an engineering management database containing the MDA-approved operational configuration of BMDS hardware and software versions fielded for Warfighter use. OCBs present information on the fielding plans, capabilities and limitations, and supporting activities for operational capability deliveries.
- The *resource baseline* is the expected investment in the delivery of a BMDS product. Resource baselines are represented as Program Acquisition Unit Cost (PAUC), Average Procurement Unit Cost (APUC), Program Acquisition Cost (PAC) and/or Average Unit Cost (AUC). (A detailed discussion of the resource baseline methodology is presented in Appendix C.)
- The *contract baseline* is a timeline for a set of MDA contracts designed to deliver integrated BMDS capabilities. The timeline highlights the steps in the contracting process from Request for Proposals through Proposal Receipt, Negotiations Complete, Contract Award, and Contract Execution.

3.0 Variance and Change Reporting

Variances are defined as deviations (expected or actual) from established BMDS schedule, technical, and resource baselines. Variances are tracked and managed because they reflect directly on how well the Agency is delivering BMDS capabilities to the Warfighter. The thresholds used to report variances in the 2012 BAR are:

- (b)(3):10 USC §130,(b)(5)
-
-

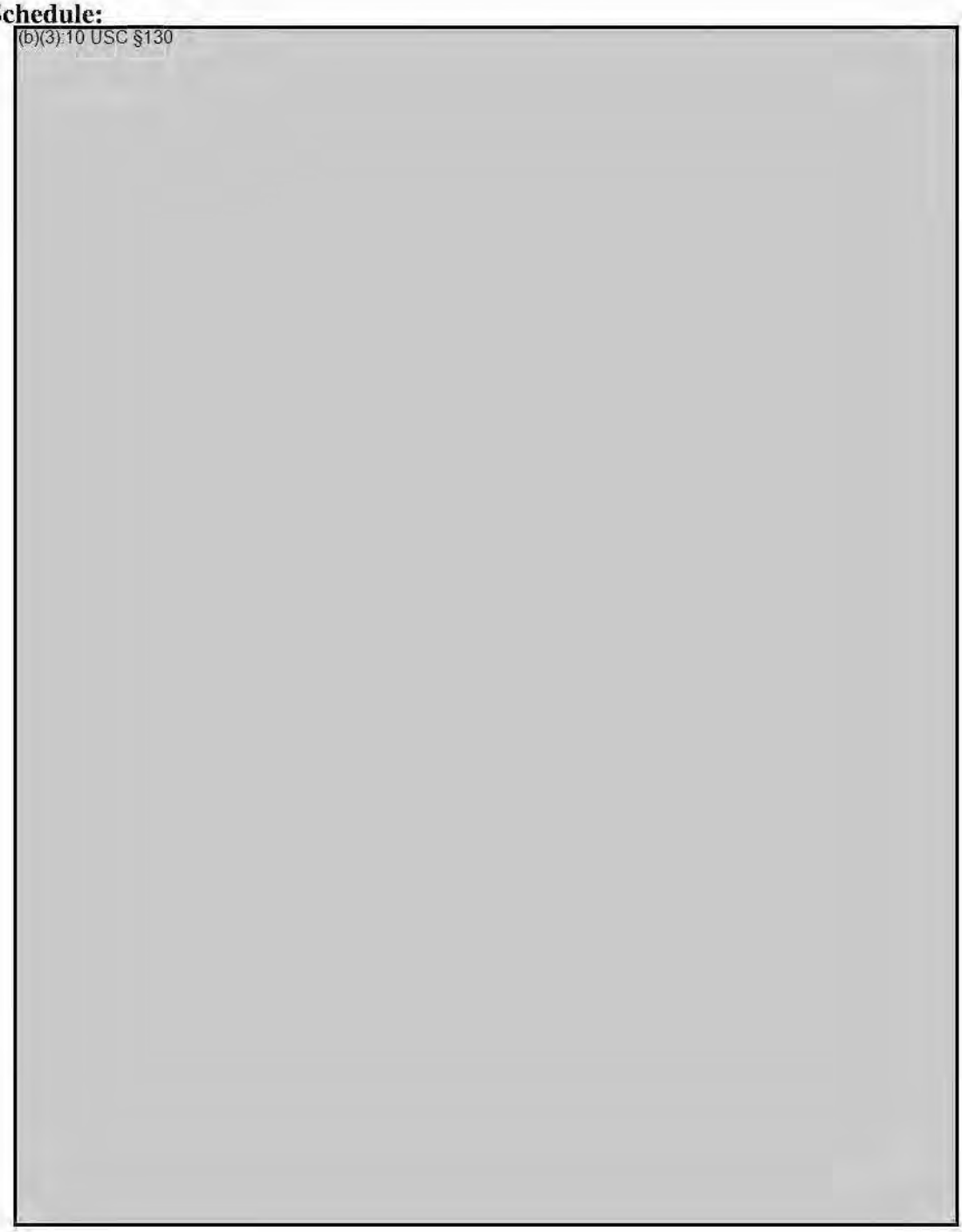
Section 4.0 of this BAR summarizes above-threshold variances from the previously reported BMDS Product Development and Initial Production component program baselines. Section 5.0 summarizes significant content changes to BMDS program baselines. Section 6.0 reports all program baselines and plans, summarizes significant changes from the previously reported baselines, and describes the resultant program impacts. Section 6.0 also compares the current Product Development and Initial Production program baselines with the previously reported baselines by showing all changes. Changes for each baseline in Section 6.0 are highlighted with a strikethrough (red line) over the changed item or event and the updated item or event entered in red and red font. Items shown in black and black font are unchanged.

4.0 Reportable Variances

Section 4.0 summarizes above-threshold variances from the previously reported BMDS Product Development and Initial Production component program baselines.

4.1 Schedule:

(b)(3):10 USC §130



5.0 Program Change Summary

Section 5.0 summarizes significant content changes to BMDS program baselines.

5.1 Resource:

6.0 Updated Baselines for BMDS Product Development (PD) Programs and selected Materiel Solntions Analysis (MSA) Acquisition Aetivity and Technology Development Programs

Section 6.0 includes the unclassified program baseline charts. Classified program baseline charts are provided in Appendix F (a separate classified annex). See Appendix D for a list of acronyms used in Section 6.0.

6.1 C2BMC Spiral 6.4

C2BMC Spiral 6.4

(b)(3):10 USC §130,(b)(5)

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C2BMC Spiral 6.4

(b)(3):10 USC §130,(b)(5)

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C2BMC Spiral 6.4

See Classified Appendix F

C2BMC Spiral 6.4

(b)(3):10 USC §130,(b)(5)

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C2BMC Spiral 6.4

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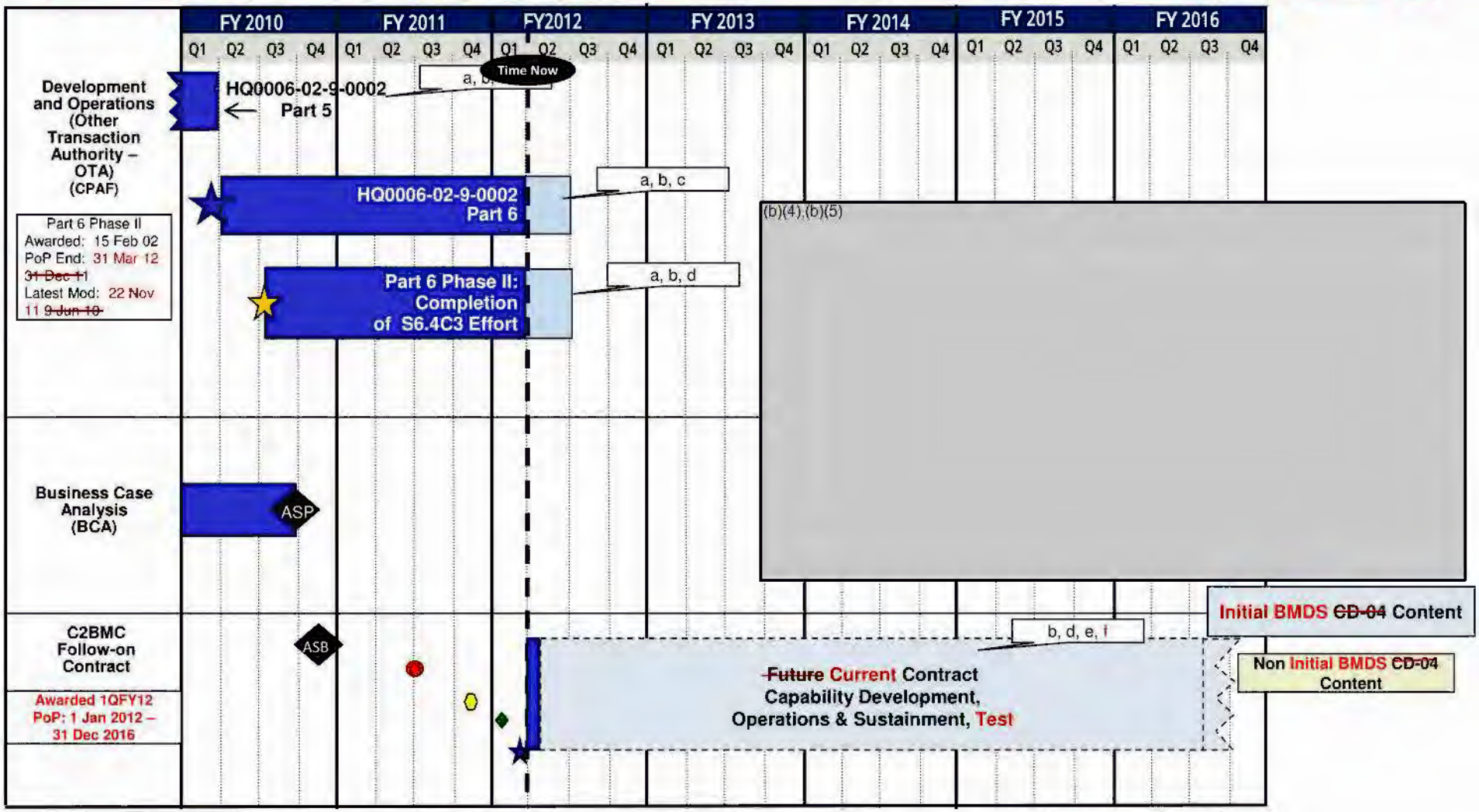
C2BMC Spiral 6.4

2012 BMDS Accountability Report (BAR) — Contract Baseline



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6.2.1 THAAD 1.0

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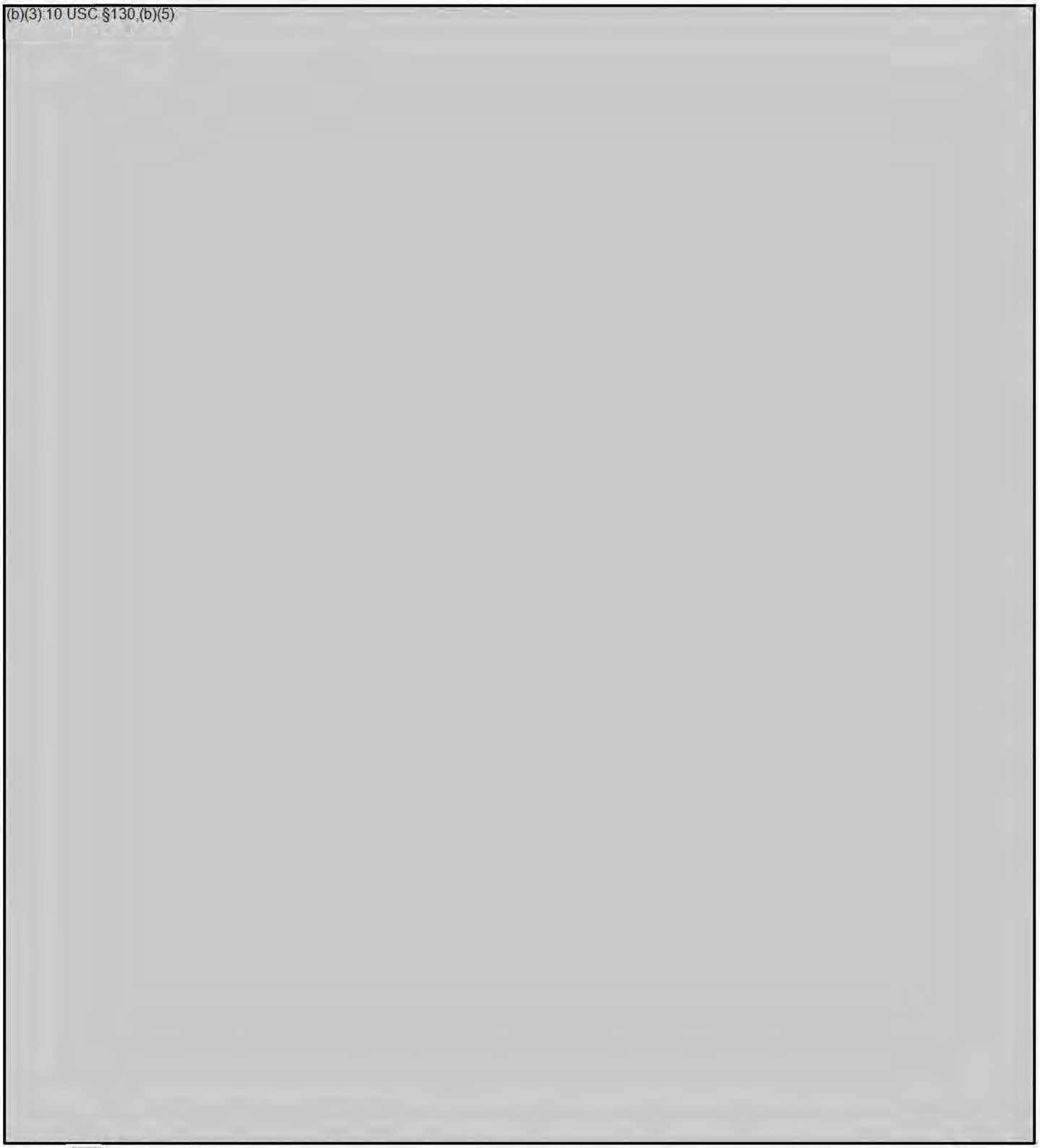

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Attachment:
As stated

THAAD Element Criteria for Full Production (U)

-1QFY13-

	Exit Criteria	Baseline
1	**Verified Requirement**	
1a	THAAD System Specification Rev V. traced to BMD System Specification Build C	Technical
1b	Approved Capability Production Document	Technical
2	**Design is stable**	
2a	Weapon System Production Qualification complete for all components and subassemblies	Technical
3	**Test results support confidence that the user needs will be met**	
3a	ATEC Operational Assessment Report (OAR) – Effectiveness, Suitability, and Survivability Assessment	Test
3b	Beyond Low Rate Initial Production Report (BLRIP) from the Director, Operational Test and Evaluation (DOT&E) IAW Title 10, USC (Section 2399)	Test
4	**Projected quantities are affordable**	
4a	Approved MDA/CARD	Resource
4b	Independent Cost Estimate, Completed by CAPE	Resource
4c	Full funding for Procurement and Operations and Sustainment	Resource
4d	Training Aids , Devices, Simulators, and Simulations (TADSS) Funded	Resource
5	**Manufacturing processes are in control**	
5a	No significant manufacturing risks	Technical
5b	Industrial Capabilities Assessment completed	Technical
6	**Plans for operations are in place**	
6a	Supportability Strategy coordinated w/ ARSTAFF, approved by PM (IAW AR 700-127)	Operational
6b	Materiel Fielding plan coordinated with ARSTAFF (IAW AR 700-142)	Operational
6c	Approved STRAP and Training Support Plan	Operational

THAAD 1.0

Significant Change	Impact to Baseline
Army & Ignition System Safety Review Board (ISSRB) required MDA to demonstrate production hardware configuration in ground and flight test prior to granting Materiel Release. (Met by FTT-12, Oct 2011)	**Schedule/Operational Capacity:** Requirement drove a 9 month delay in Materiel Release.
Production Lots 1 & 2 negotiation and contract award continued 6 months longer than planned.	**Schedule/Operational Capacity:** (b)(3):10 USC §130,(b)(5) (b)(3):10 **Resource:** Favorable contract negotiation resulted in reduced procurement unit cost for THAAD Fire Control & Communication (TFCC) and Launcher. **Contract:** Revised award date reflected on baseline chart.
Due to reprioritization of DoD requirements in a constrained budget environment, (b)(3):10 USC §130,(b)(5) (b)(3):10 USC	**Schedule:** (b)(3):10 USC §130,(b)(5) (b)(3):10 USC §130,(b)(5) it is not reported as a variance in BAR Section 4.
IMTP v12.1 modified flight and ground test events.	**Schedule/Technical:** MRBM Capability and Integrated Flight Testing Knowledge Point moved to (b)(3):10 USC §130,(b)(5) **Operational Capacity:** Above change did not delay deliveries to the warfighter.
(b)(3):10 USC §130,(b)(5)	**Schedule/Operational Capacity:** Reduced quantities are shown on baseline charts. Eliminated 6/month production capacity milestone. (b)(3):10 USC §130,(b)(5) Had the production rate remained constant, the unit cost change would not have exceeded the 5% threshold. Therefore the 9% increase in PAUC and APUC are not reported as variances in BAR Section 4.

