Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force

Date: March 2014

Appropriation/Budget Activity

R-1 Program Element (Number/Name)

3600: Research, Development, Test & Evaluation, Air Force I BA 5: System

PE 0605931F I B-2 Defensive Management System

Development & Demonstration (SDD)

COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO <sup>#</sup>	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	132.164	249.685	257.500	98.768	-	98.768	227.668	187.127	113.737	125.381	40.000	1,432.030
653844: <i>B-2 DMS</i>	132.164	249.685	257.500	98.768	-	98.768	227.668	187.127	113.737	125.381	40.000	1,432.030
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

MDAP/MAIS Code: 431

#### Note

Air Force

## A. Mission Description and Budget Item Justification

The Defensive Management System Modernization (DMS-M) program is the #1 modification program for the B-2. The DMS-M program enhances the B-2 direct attack capability by addressing emerging and future 21st century threats and robust modern Integrated Air Defense Systems. By leveraging modern "state-of-the-art" electronic warfare antennae, processors, controllers and displays, B-2 aircrews will realize unprecedented situational battlespace awareness and dynamic, real-time threat avoidance in the most complex radio frequency emitter environments. The inherent increased sensitivity of the modernized DMS over the legacy system, with increased processing power, will build a battlespace picture that could be shared with joint force platforms by on-board communication systems. The current B-2 DMS was designed in the 1980s and has not received any upgrades to date. Also, many components of the legacy DMS are not supportable and will severely impact aircraft availability without significant investment in reliability and maintainability upgrades.

During development, the engineering baseline will be finalized and four production representative kits will be procured to support integrated development/operational test and a pre-Milestone C Operational Assessment, as well as B-2 Nuclear Certification testing. After completion of the Milestone C decision in 2019, Low Rate Initial Production will begin in early FY20. After a successful Operational Test and Evaluation, the Full Rate Production decision will occur in 2021. FY19 aircraft modification funds will be used to procure long lead components. Life of type buys may be implemented, when appropriate, to address diminishing manufacturing sources and material shortages for affected components and subassemblies to protect the planned production program by mitigating unplanned part redesign and requalification risks.

BA5 - This program is in Budget Activity 5, System Development and Demonstration (SDD) because it has passed Milestone B approval and is conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production.

PE 0605931F: B-2 Defensive Management System

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<sup>&</sup>lt;sup>#</sup> The FY 2015 OCO Request will be submitted at a later date.

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force

Date: March 2014

Appropriation/Budget Activity

3600: Research, Development, Test & Evaluation, Air Force I BA 5: System

Development & Demonstration (SDD)

R-1 Program Element (Number/Name)

PE 0605931F I B-2 Defensive Management System

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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	281.056	303.500	259.400	-	259.400
Current President's Budget	249.685	257.500	98.768	-	98.768
Total Adjustments	-31.371	-46.000	-160.632	-	-160.632
<ul> <li>Congressional General Reductions</li> </ul>	-0.371	-			
<ul> <li>Congressional Directed Reductions</li> </ul>	-	-46.000			
<ul> <li>Congressional Rescissions</li> </ul>	-	-			
<ul> <li>Congressional Adds</li> </ul>	-	-			
<ul> <li>Congressional Directed Transfers</li> </ul>	-	-			
<ul> <li>Reprogrammings</li> </ul>	-	-			
SBIR/STTR Transfer	-7.910	-			
Other Adjustments	-23.090