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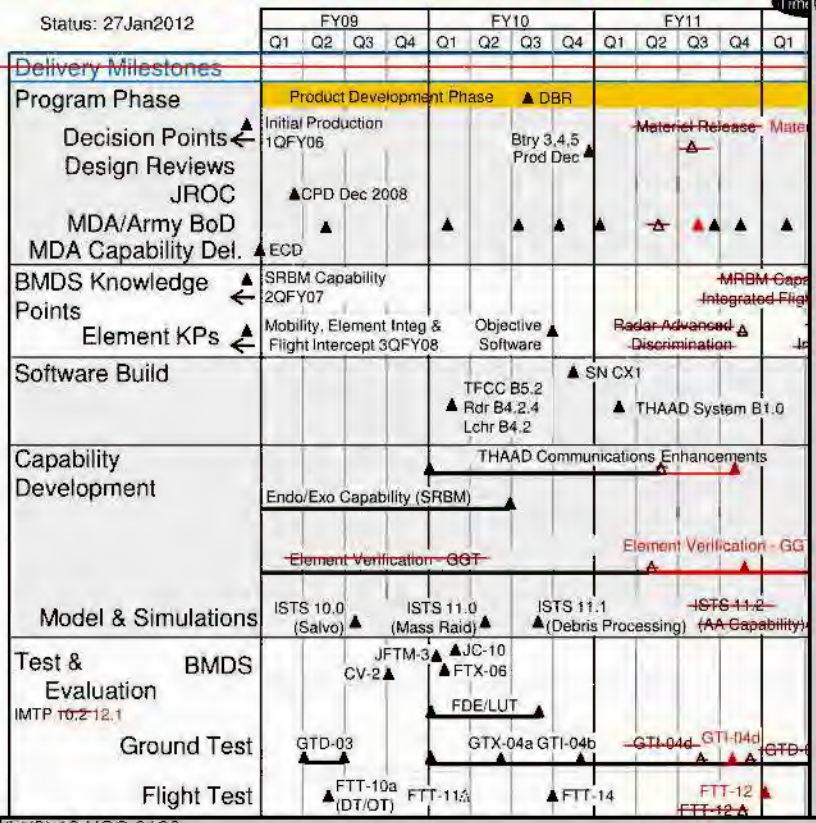
THAAD 1.0

2012 BMDS Accountability Report (BAR) — Schedule Baseline



(b)(3):10 USC §130,(b)(5)

(b)(3):10 USC §130

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THAAD 1.0

See Classified Appendix F

THAAD 1.0

See Classified Appendix F

THAAD 1.0

2012 BMDS Accountability Report (BAR) — Resource Baseline

THAAD 1.0 Time Phased Estimate (As of 27-01-2012)

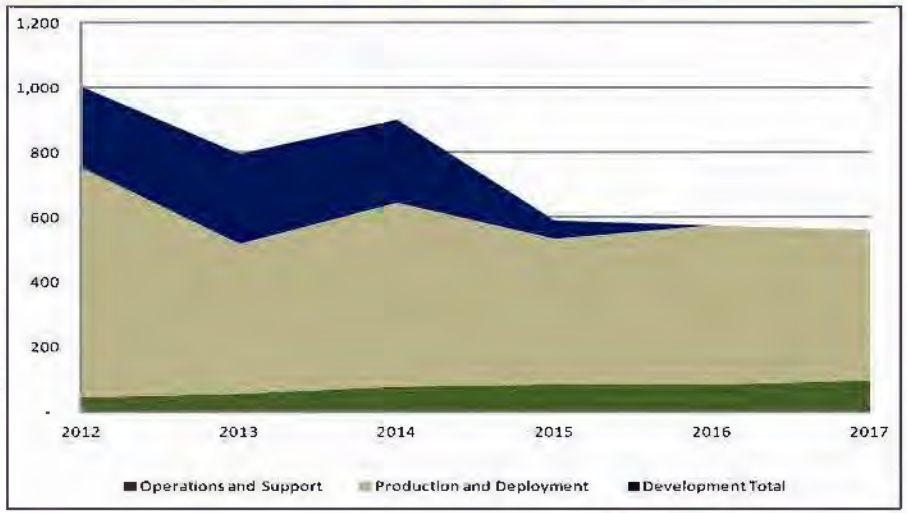
COSTS TY$M	PRIOR	2012		2013		2014		2015		2016		2017		FYDP TOTAL		TO COMPLETE		TOTAL	
		FY11 BL	FY12 BAR	FY11 BL	FY12 BAR	FY11 BL	FY12 BAR	FY11 BL	FY12 BAR	FY11 BL	FY12 BAR	FY11 BL	FY12 BAR	FY11 BL	FY12 BAR	FY11 BL	FY12 BAR	FY11 BL	FY12 BAR
Hardware Development	3,474	~~102~~	125	~~491~~	169	~~59~~	148	~~41~~	33	-	-	-	-	~~303~~	475	-	-	3,~~777~~	3,949
Hardware Procurement	648	~~12~~	51	~~11~~	14	~~13~~	16	~~9~~	2	~~7~~	-	-	-	~~52~~	83	-	-	~~700~~	731
Software Development	485	~~94~~	25	~~95~~	27	~~96~~	20	~~36~~	-	~~37~~	-	-	-	~~178~~	72	-	-	~~663~~	557
Testing	2,926	~~126~~	49	~~98~~	69	~~17~~	75	~~—~~	22	-	-	-	-	~~243~~	214	-	-	3,~~169~~	3,140
Development Total	7,533	~~277~~	251	~~245~~	279	~~124~~	258	~~86~~	57	~~44~~	-	-	-	~~776~~	844	-	-	8,~~309~~	8,377
Production and Deployment	1,108	834	708	~~730~~	461	924	566	~~957~~	447	~~36~~	490		464	3,~~481~~	3,137	—	2,118	4,~~589~~	5,364
Military Construction	26		-		-		-		-		-		-		-		-	26	26
Operations and Support	-	44	44	~~54~~	56	~~77~~	79	~~86~~	85	~~91~~	94	~~97~~	97	~~349~~	443	3,581	3,581	4,~~030~~	4,024
Disposal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	—	178	—	178
Total Cost Estimate	8,667	1,155	1,004	1,029	796	1,125	902	1,129	589	171	574	97	561	4,706	4,425	3,581	5,878	16,~~934~~	18,969

Content Not Included in MDA Cost Estimate: Military Pay, Maintanence & Sustainment of Common Equipment, POL, Production & Sustainment of the AN/TPY 2

(b)(3):10 USC §130

(b)(3):10 USC §130

TIME PHASED ESTIMATE CHART TY $M



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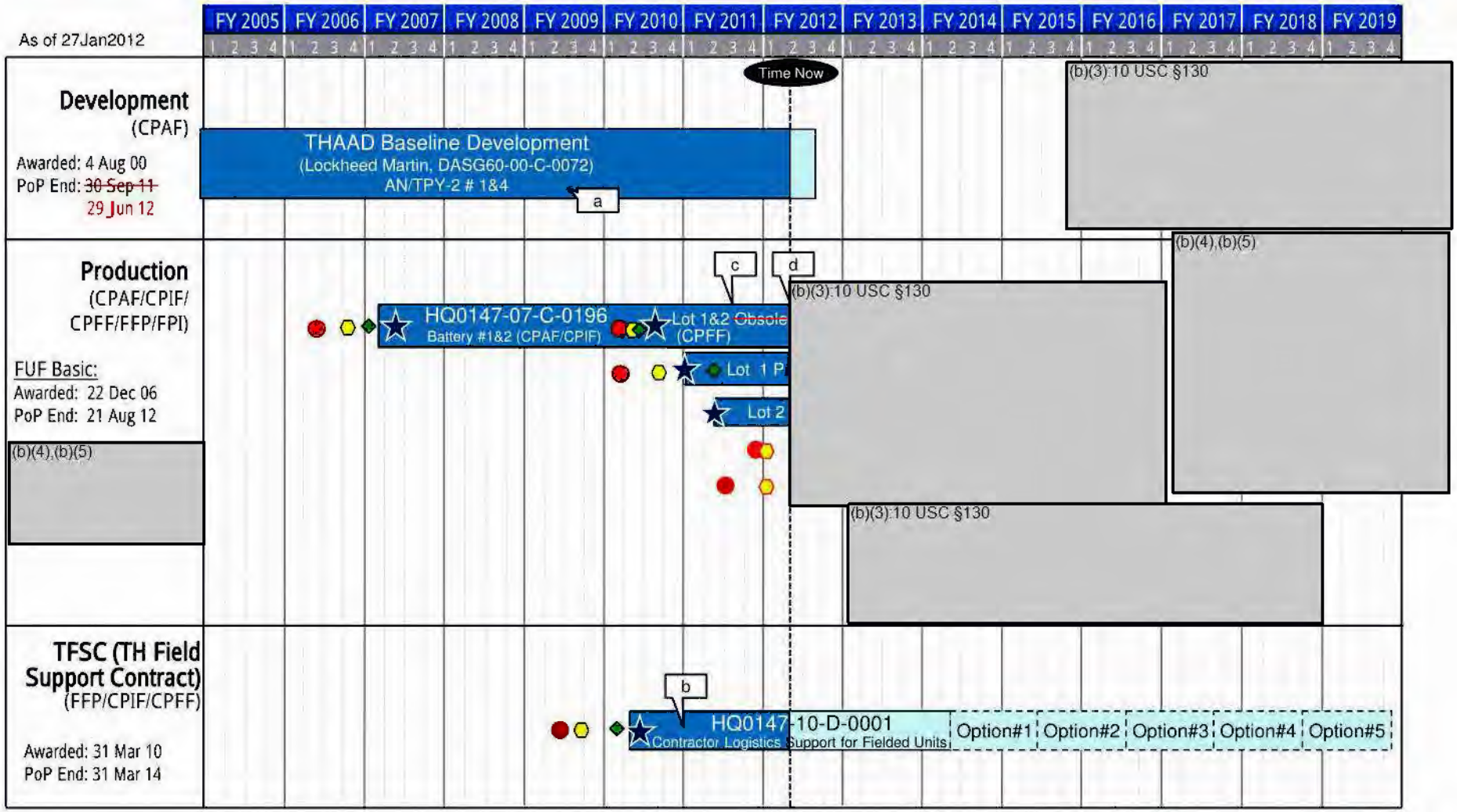
THAAD 1.0

2012 BMDS Accountability Report (BAR) — Contract Baseline



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Approved Original Signed Date 25 Jan 2012
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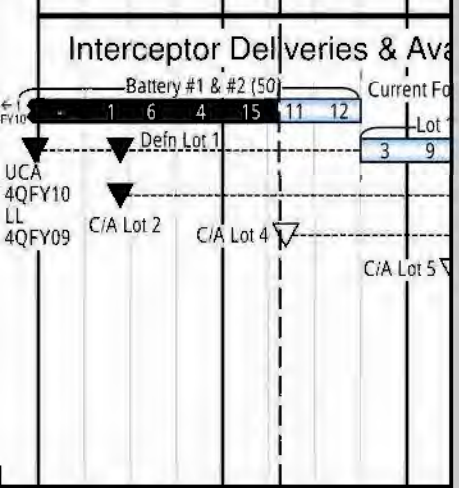
THAAD 1.0

As of 27Jan2012 Time Now

(b)(3):10 USC §130

(b)(3):10 USC §130

C/A Contract Action
CT Collective Training
LL Long Lead (Components)
NET New Equipment Training



Interceptor	FY11		FY12				
US	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Del / Yr	11		41				
Cum Del	12		53				

(b)(3):10 USC §130

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Note: Procurement buys continue through FY21 for total procurement objective of (b)(

6.2.2 AN/TPY-2 Increment 1

AN/TPY-2 Increment 1

Significant Change	Impact to Baseline
(b)(3):10 USC §130,(b)(5)	**Schedule:** Shortened time to complete radar deliveries. **Resource:** Reduced radar buy resulted in an increase of less than 5% to Program Acquisition Unit Cost and Average Procurement Unit Cost.
IMTP v12.1 modified flight and ground test events resulting in a net increase for AN/TPY-2 participation.	**Resource:** Minor impacts. **Schedule/Technical:** (b)(3):10 USC §130,(b)(5) (b)(3):10 USC §130,(b)(5) **Operational Capacity**: No delivery milestones to the warfighter were impacted.
MDA adjusted criteria for production decision KP-3. New criteria requires completion of Critical Design Review for Superdome replacement.	**Schedule/Technical:** (b)(3):10 USC §130,(b)(5) (b)(3):10 USC §130,(b)(5) **Operational:** No delivery milestones to the warfighter were impacted.
Delivered CX-1 software in 3QFY11.	**Operational:** Reduced the limitations reported in the 2011 BAR.

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AN/TPY-2 Increment 1

(b)(3):10 USC §130,(b)(5)

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AN/TPY-2 Increment 1

See Classified Appendix F

AN/TPY-2 Increment 1

See Classified Appendix F

AN/TPY-2 Increment 1

AN/TPY-2 Increment 1 Program Time Phased Estimate (As of 27-Jan-2012)

Costs TY$M	Prior	2012 FY11 BL	2012 FY12 BAR	2013 FY11 BL	2013 FY12 BAR	2014 FY11 BL	2014 FY12 BAR	2015 FY11 BL	2015 FY12 BAR	2016 FY11 BL	2016 FY12 BAR	2017 FY11 BL	2017 FY12 BAR	FYDP Total FY11 BL	FYDP Total FY12 BAR	To Complete FY11 BL	To Complete FY12 BAR	Total FY11 BL	Total FY12 BAR
Hardware Development	$ 88	~~$ 26~~	$ 3	~~$ 22~~	$ 1	$ -	$ 2	$ -	$ 2	$ -	$ 2	$ -	$ 2	~~$ 48~~	$ 12	$ -	$ -	~~$ 136~~	$ 100
Software Development	$ 314	$ -	$ 3	$ -	$ 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5	$ -	$ -	~~$ 314~~	$ 319
Testing	$ 70	~~$ 36~~	$ 33	~~$ 17~~	$ 24	$ -	$ 12	$ -	$ -	$ -	$ -	$ -	$ -	~~$ 53~~	$ 68	$ -	$ -	~~$ 123~~	$ 138
Integration	$ 19	~~$ 2~~	$ -	~~$ 2~~	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	~~$ 4~~	$ -	$ -	$ -	~~$ 23~~	$ 19
Test Item Manufacturing	$ 1,043	~~$ 36~~	$ 32	~~$ 2~~	$ -	~~$ 1~~	$ -	$ -	$ -	~~$ 61~~	$ -	$ -	$ -	~~$ 34~~	$ 32	$ -	$ -	~~$ 1,137~~	$ 1,075
PDSS	$ 30	~~$ 19~~	$ 9	~~$ 19~~	$ 17	~~$ 19~~	$ 17	~~$ 19~~	$ -	~~$ 26~~	$ -	$ -	$ -	~~$ 86~~	$ 43	~~$ 537~~	$ -	~~$ 653~~	$ 73
Test Item Sustainment	$ 479	~~$ 142~~	$ 6	~~$ 181~~	$ 6	~~$ 171~~	$ 6	~~$ 193~~	$ -	~~$ 206~~	$ -	$ -	$ -	~~$ 873~~	$ 18	~~$ 4,556~~	$ -	~~$ 5,908~~	$ 497
Development Total	$ 2,043	~~$ 259~~	$ 86	~~$ 225~~	$ 50	~~$ 197~~	$ 37	~~$ 212~~	$ 2	~~$ 287~~	$ 2	$ -	$ 2	~~$ 1,178~~	$ 178	~~$ 5,087~~	$ -	~~$ 8,308~~	$ 2,221
Production and Deployment	$ 191	~~$ 188~~	$ 380	~~$ 367~~	$ 201	~~$ 378~~	$ -	~~$ 178~~	$ -	~~$ 87~~	$ -	$ -	$ -	~~$ 1,148~~	$ 581	$ -	$ -	~~$ 1,387~~	$ 772
Operations and Support	$ -	$ -	$ 156	$ -	$ 164	$ -	$ 195	$ -	$ 214	$ -	$ 199	$ -	$ 204	$ -	$ 1,133	$ -	$ 4,440	$ -	$ 5,573
Disposal	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 44	$ -	$ 44
Total Cost Estimate	$ 2,234	~~$ 447~~	$ 622	~~$ 592~~	$ 415	~~$ 575~~	$ 232	~~$ 390~~	$ 216	~~$ 324~~	$ 201	$ -	$ 206	~~$ 2,324~~	$ 1,892	~~$ 5,087~~	$ 4,483	~~$ 9,045~~	$ 8,610

Content Not Included in MDA Cost Estimate: Security, BaseOps, SATCOMM, and Military Personnel provided by Army.

(b)(5)

AN/TPY-2 Increment 1 Program Cost Estimate Description Documentation

Cost Analysis Requirements Description

MDA CARD approval date: Approved by PE on 31 Jan 2012

Joint CARD approval date: TBD

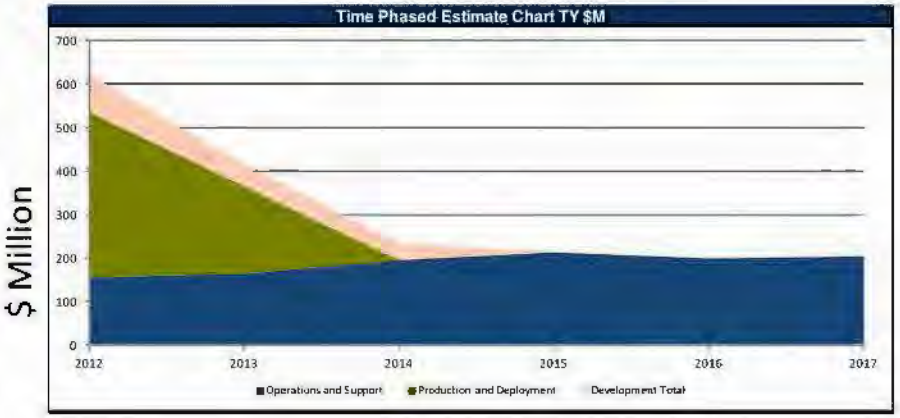
MDA Cost Estimate

Program Office Estimate Approved: 31-Oct-2011

BY11$M

	Current Estimate Prior	To Go	Total	FY 11 Baseline**	Delta
Development	$ 1,631	$ 110	$ 1,741	$ 1,838	$ (97)
Hardware Development	$ 91	$ 9	$ 100	$ 160	
Software Development	$ 318	$ 5	$ 323	$ 318	
Testing	$ 71	$ 66	$ 137	$ 118	
Integration	$ 19	$ -	$ 19	$ 24	
Test Item Manufacturing	$ 1,131	$ 31	$ 1,162	$ 1,218	
Production and Deployment	$ 191	$ 560	$ 750	$ 1,270	$ (520)
Military Construction	$ -	$ -	$ -	$ -	$ -
*Operations and Support	$ 518	$ 3,355	$ 3,873		
Disposal		$ 31	$ 31		
Total Life Cycle	**$ 2,339**	**$ 4,056**	**$ 6,394**		

* Operations and Support includes O&M funded Operations and Sustainment, PDSS and Test Item Sustainment. Period is 30 years starting FY 2006



Approved Original Signed Date 19 Jan 2012
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Approved Original Signed Date 3 Feb 2012
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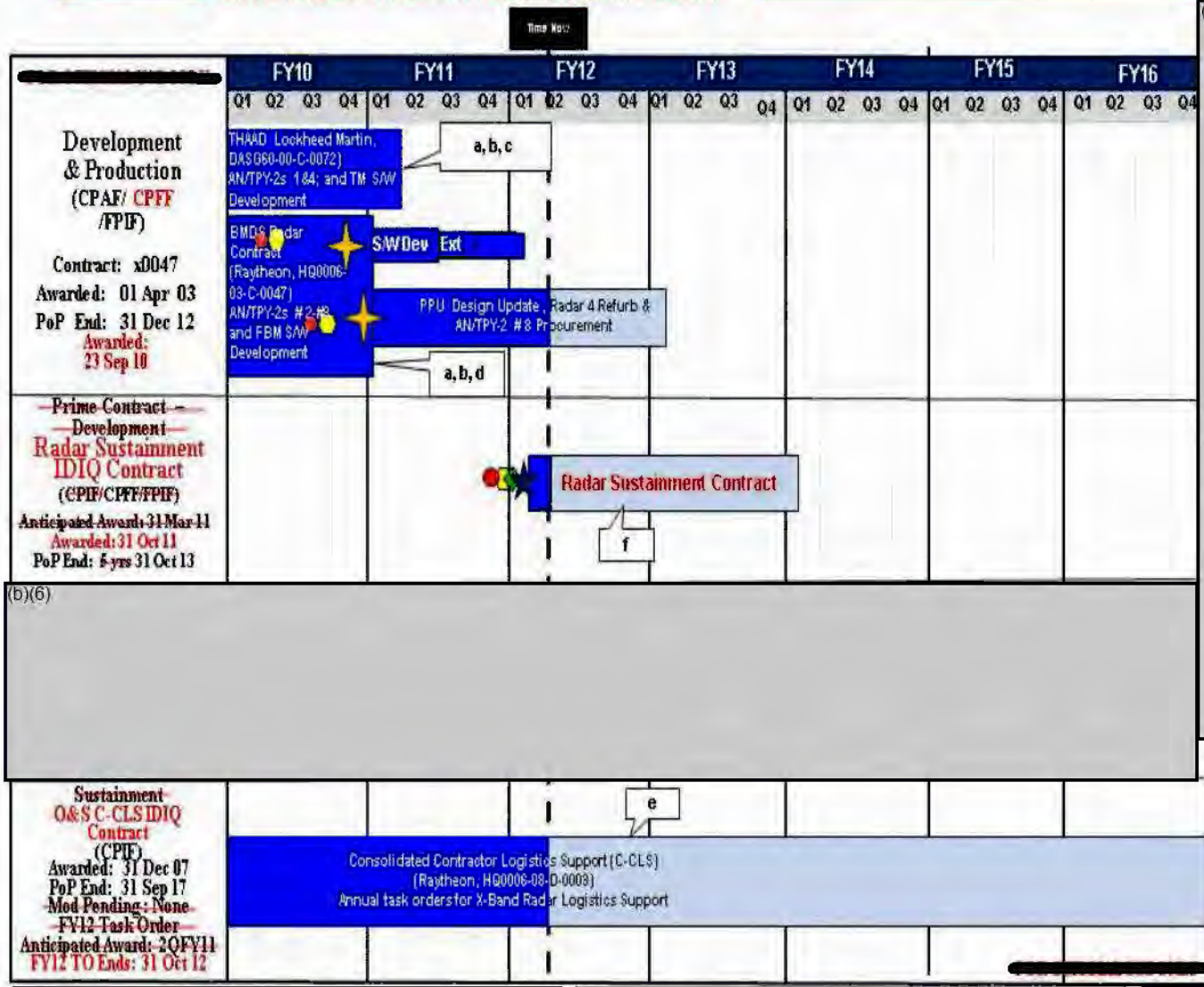
AN/TPY-2 Increment 1

2012 BMDS Accountability Report (BAR) — Contract Baseline



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AN/TPY-2 Increment 1

(b)(3):10 USC §130,(b)(5)

Approved Original Signed Date 19 Jan 2012
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Approved Original Signed Date 20 Jan 2012
(b)(6)

6.3.1 Aegis BMD 4.0.1 SM-3 Block IB

[redacted] UNCLASSIFIED upon removal of attachments 2 and 4

JUN 2 2 2011

MEMORANDUM FOR PROGRAM MANAGER, AEGIS BMD 4.0.1/SM-3 BLOCK IB, MISSILE DEFENSE AGENCY (U)

SUBJECT: (U) Development Decision Memorandum for Aegis BMD 4.0.1/SM-3 Block IB Baseline Review

Reference: (U) Joint MDA Director/ASN (RDA) memorandum dated June 30, 2010, Subj: Development Decision Memorandum for Aegis BMD 4.0.1/SM-3 Block IB Baseline Review

(U) The attached schedule, technical, test, operational, resource, and contracts baselines and activities are approved for Aegis Ballistic Missile Defense (BMD) 4.0.1/Standard Missile 3 (SM-3) Block IB.

(U) Changes to the BMDS baseline are managed through the Missile Defense Agency (MDA) Program Change Board (PCB) in accordance with MDA Directive 5000.04. PCB-approved changes that affect the Aegis BMD 4.0.1/SM-3 Block IB acquisition, development or fielding, will be implemented and documented by the Aegis BMD 4.0.1/SM-3 Block IB Program Office. Baseline variations will be reported to MDA Director; Assistant Secretary of the Navy (ASN(RD&A)); and in the annual BMD System Accountability Report.

(U) The following pre-production activities are directed to occur during the remainder of the Aegis BMD 4.0.1/SM-3 Block IB Product Development Phase. Activities associated with Under Secretary of Defense (USD) for Acquisition, Technology, and Logistics (AT&L) production decisions are shown below as well:

- Independent Cost Estimate by Director, Cost Assessment and Program Evaluation (D, CAPE)
  - Before Materiel and Procurement decisions for Production Lots 1 and 2 — 4Q FY2011
  - Before Production Lot 2 and Beyond decision — 3Q FY2013
- Flight Test Mission (FTM)-16 flight test round – Permit To Ship — 3Q FY2011
- FY 2011 Tests (FTM-16 E1 and E2) — 4Q FY2011
- Production Lot 1 Materiel Procurement Authorization (MPA) decision by USD (AT&L) for (b)(3):10 USC [redacted] (FY 2012 Defense Wide Procurement (DWP) funds) — 1Q FY2012
- Navy Combat System and Weapon Certification — 2Q FY2012

(b)(3):10 USC §130,(b)(5) [redacted]

[redacted] UNCLASSIFIED upon removal of attachments 2 and 4

(b)(3):10 USC §130,(b)(5)

(U) The criteria to exit the Product Development Phase (Attachment 7) are also approved. A Development Baseline Review is expected in 4QFY12 prior to an USD (AT&L) production decision to enter Production Phase.

(U) This memorandum supersedes Reference.

(b)(6)

Assistant Secretary of the Navy
Research, Development & Acquisition

(b)(6)

Lieutenant General, USA
Director

Attachments:
1. Aegis BMD 4.0.1/SM-3 Block IB Schedule Baseline. This document is "[redacted]"
2. Aegis BMD 4.0.1/SM-3 Block IB Technical Baseline. This document is "[redacted]"
3. Aegis BMD 4.0.1/SM-3 Block IB Test Baseline. This document is "[redacted]"
4. Aegis BMD 4.0.1/SM-3 Block IB Operational Capacity Baseline. This document is "[redacted]"
5. Aegis BMD 4.0.1/SM-3 Block IB Resource Baseline. This document is "[redacted]"
6. Aegis BMD 4.0.1/SM-3 Block IB Contract Baseline. This document is "[redacted]"
7. Aegis BMD 4.0.1/SM-3 Block IB Exit Criteria. This document is "[redacted]"

cc:
DASN (Ships)
MDA/DX
MDA/DE
MDA/DO
MDA/DA
MDA/DP
MDA/DT
MDA/DS
MDA/AB
IWS/1.0
IWS/3.0
OPNAV N86

Aegis BMD 4.0.1/SM-3 Block IB

Significant Change	Impact to Baselines
FTM-16 E2 failed on 1 Sep 2011.	**Schedule:** (b)(3):10 USC §130,(b)(5) **Resource:** Increased development costs in FY12. The Program Acquisition Unit Cost did not increase as the increase was offset by increased procurement quantities..
SM-3 Block IB Initial Spares and Production Engineering will be aligned to Procurement vice RDT&E in FY 2013 and beyond.	**Resource:** SM-3 Block IB All Up Round (AUR) Average Procurement Unit Cost increased by 10%. The decision to use procurement funding for initial spares is an administrative change to the program baseline and does not constitute real cost growth. Therefore the increase in APUC is not listed in Section 4 of the BAR.
(b)(3):10 USC §130,(b)(5)	**Operational Capacity:** (b)(3):10 USC §130,(b)(5) **Resource:** "To Complete" costs increased.

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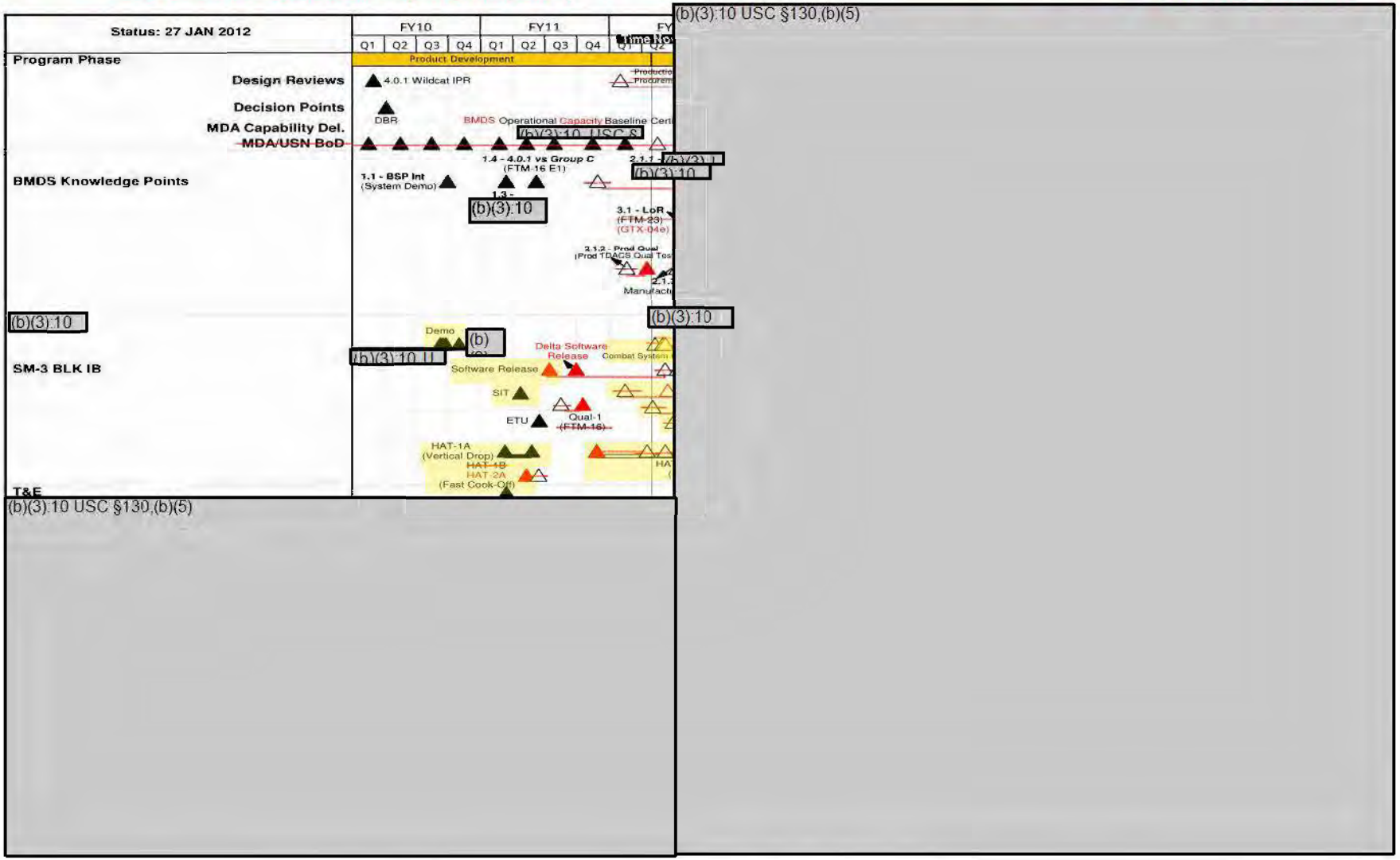
Aegis BMD 4.0.1/SM-3 Block IB

2012 BMDS Accountability Report (BAR) — **Schedule Baseline**



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Critical Milestones Highlighted in Yellow

Aegis BMD 4.0.1/SM-3 Block IB

See Classified Appendix F

Aegis BMD 4.0.1/SM-3 Block IB

See Classified Appendix F

Aegis BMD 4.0.1/SM-3 Block IB

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Aegis BMD 4.0.1/SM-3 Block IB

2012 BMDS Accountability Report (BAR) — Contract Baseline

(b)(3):10 USC §130,(b)(5)

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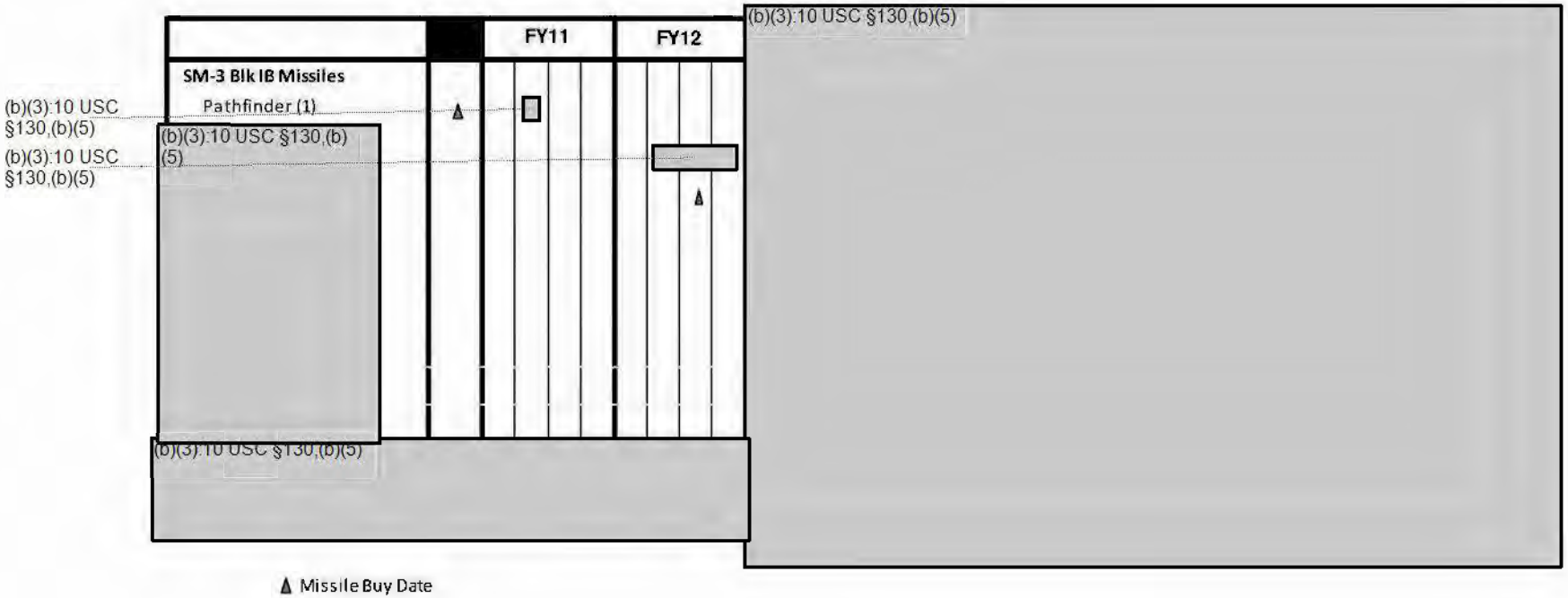
Aegis BMD 4.0.1/SM-3 Block IB



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(b)(6)

6.3.2 Aegis Ashore

Aegis Ashore

Significant Change	Impact to Baselines
Completed design reviews and program definition which led to an updated system configuration and acquisition strategy. • (b)(3):10 USC §130 (b)(3):10 USC §130 fabrication reduces schedule and integration risk • (b)(3):10 USC §130	**Schedule:** Adjusted fabrication and site preparation schedule events. (b)(3):10 USC §130 (b)(3):10 USC §130 **Resource:** Updated cost estimate to reflect system configuration and acquisition strategy. **Contract:** Adjusted contract strategy consistent with the approved acquisition strategy.
In order to improve visibility of total Aegis Ashore costs, incorporated Military Construction, Site Activation, On Site Systems Engineering, and Non-tactical Communications with the Aegis Ashore Resource Baseline.	**Resource:** • For the FY11 BAR these costs were part of the BMDS program but not aligned with the Aegis Ashore Resource Baseline. • Inclusion of these costs drive an increase to both Program Acquisition Unit Cost (PAUC) and Average Procurement Unit Cost (APUC). The increase to APUC is solely due administrative realignment of content and not due to cost growth. The PAUC increase is due to two components: (b)(4),(b)(5)

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Aegis Ashore

(b)(3):10 USC §130,(b)(5)

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Aegis Ashore

See Classified Appendix F

Aegis Ashore

(b)(3):10 USC §130,(b)(5)

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Aegis Ashore

(b)(5)

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Aegis Ashore

(b)(3):10 USC §130,(b)(4),(b)(5)

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Aegis Ashore

(b)(3):10 USC §130,(b)(5)

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(b)(6)

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(b)(6)

6.3.3 Aegis BMD 5.0

Aegis BMD 5.0

Significant Change	Impact to Baselines
Added Aegis Ashore computer program, Aegis BMD 5.0 CU information, and government purchase costs to capture the full baseline 9 integration effort.	**Schedule:** Reflect Aegis Ashore and Aegis BMD 5.0 CU development and test activities. **Technical:** Aegis BMD 5.0 CU Capabilities added. **Operational Capacity:** Aegis BMD 5.0 CU Capabilities and Limitations added. **Resource:** Cost estimates for Aegis Ashore computer program, Aegis BMD 5.0 CU, and government purchase added to the program baseline. Inclusion of these costs drove an increase to Program Acquisition Unit Cost (PAUC) and Average Procurement Unit Cost (APUC). The increase is due to the expanded program content and not the result of real cost growth. Therefore the PAUC and APUC increases are not reported as variances in Section 4 of the BAR. **Contracts:** Added CLINs for Aegis BMD 5.0 CU and Aegis Ashore.
NAVSEA changed lead ship's scheduled maintenance period and expanded scope of yard work.	**Schedule/Technical:** Reduced and shifted test window, impacted test dates, knowledge points, and the certification date for ship. **Contracts:** Contract POPs changed to reflect new finish dates. **Operational Capacity:** Shifted test dates.
IMTP 12.1 changed the test program.	**Schedule:** Added ground tests and modified flight tests. **Technical:** Knowledge Points changed to reflect different test dates. **Operational Capacity:** Changed test dates.
(b)(3):10 USC §130,(b)(5)	**Schedule/Operational Capacity:** Aegis BMD 5.0 installation schedule modified to reflect the Navy fielding and decommissioning plan.

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Aegis BMD 5.0

(b)(3):10 USC §130,(b)(5)

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Aegis BMD 5.0

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See Classified Appendix F

Aegis BMD 5.0

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Aegis BMD 5.0

(b)(3):10 USC §130,(b)(5)

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Aegis BMD 5.0

Aegis BMD Ship Capacity Profile (Numbers are Cumulative)

Aegis BMD Ships	FY10	FY11	FY12	(b)(3):10 USC §130,(b)(5)
5.0/5.0 CU	0	0	1	

(b)(3):10 USC §130,(b)(5)

Note: Aegis Ashore installs are recorded by the Aegis Ashore Program.

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6.4 GMD Initial Homeland Defense (IHD)

GMD Initial Homeland Defense

2012 BMDS Accountability Report (BAR) — Significant Change Summary

Significant Change	Impact to Baseline

(b)(3):10 USC §130,(b)(5)	**Schedule:**
	• Return-to-Intercept testing and hardware development content added:
	  • Failure Review Board and resolution testing
	  • Design resolution, hardware development and testing
	• (b)(3):10 USC §130,(b)(5)
	• Baseline content deferred to future capability increment/s
	  • Ground Systems obsolescence mitigation
	  • Fort Greely non-critical communications infrastructure upgrades
	  • (b)(3):10 USC §130,(b)(5)
	• (b)(3):10 USC §130,(b)(5)
	Resource:
	• Resources realigned from deferred content to fund Return-to-Intercept activities
	  • Ground Systems obsolescence mitigation
	  • Fort Greely non-critical communications infrastructure upgrades
	  • (b)(3):10 USC §130,(b)(5)

(b)(3):10 USC §130,(b)(5)	**Schedule:** • (b)(3):10 USC §130,(b)(5) **Resource:** • (b)(3):10 USC §130,(b)(5)

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(b)(6)

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GMD Initial Homeland Defense

(b)(3):10 USC §130,(b)(5)

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GMD Initial Homeland Defense

See Classified Appendix F

GMD Initial Homeland Defense

See Classified Appendix F

GMD Initial Homeland Defense

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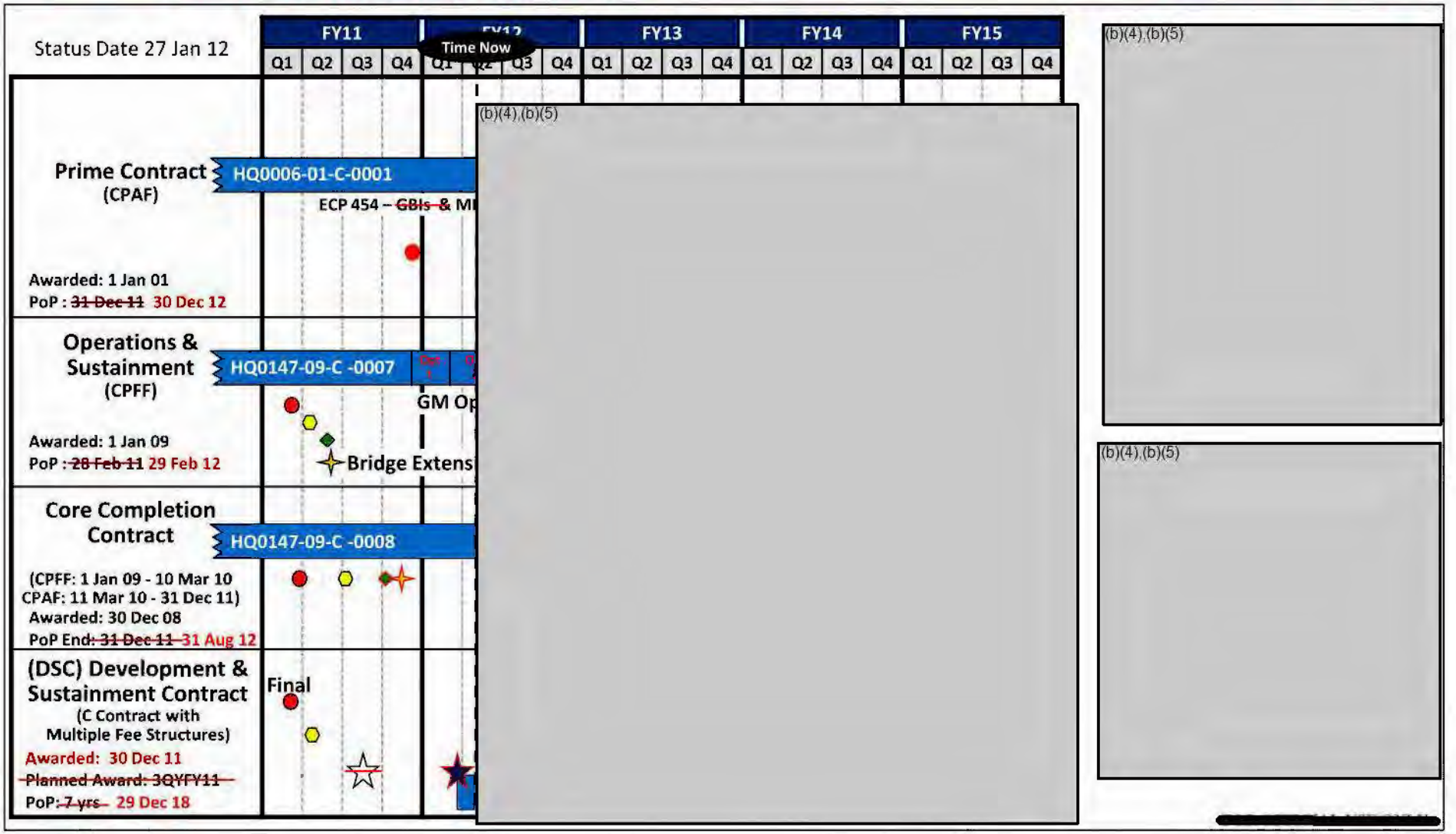
GMD Initial Homeland Defense

2012 BMDS Accountability Report (BAR) — Contract Baseline



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GMD Initial Homeland Defense

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6.5.1 Intermediate Range Ballistic Missile (IRBM)

IRBM

Significant Change	Impact to Baseline
Restructured IRBM program and moved Common Components to a new, separately managed program baseline.	**Resource:** Reallocated Common Component costs to a new Common Components program. **Technical:** (b)(3):10 USC §130,(b)(5) (b)(3):10 USC §130,(b)(5)
IMTP v12.1 modified dates that IRBM targets are required.	**Schedule:** Adjusted target delivery dates.
(b)(3):10 USC §130,(b)(5)	**Contract:** RFP release planned for March 2012 with tentative award date 4QFY12.
Modified acquisition (b)(3):10 USC §130,(b)(5)	**Schedule:** Added booster deliveries and ICBM integration to the schedule. **Resource:** Included recurring and non-recurring costs for a new booster for the near-term ICBM missions. **Technical:** (b)(3):10 USC §130,(b)(5) (b)(3):10 USC
MDA modified accounting rules for target unit cost to afford better insight for the recurring and non-recurring costs for each target type. Common Target Support is no longer distributed into each target non-recurring costs, and sunk costs are included for both non-recurring and AUC calculations. Also reallocated costs of the components that are common among programs from the MRBM Resource Baseline to the Common Components Resource Baseline.	**Resource:** Adjusted the non-recurring / Average Unit Cost table to show both the value reported in the FY11 BAR and an adjusted value that applies the same accounting rules used for the FY12 calculations. The deltas represent the difference between the FY12 calculations and the adjusted FY11 values.

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IRBM

(b)(3):10 USC §130,(b)(5)

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See Classified Appendix F

IRBM

(b)(3):10 USC §130,(b)(5)

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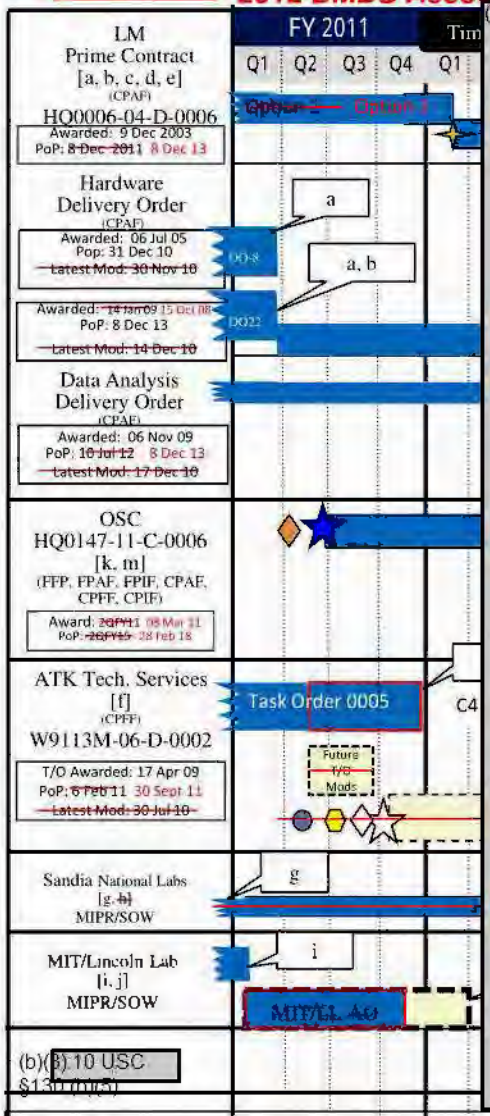
IRBM

2012 BMDS Accountability Report (BAR)

Contract Baseline



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IRBM

(b)(3):10 USC §130,(b)(5)

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(b)(6)

6.5.2 Medium Range Ballistic Missile (MRBM)

MRBM

Significant Change	Impact to Baseline
IMTP v12.1 modified dates that MRBM targets are required.	**Schedule:** Adjusted target delivery dates.
(b)(3):10 USC §130,(b)(5)	**Contract:** RFP release planned for March 2012 with tentative award date 4QFY12.
Restructured MRBM program and moved Common Components to a new, separately managed program baseline.	**Resource:** Reallocated Common Component costs to a new Common Components program. **Technical:** (b)(3):10 USC §130,(b)(5) (b)(3):10 USC §130,(b)(5)
(b)(3):10 USC §130,(b)(5)	**Resource:** (b)(3):10 USC §130,(b)(5) (b)(3):10 USC §130,(b)(5)
MDA modified accounting rules for target unit cost to afford better insight for the recurring and non-recurring costs for each target type. Common Target Support is no longer distributed into each target non-recurring costs, and sunk costs are included for both non-recurring and AUC calculations. Also reallocated costs of the components that are common among programs from the MRBM Resource Baseline to the Common Components Resource Baseline.	**Resource:** Adjusted the non-recurring / Average Unit Cost table to show both the value reported in the FY11 BAR and an adjusted value that applies the same accounting rules used for the FY12 calculations. The deltas represent the difference between the FY12 calculations and the adjusted FY11 values.

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MRBM

(b)(3):10 USC §130,(b)(5)

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See Classified Appendix F

MRBM

(b)(3):10 USC §130,(b)(5)

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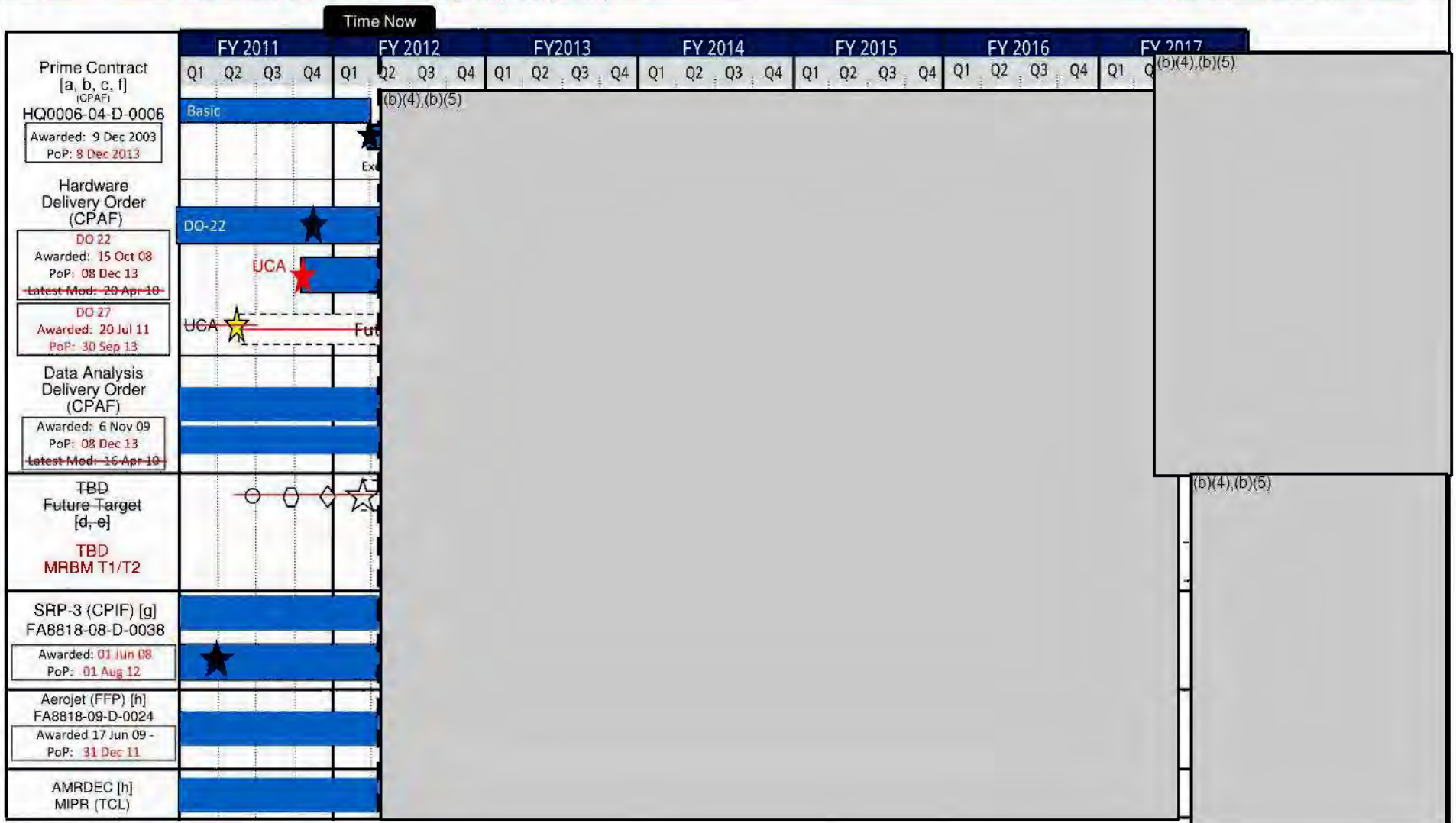
MRBM

2012 BMDS Accountability Report (BAR) — Contract Baseline



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MRBM

(b)(3):10 USC §130,(b)(5)

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6.5.3 Short Range Ballistic Missile (SRBM)

SRBM

Significant Change	Impact to Baseline
IMTP v12.1 modified dates that SRBM targets are required and added a requirement for (b)(3):10 USC §130 (b)(3):10	**Schedule:** Adjusted target delivery dates. **Resource:** Included non-recurring costs for the (b)(3):10 USC §130 (b)(5) **Technical:** Added technical description for the (b)(3):10 USC §130 (b)(5)
(b)(3):10 USC §130,(b)(5)	**Resource:** Adjusted cost estimates for the additional scope for the (b)(3):10 USC §130 (b)(3):10 (b)(3):10 USC §130,(b)(5) This drove an increase to AUC as reported in BAR Section 4.
(b)(3):10 USC §130,(b)(5)	**Resource:** (b)(3):10 USC §130,(b)(5) (b)(3):10 USC §130,(b)(5) (b)(3):10 USC §130,(b)(5) it is not reported as a variance in BAR Section 4.
MDA modified accounting rules for target unit cost to afford better insight for the recurring and non-recurring costs for each target type. Common Target Support is no longer distributed into each target non-recurring costs, and sunk costs are included for both non-recurring and AUC calculations.	**Resource:** Adjusted the non-recurring / Average Unit Cost table to show both the value reported in the FY11 BAR and an adjusted value that applies the same accounting rules used for the FY12 calculations. The deltas represent the difference between the FY12 calculations and the adjusted FY11 values.

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SRBM

(b)(3):10 USC §130,(b)(5)

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See Classified Appendix F

SRBM

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Approved Original Signed Date 3 Feb 2012
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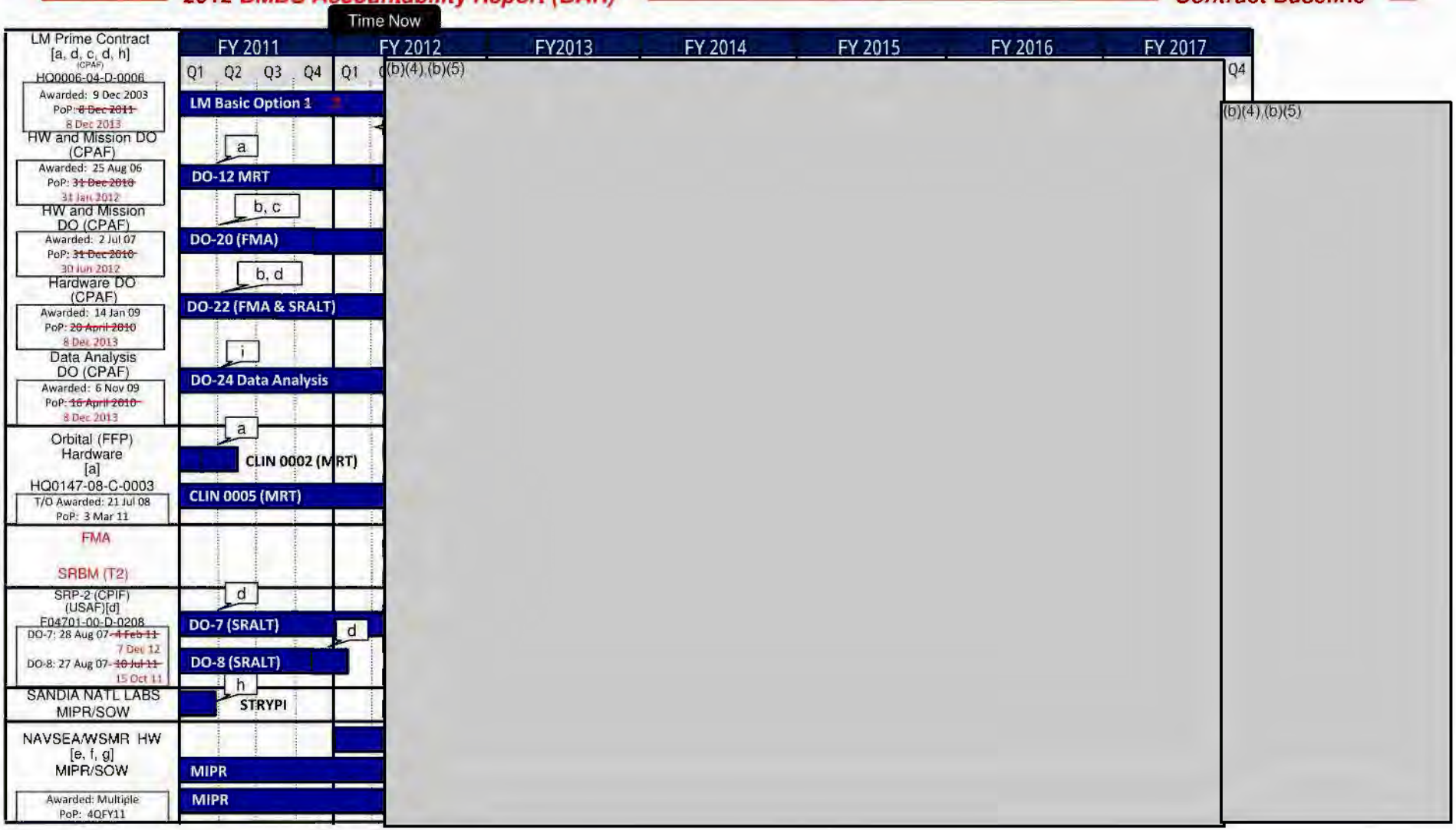
SRBM

2012 BMDS Accountability Report (BAR) — Contract Baseline



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SRBM

(b)(3):10 USC §130,(b)(5)

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6.5.4 Targets Common Components

DEPARTMENT OF DEFENSE
MISSILE DEFENSE AGENCY
5700 18TH STREET
FORT BELVOIR, VIRGINIA 22060-5573

DA

FEB 0 3 2012

MEMORANDUM FOR PROGRAM DIRECTOR, TARGETS AND COUNTERMEASURES

SUBJECT: (U) Development Decision Memorandum for Targets and Countermeasures Common Components Baseline Review

(U) The attached schedule, technical, resource, and contracts baselines and activities are approved for Targets and Countermeasures (TC) Common Components Program. There is no test baseline because the tests the Common Components office supports are described in the relevant program test baseline.

(U) Changes to the BMDS baseline are managed through the Missile Defense Agency (MDA) Program Change Board (PCB) in accordance with MDA Directive 5010.18, Acquisition Management. PCB-approved changes that affect the TC acquisition will be implemented by the TC Program Office. Baseline variations will be reported to the Director, MDA, and included in the annual BMDS Accountability Report.

(b)(5)

The Common Components office, like the IRBM, MRBM, and SRBM programs, will support the development of the BMDS and remain in the Product Development Phase indefinitely.

(b)(6)

Lieutenant General, USA
Director

[redacted] (b)(6)
Derived from: BMDS SCG, 19OCT2010
Declassify on: 19OCT2035

[redacted]

[redacted]

Attachments:
1. ~~(U) TC Schedule Baseline. This document is [redacted].~~
2. ~~(U) TC Technical Baseline. This document is [redacted].~~ N/D
3. ~~(U) TC Resource Baseline. This document is [redacted].~~
4. ~~(U) TC Contract Baseline. This document is [redacted].~~ N/D

cc:
MDA/DX
MDA/DE
MDA/DO
MDA/DA
MDA/DP
MDA/DT
MDA/DS

[redacted]

Common Components

(b)(3):10 USC §130,(b)(5)

Approved Original Signed Date 3 Feb 2012	Approved Original Signed Date 3 Feb 2012	Approved Original Signed Date 3 Feb 2012
(b)(6)	(b)(6)	(b)(6)

Common Components

See Classified Appendix F

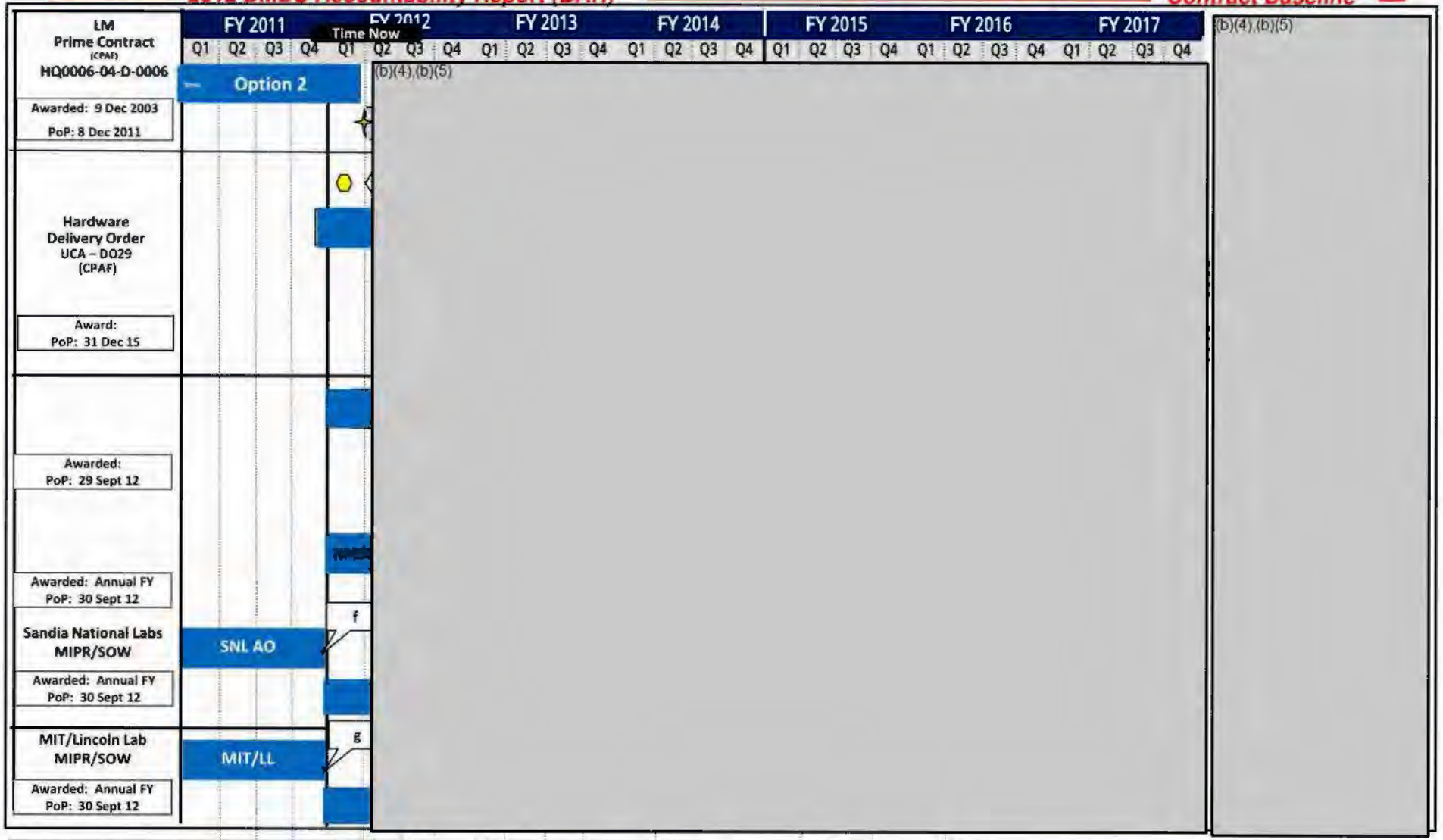
Common Components

(b)(3):10 USC §130,(b)(5)

Approved Original Signed Date 3 Feb 2012 (b)(6)	Approved Original Signed Date 3 Feb 2012 (b)(6)	Approved Original Signed Date 3 Feb 2012 (b)(6)

Common Components

2012 BMDS Accountability Report (BAR) — Contract Baseline



Approved Original Signed Date 3 Feb 2012	Approved Original Signed Date 3 Feb 2012	Approved Original Signed Date 3 Feb 2012
(b)(6)	(b)(6)	(b)(6)

6.6.1 David's Sling Weapons System (DSWS)

(b)(3):10 USC §130

Approved Original Signed Date 25 Jan 2012
(b)(6)

Approved Original Signed Date 25 Jan 2012
(b)(6)

David's Sling Weapon System (DSWS)

See Classified Appendix F

David's Sling Weapon System (DSWS)

See Classified Appendix F

David's Sling Weapon System (DSWS)

(b)(3):10 USC §130

Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 26 Jan 2012 (b)(6)

David's Sling Weapon System (DSWS)

See Classified Appendix F

6.6.2 Upper Tier / Arrow 3

Upper Tier / Arrow 3

(b)(3):10 USC §130

Approved Original Signed Date 25 Jan 2012
(b)(6)

Approved Original Signed Date 25 Jan 2012
(b)(6)

Upper Tier / Arrow 3

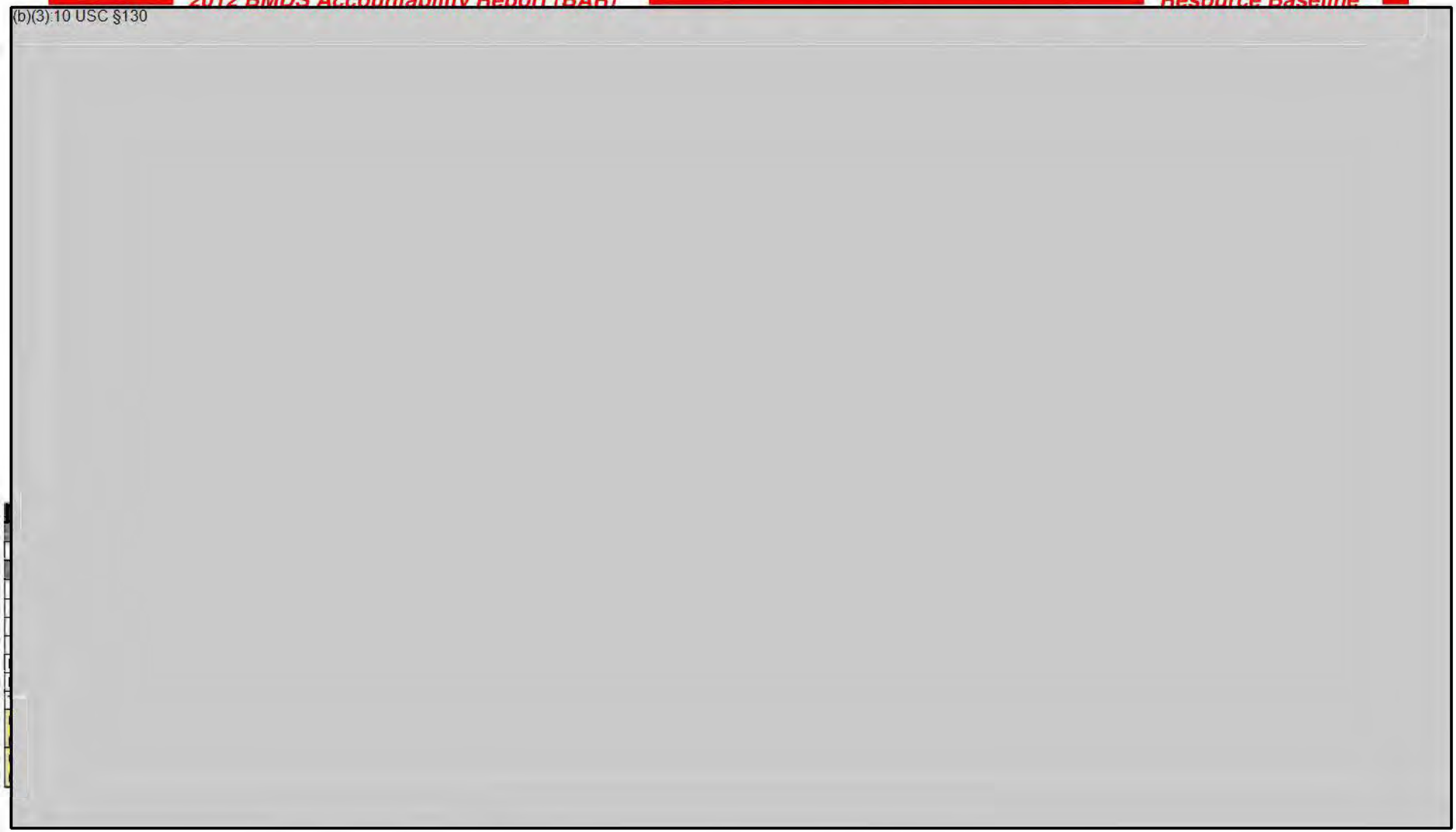
See Classified Appendix F

Upper Tier / Arrow 3

See Classified Appendix F

Upper Tier / Arrow 3

(b)(3):10 USC §130



Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 26 Jan 2012 (b)(6)

Upper Tier / Arrow 3

(b)(3):10 USC §130

Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 26 Jan 2012 (b)(6)

Upper Tier / Arrow 3

See Classified Appendix F

6.6.3 Arrow 2 Block 4

Arrow 2 Block 4

(b)(3):10 USC §130

Approved Original Signed Date 25 Jan 2012
(b)(6)

Approved Original Signed Date 25 Jan 2012
(b)(6)

Arrow 2 Block 4

See Classified Appendix F

Arrow 2 Block 4

See Classified Appendix F

Arrow 2 Block 4

(b)(3):10 USC §130

Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 26 Jan 2012 (b)(6)

Arrow 2 Block 4

(b)(3):10 USC §130

Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 26 Jan 2012 (b)(6)

Arrow 2 Block 4

See Classified Appendix F

6.7.1 Precision Tracking Space System (PTSS)

Precision Tracking Space System

Significant Change	Impact to Plan
50% Congressional reduction in FY12 resulted in reprioritization of work	**Schedule:** (b)(5) (b)(5) **Resource:** Adjusted program content to executable program within available resources.
MDA developed an acquisition strategy for launch services.	**Contract:** Updated to include a competitive procurement of launch vehicles and services through the Air Force.
(b)(3):10 USC §130,(b)(5)	**Schedule:** Added Production Preparation Decision before CDR. **Contract:** Updated to show award of the full and open competition contract with industry for follow-on satellite production.

Approved Original Signed Date 24 Jan 2012
(b)(6)

Approved Original Signed Date 24 Jan 2012
(b)(6)

Precision Tracking Space System

(b)(3):10 USC §130,(b)(5)

Approved Original Signed Date 24 Jan 2012 (b)(6)	Approved Original Signed Date 24 Jan 2012 (b)(6)	Approved Original Signed Date 24 Jan 2012 (b)(6)

Precision Tracking Space System

See Classified Appendix F

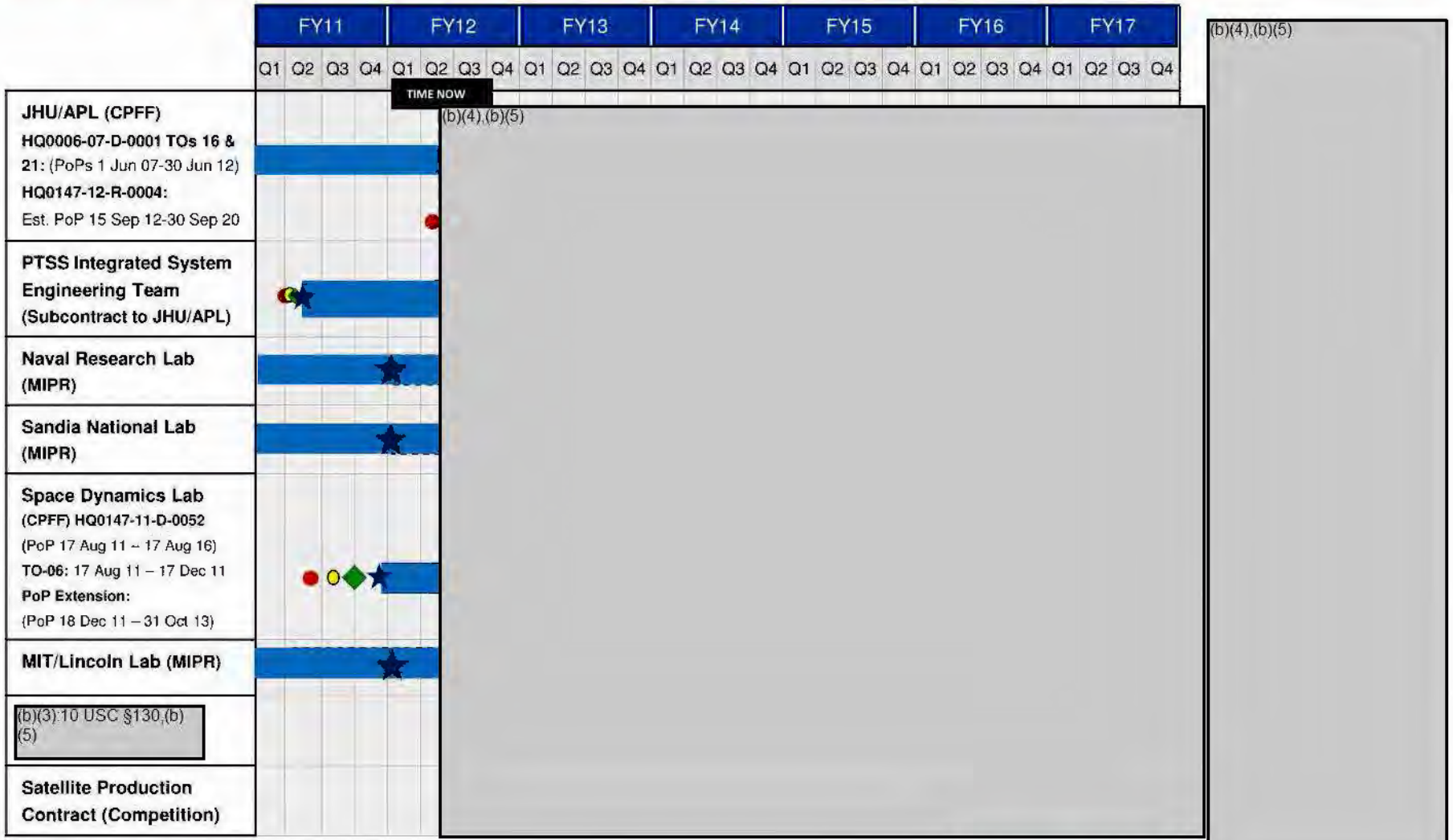
Precision Tracking Space System

(b)(5)

Approved Original Signed Date 26 Jan 2012 (b)(6)	Approved Original Signed Date 26 Jan 2012 (b)(6)	Approved Original Signed Date 3 Feb 2012 (b)(6)

Precision Tracking Space System

2012 BMDS Accountability Report (BAR) — Contract Plan



Approved Original Signed Date 24 Jan 2012	Approved Original Signed Date 24 Jan 2012	Approved Original Signed Date 24 Jan 2012
(b)(6)	(b)(6)	(b)(6)

6.7.2 Aegis Standard Missile 3 Block IIB (SM-3 Blk IIB)

Standard Missile 3 Block IIB

Significant Change	Impact to Program Plan
(b)(5)	(b)(3):10 USC §130,(b)(5) **Schedule:** (b)(3):10 USC §130,(b)(5) **Resource:** Re-phased resources for Technology Development Phase. **Contract**: Realigned contracts to support new funding allocation. MDA is leveraging complementary and advanced research efforts to continue technology risk reduction at a reduced rate.

Approved Original Signed Date 25 Jan 2012
(b)(6)

Approved Original Signed Date 25 Jan 2012
(b)(6)

Standard Missile 3 Block IIB

(b)(3):10 USC §130,(b)(5)

Approved Original Signed Date 31 Jan 2012 (b)(6)	Approved Original Signed Date 31 Jan 2012 (b)(6)	Approved Original Signed Date 31 Jan 2012 (b)(6)

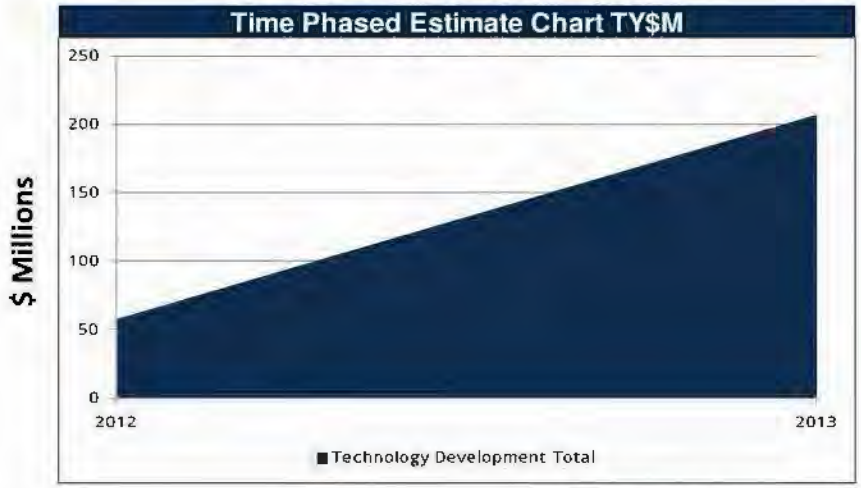
Standard Missile 3 Block IIB

See Classified Appendix F

Standard Missile 3 Block IIB

SM-3 IIB Time Phased Estimate (As of 01-27-2012)						
TY$M	Prior	2012	2013	FY12-FY13 TOTAL	To Complete	Total
Hardware Analysis/Development	$103	$35	$118	$153	$84	$340
Software Analysis/ Development			$34	$34	$0	$34
Demonstrations			$3	$3	$0	$3
Demonstrations Item Fabrication				$0	$0	
Integration	$41	$23	$52	$75	$0	$116
Technology Development Total	$144	$58	$207	$265	$84	$493
Total Cost Estimate	**$144**	**$58**	**$207**	**$265**	**$84**	**$493**

Content Not Included in MDA Cost Estimate: Product Development Phase



Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 3 Feb 2012 (b)(6)

Standard Missile 3 Block IIB

(b)(4),(b)(5)

Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 25 Jan 2012 (b)(6)	Approved Original Signed Date 25 Jan 2012 (b)(6)

Appendix A: MDA Contract Performance Summary

(data as of December 31, 2011 unless otherwise noted)

Dollars in millions except where noted

Contract Info		Price and Budget		LOE %'s	Program Completion		Cost Trends and Estimate				Funding Impact
Program	Prime Contractor	Target Price	Contract Budget Base	(LOE % of work remaining & planned)	(b)(3):10 USC §130 (b) (5)	Target Completion Date	6 Month CPI	Cum CV	Projected VAC (Overrun) or Underrun $ / ($)	Projected VAC (Overrun) or Underrun % / -%	FY12 or FY13 (Min, Mod, Sig)
Aegis Ashore	**Lockheed**	**$139**	**$123**	**54%**		**Sep-12**	**0.98**	**($0.5)****	**$0.0**	**0.0%**	**Minimal**
Aegis AWS	**Lockheed**	**$564**	**$492**	**40%**		**Dec-13**	**0.96**	**$12.6**	**$0.0**	**0.0%**	**Minimal**
4.0.1	Lockheed	$114	$108	54%		Mar-12	0.96	$1.7	$0.0	0.0%	Minimal
5.0	Lockheed	$328	$280	34%		Dec-13	0.97	$9.4	$0.0	0.0%	Minimal
5.1	Lockheed	$122	$104	0%		Jan-13	0.97	$1.6	$0.0	0.0%	Minimal
Aegis SM-3	**Raytheon**	**$1,181**	**$1,079**	**14%**		**Aug-13**	**0.98**	**($5.2)****	**($14.0)**	**-1.3%**	**Minimal**
IB Dev	Raytheon	$286	$243	12%		Mar-13	#N/A	$0.0	($4.0)	-1.6%	Minimal
Prod	Raytheon	$895	$836	15%		Aug-13	0.98	($5.2)**	($10.0)	-1.2%	Minimal
Aegis SM-3 BLK IIA	Raytheon	**$452**	**$398**	**0%**		**Mar-12**	**1.05**	**$6.5**	**$0.0**	**0.0%**	**Minimal**
AN/TPY-2	**Raytheon**	**$1.9B**	**$1.7B**	**30%**		**Dec-12**	**1.00**	**$46.6**	**$37.0**	**2.2%**	**Minimal**
C2BMC	**Lockheed**	**$1.9B**	**$1.5B**	**68%**		**Mar-12**	**1.03**	**($20.6)****	**$14.1**	**0.9%**	**Minimal**
GMD	**Boeing**	**$18.3B**	**$16.6B**	**41%**		**Mar-14**	**0.95**	**($1.0B)****	**($1.0B)**	**-6.2%**	**Minimal**
Prime	Boeing	$16.9B	$15.3B	39%		Mar-14	0.94	($1.1B)**	($1.1B)	-7.2%	Minimal
Core Comp. Contract	Boeing	$1.4B	$1.3B	67%		Aug-12	1.12	$89.1	$79.0	6.1%	Minimal
TC	**Lockheed**	**$2.3B**	**$2.1B**	**11%**		**Dec-13**	**0.95**	**($64.7)****	**($73.6)**	**-3.6%**	**Minimal**
TC IRBM Air Launch	**Orbital**	**$219**	**$204**	**6%**		**May-15**	**0.87**	**($2.2)****	**($5.8)**	**-2.8%**	**Minimal**
THAAD	**Lockheed**	**$1.6B**	**$1.4B**	**17%**		**Mar-14**	**0.92**	**($22.3)****	**($59.0)**	**-4.3%**	**Moderate**
Fire Unit Fieldling	Lockheed	$1.6B	$1.4B	17%		Mar-14	0.92	($22.3)**	($59.0)	-4.3%	Moderate
TOTAL MDA Programs		**$28.6B**	**$25.6B**					**$1.05B****	**$1.12B**	**-4.4%**	

Month-end Nov 11 data is reported for the following contracts: Aegis SM-3 Development and Production, AN/TPY-2, C2BMC, GMD Prime, TC IRBM Air Lunch

**** CV (Cum Cost Variance) represent the "sunk" costs relative to the overall overrun projection. Previous budgets accounted for these sunk costs.**

FUNDING IMPACT: **Projected Burn Rate % beyond FY Funding**

<5% = Minimal
>5% or < 10% = Moderate
>10% = Significant

Appendix B - Missile Defense Executive Board (MDEB) – Report of Activities for CY 2011

Meeting Date	Agenda
24 March 2011	• Hedge Options for Defense of the Homeland • PATRIOT and Integrated Air and Missile Defense (IAMD) Battle Command System Business Case Analysis • Operational Forces Standing Committee (OFSC) Update (Operations and Sustainment (O&S) Program Objective Memorandum (POM)-13 Requirements, PCL, Cobra Dane) • Funding Responsibilities for Ballistic Missile Defense System Elements
29 June 2011	• Policy Committee - Regional Phase Adaptive Approach (PAA), Hedge Strategy, (b)(3):10 USC §130,(b)(5) (b)(3):10 USC §130,(b) • MDA Budget Issues - FY 2011/2012 Update - POM-13 Summary • THAAD Buy-to-Budget and Should Cost • Operational Forces Standing Committee Status - (b)(3):10 USC §130 - Service O&S Requirements - System Security Level - A (SSLA) Review Status • AMDI Committee Endorsement of Charter • PATRIOT Transfer to MDA
10 August 2011	(b)(3):10 USC §130

(b)(5)

Meeting Date	Agenda	(b)(5)
15 September 2011	• Ballistic Missile Defense System Alternate (Alt) POM	

Meeting Date	Agenda	Decisions and Recommendations
17 October 2011	• BMDS Alt POM Excursion • Program Review - IAMD Issues • Warfighter Assessment of BMDS Alt POM • IMTP Assessment of BMDS Alt POM • Remote Sensor Study Report Out	No published ADM
26 October 2011	• BMDS Alt POM Options • CAPE Discussion	No published ADM

Table B.1 – MDEB Meeting Dates, Agenda, and Decisions and Recommendations for CY 2011

Appendix C: Resource Baseline Methodology

The *resource baseline* is the expected investment in acquiring a capability and includes all costs associated with delivery of a BMDS product, and are derived from time-phased cost estimates in then-year dollars jointly approved by MDA's Program Directors and the Director of Cost Estimating and Analysis.[1] The baselines are expressed in base year dollars indexed to the year resource baselines are approved. For example, cost estimates for new baselines are indexed to the base year FY 2011.

Risk is incorporated in the cost estimates that form the basis for information in the resource baseline charts included in this report. The process for incorporating risk utilizes the technical baseline, the schedule baseline, and GAO best practice methodologies. The results of the cost risk analysis are used to develop confidence levels for each program element's baseline. Program executives determine the specific confidence level to be used in the resource baseline chart of the BMDS Accountability Report.

For most BMDS program elements, risk is traded with affordability so that there is an equally likely chance of either a cost underrun or overrun. For test execution, a higher probability of success is chosen for the confidence level. Recently, affordability initiatives resulted in contracts for IRBM, MIDAESS, THAAD, and DSC that were awarded at prices below the 50% cost estimate confidence level, indicating that the confidence measures may be conservative.

While MDA manages costs for all line entries on the resource baseline, the Agency measures performance using the metrics shown in the unit cost table for each resource baseline chart. MDA metrics measure cost performance three distinct ways. MDA uses Program Acquisition Unit Cost (PAUC) and Average Procurement Unit Cost (APUC) for programs that produce countable interceptors, sensors, launch systems, or fire control systems. The Agency uses Program Acquisition Cost (PAC) for programs that do not produce countable units. For Targets and Countermeasures, MDA uses Nonrecurring Cost (NRC) and Average Unit Cost (AUC). The Targets program is using a building block approach with core components in SRBM, MRBM, IRBM and common components. Targets are assembled from these components to meet test requirements. The IRBM class can also be configured into an ICBM class with the addition of an extended range booster. For SRBM, MRBM and IRBM, the AUC is calculated as the ratio of recurring costs for the booster stack and all up round integration for those targets delivered within the FYDP divided by the number of targets delivered within the FYDP. For AOs and RVs, the AUC for a common component includes the cost of that particular common component delivered within the FYDP divided by the quantity of that common component delivered within the FYDP.

PAUC is a ratio of acquisition cost to number of units. The numerator of the ratio is the total program acquisition costs defined as the sum of the Development (Research Development, Test and Evaluation (RDT&E) Appropriation), Production and Deployment (Procurement Appropriation), and Military Construction (MILCON Appropriation) costs. The denominator of

[1] Cost baselines for targets are treated differently because of uncertainty about the quantity of targets needed for testing beyond the FYDP period. As a result, "to complete" costs are not included in cost baselines for targets.

the ratio is the total number of operationally configured units produced for testing, qualification, and operations.

APUC is a ratio of the procurement cost to number of units. The two business rules for reporting APUC, depending on whether RDT&E or Procurement funding is used to acquire units produced for operations, are:

- If Procurement Appropriations funding is used to deliver operational units, APUC is the ratio of Procurement costs divided by the number of Procurement funded units. Test and qualification units are included only if Procurement funds are used to acquire those units. If a program has used both RDT&E and Procurement appropriations to purchase operationally configured units, only those units purchased with the Procurement Appropriation will be used to compute APUC.
- For some MDA programs, MDA is authorized to deliver operational capability using only RDT&E funding. For these instances, APUC is calculated by a ratio of the RDT&E funded cost estimate for delivery of the operational units divided hy the quantity of operational units.

PAC is the sum of Development (RDT&E Appropriation), Production and Deployment (Procurement Appropriation), and Military Construction (MILCON Appropriation) costs.

For MDA Targets and Countermeasures, the baselines are represented as NRC and AUC. MDA uses these metrics for targets because targets are modified to meet specific threat representations and are consumed in testing. The use of Procurement funds is inappropriate for acquiring targets. NRC includes the cost to design and develop a target configuration. AUC is the sum of manufacturing costs for targets using RDT&E funding divided by the number of targets delivered. NRC is provided for each target configuration that is in development during FY 2012 - 2017. AUC is provided for each target configuration and includes units delivered during FY 2012 - 2017.

Appendix D: Acronyms

A	
A3	Arrow-3
AA	Aegis Ashore
AACTV	Aegis Ashore Control Test Vehicle
AAFTM	Aegis Ashore Flight Test Mission
AAMDC	Army Air Missile Defense Command
AAW	Anti-Air Warfare
ABIR	Airborne Infra-Red
ABP	Airborne Processor
ABS	American Bureau of Shipping
ACL	Achievable Capabilities List
ACS	Attitude Control System
ACWP	Actual Cost of Work Performed
ADSI	Air Defense System Integrator
AFB	Air Force Base
ALO	Aegis Light Off
AMD	Air and Missile Defense
AMDI	Air and Missile Defense Integration
AN/TPY-2	Army Navy/Transportable Radar Surveillance – Model 2
AOR	Area of Responsibility
APUC	Average Procurement Unit Cost
ARAV	Aegis Readiness Assessment Vehicle
ASB	Acquisition Strategy Board
AST	Arrow System Test
ATEC	Army Test and Evaluation Center
ATRC	Aegis Training and Readiness Center
AUC	Average Unit Cost
AUR	All Up Round
AWS	AEGIS Weapon System
B	
BAR	BMDS Accountability Report
BCWP	Budgeted Cost of Work Performed
BCWS	Budgeted Cost of Work Scheduled
BETD	Best Estimate Test Date
BLD	Build
BLOS	Beyond Line of Sight
BMC	Battle Management Center
BMD	Ballistic Missile Defense
BMDS	Ballistic Missile Defense System
BOA	BMDS Overhead Persistent Infrared Architecture
BOD	Board of Directors
BSC	Battery Support System
BSFO	Blue Sparrow Fly-Out

BSP	BMD Signal Processor
BVT	Booster Vehicle Test
BY	Base Year
C	
C2BMC	Command and Control, Battle Management and Communications
C4	Command, Control, Communications, and Computers
CAAT	Contingency Analysis and Activation Team
CAPE	Cost Assessment and Program Evaluation
CAR	Capability Assessment Report
CARD	Cost Analysis Requirement Description
CCC	Core Completion Contract
CCLS	Consolidated Contractor Logistics Support
CD	Capability Delivery
CDR	Critical Design Review
CDS	Common Display System
CDU	Cobra Dane Upgrade
CEC	Critical Engagement Condition
CE I	Capability Enhanced I
CE II	Capability Enhanced II
CENTCOM	U.S. Central Command
CERT	Certification
CFE	Contractor Furnished Equipment
CG	Guided Missile Cruiser (U.S. Navy)
CLS	Contractor Logistics Support
CM	Countermeasure
CMAV	Continuous Maintenance Availability
CNIP	C2BMC Network Interface Processor
CNT	Control Navigation Test
COCOM	Combatant Commander
CONOPS	Concept of Operations
COPS	Constellation Operations
CP	Computer Program
CPAF	Cost Plus Award Fee
CPAP	Construction Plans and Profiles
CPD	Capability Production Document
CPIF	Cost Plus Incentive Fee
CPR	Cost Performance Report
CPS	Capability Planning Specification
CR	Capability Release
CS	Combat System
CSEDS	Combat System Engineering Development Site
CSSQT	Combat System Ships Qualification Trials
CTL	Critical Task List
CTTO	Concurrent Test, Training, and Operations
CTV	Control Test Vehicle
CV	Cost Variance

CX	Common X-band Radar Software
CY	Calendar Year
D	
DA	Defended Area
DACS	Divert and Attitude Control System
DBR	Developmental Baseline Review
DCMA	Defense Contract Management Agency
DDG	Guided Missile Destroyer (U.S. Navy)
DDM	Development Decision Memorandum
DDR	Designated Defended Region
DoD	Department of Defense
DOT&E	Director, Operational Test and Evaluation
DRS	DRS Technologies
DSWS	David's Sling Weapon System
DT	Developmental Test
DTC	Developmental Test Command
DTDP	Developmental Test Design Plan
DVT	Design Verification Test
E	
EAC	Estimate at Completion
EC2BMC	Enhanced C2BMC
ECD	Early Capability Delivery
ECL	Equipment Component List
ECP	Engineering Change Proposal
EDM	Engineering Design Module
EICO	Element Integration & Check Out
EKP	EC2BMC Knowledge Point
EKV	Exoatmospheric Kill Vehicle
E-LRALT	Extended Long Range Air Launch Target
EMD	Engineering Manufacturing Development
EME	Empirical Measurement Event
eMRBM	Extended Medium Range Ballistic Missile
EMRL	Engineering Manufacturing Readiness Level
ER4	Engineering Release – 4
(b)(3):10	(b)(3):10 USC §130
ESL	External Sensors Laboratory
ET	Embedded Test
ETEDDS	End-to-End Distributed Development System
ET&E	Engineering Test & Evaluation
EUCOM	U.S. European Command
EVM	Earned Value Management
F	
FAU/OP	Fleet Avionics Upgrade/Obsolescence Program
FBM	Forward-Based Mode
FBX-T	Forward-Based X-Band (Radar) Transportable

FCE	Fast CAAT East
FDE	Force Developmental Experimentation
FFP	Firm Fixed Price
FGA	Fort Greely, Alaska
FMA	Foreign Military Acquisition
FMC	Full Mission Capability
FOC	Full Operational Capability
FOUO	For Official Use Only
FPA	Focal Plan Array
FPI	Fixed Price Incentives
FQT	Functional / Formal Qualification Test
FS	Fixed Site
FTF	Flexible Target Family
FTG	Flight Test Ground Based Interceptor
FTM	Flight Test Standard Missile
FTR	Flight Test Round
FTT	Flight Test THAAD Interceptor
FTX	Flight Test Other
FUF	Fire Unit Fielding
FY	Fiscal Year
FYDP	Future Years Defense Program
G	
GAO	Government Accountability Office
GBI	Ground-Based Interceptor
GCCS	Global Command and Control System
GCN	GMD Communications Network
GCS	Ground Control Station
GEP	Ground Entry Point
GEM	Global Engagement Manager
GFC	GMD Fire Control
GFE	Government Furnished Equipment
GGT	Government Ground Test (Environment)
GMD	Ground-based Midcourse Defense
GOT	Guidance Object Track
GROW	Generic Rest of World
GS	Ground Systems
GSE	Ground Support Equipment
GT	Ground Test
GTD	Ground Test Distributed
GTI	Ground Test Integrated
GTX	Ground Test Other
H	
H&T	Humidity & Temperature
HC	Hazard Classification
HEL	High Energy Laser
HN	Host Nation

HPLUS	High Performance Liquid Upper Stage
HTK	Hit to Kill
HTV	Hypersonic Technology Vehicle
HWIL	Hardware-In-The-Loop
I	
IAMD	Integrated Air and Missile Defense
IAW	In Accordance With
IBMP	Integrated Ballistic Missile Picture
IBR	Integrated Baseline Review
ICA	Industrial Capabilities Assessment
ICBM	Intercontinental Ballistic Missile
ICE	Independent Cost Estimate
IDIQ	Indefinite Delivery Indefinite Quantity
IDT	In-Flight Interceptor Communication System Data Terminal
IFICS	In-Flight Interceptor Communications System
ILS	Integrated Logistics Support
IM	Insensitive Munitions
IMDO	Israel Missile Defense Organization
IMS	Integrated Master Schedule
IMTP	Integrated Master Test Plan
INCO	Installation & Checkout
INSURV	Board of Inspection Survey
IOC	Initial Operational Capability
IPD	Initial Production Decision
IPR	In-Progress Review
IRBM	Intermediate-Range Ballistic Missile
IRPT	Independent Readiness Review Team
ISG	Integration and Synchronization Group
ISTC	Integrated System Test Capability
ISTS	Integrated Simulation Tactical Software
I&T	Integration & Test/Installation & Test
J	
JC	Juniper Cobra
JCM	Joint Capabilities Mix
JFTM	Joint Flight Test Standard Missile
JRE	Joint Range Extension
JROC	Joint Requirements Oversight Council
K	
KP	Knowledge Point
KTR	Contractor
KW	Kinetic Warhead
L	
LAD	Launch Area Denied
LCCE	Life Cycle Cost Estimate
LDACS	Lightweight DACS

LKE	USS LAKE ERIE
LOE	Level of Effort
LoR	Launch on Remote
LRALT	Long-Range Air Launch Target
LRBM	Long-Range Ballistic Missile
LRS&T	Long-Range Surveillance and Track
LUT	Limited User Test
LV-2	Launch Vehicle – 2
M	
MBRV	Modified Ballistic Missile Re-Entry Vehicle
MDA	Missile Defense Agency
MDEB	Missile Defense Executive Board
MDR	Mission Design Review
MEIT	Multi-Element Integration Testing
MILCON	Military Construction
MMR	Multi-Mission Radar
MMSP	Multi-Mission Signal Processor
MRBM	Medium-Range Ballistic Missile
MRL	Manufacturing Readiness Level
MRT	Medium Range Target
MSC	Military Sealift Command
N	
N/A	Not Applicable
NDAA	National Defense Authorization Act
NET	New Equipment Training
NJ	New Jersey
NORTHCOM	U.S. Northern Command
NMP	Navy Manning Plan
NSCC	Naval Systems Computer Center
NRC	Non-Reoccurring Cost
O	
O&M	Operations and Maintenance
O&S	Operations and Support /Operations and Sustainment
OAR	Operational Assessment Report
OFSC	Operational Forces Standing Committee
OPIR	Overhead Persistent Infra-Red
OSD	Office of Secretary of Defense
OSM	Objective Sensor Model
OSM-S	Operational Sensor Model – SBX
OT	Operational Test
OTA	Operational Test Agency/Other Transaction Authority
OTRR	Operational Test Readiness Review
P	
PA	Performance Assessment / Project Agreement
PAA	Phase Adaptive Approach
PAC	Program Acquisition Cost

PACOM	U.S. Pacific Command
PAUC	Program Acquisition Unit Cost
PB	President's Budget
PCB	Program Change Board
PCIL	Peripheral Component Interface Laboratory
PCL	Prioritized Capabilities List
PCNT	Propulsion Control Navigation Test
PDR	Preliminary Design Review
PDRR	Preliminary Design Readiness Review
PER	Program Execution Review
P_{ES}	Probability of Engagement Success
P.L.	Public Law
PM	Program Manager
PMB	Performance Management Baseline
PMC	Partial Mission Capability
PMRF	Pacific Mission Capability
POM	Program Objective Memorandum
PoP	Period of Performance
PPU	Prime Power Unit
PRR	Program Requirements Review
PRRA	Production Readiness Risk Assessment
P_K	Probability of Kill
P_{SSK}	Probability of Single Shot Kill
PSSR	Pre-Ship Readiness Review
PTS	Permit to Ship
PTSS	Precision Tracking Space System
Q	
Q	Quarter
QA	Quality Assurance
QTY	Quantity
R	
RDT&E	Research, Development, Test and Evaluation
Refurb	Refurbishment
RFI	Request for Information
RFP	Request for Proposals
RR	Readiness Review
RSC	Raid Size Capacity
RT	Real Time
RV	Reentry Vehicle
RVS	Raytheon Vision System
S	
SA	Situational Awareness
SAMP	Single Acquisition Management Plan
SATCOM	Satellite Communications
SBIRS	Space-Based Infra-Red System
SBX	Sea Based X-Band (Radar)

SCG	Security Classification Guide
SCR	System Concept Review
SDR	System Design Review
SHF	Super High Frequency
SIPRNet	Secure Internet Protocol Router Network
SIL	System Integration Laboratory
SIT	System Integration Test
SM-3	Standard Missile - 3
SRA	Selected Restricted Availability (Ship Availability)
SRALT	Short-Range Air Launch Target
SRBM	Short-Range Ballistic Missile
SRR	System Requirements Review/Ship Readiness Review
SS	Summary Screen
SSLA	System Security Level - A
SSSTRP	Software System Safety Technical Review Panel
STRATCOM	U.S. Strategic Command
SV	Schedule Variance
SW	Software
SY	Shipyard
SYS	System
T	
T2	Transition and Transfer
T&E	Test and Evaluation
TA	Technical Assessment
TB	Test Bed(s)
TBD	To Be Determined
TC	Targets and Countermeasures
TCD	Technology Capability Declaration
TDACS	Throttleable DACS
TDP	Technical Data Package
TDU	TDACS Demonstration Unit
TEWA	Threat Evaluation and Weapons Assignment
TFCC	THAAD Fire Control and Communications
THAAD	Terminal High Altitude Area Defense
TM	Terminal Mode/Technical Manual
TOG	Technical Objectives and Goals
TOM	Target Object Map
TOO	Target of Opportunity
TPR	Technical Product Review
(b)(3):10	(b)(3):10 USC §130
TSRM	Third Stage Rocket Motor
TY	Then Year
U	
UEWR	Upgraded Early Warning Radar
UHF/EHF	Ultra High Frequency/Extremely High Frequency
uRVA	Unshrouded Re-entry Vehicle Adapter

USCENTCOM	U.S. Central Command
USCG	U.S. Coast Guard
USD AT&L	Under Secretary of Defense for Acquisition, Technology and Logistics
USEUCOM	U.S. European Command
USFT	U.S. Flight Test, Reference U.S.-Israeli Caravan Test
USNORTHCOM	U.S. Northern Command
USPACOM	U.S. Pacific Command
USSTRATCOM	U.S. Strategic Command
V	
VA	Virginia
VAC	Variance at Completion
VAFB	Vandenberg Air Force Base
VLS	Vertical Launching System
V&V	Verification and Validation
VV&A	Verification, Validation, and Accreditation
W	
WF	Warfighter
WIP	Warfighter Involvement Process
WSESRB	Weapon System Explosive Safety Review Board
WSMR	White Sands Missile Range
X	
XBR	X-Band Radar

Appendix E: Multiple Sources for Security Classification

- Aegis Security Classification Guide (SCG) Change 1 with Administrative Change
- Air & Missile Defense Prioritized Capabilities List 2009; March 18, 2010
- Air & Missile Defense Prioritized Capabilities List for Program Objective Memorandum 2014; October 11, 2011
- Arrow Deployability Program
- Arrow System Improvement Program to Include Change 1
- BMD Target Systems with Change 1
- BMDS AN/TPY-2 Radar Forward Based Mode (FBM) SCG
- BMDS SCG MDA
- Ground Based Midcourse Defense (GMD) SCG to Include Change 1
- Terminal High Altitude Area Defense (THAAD) SCG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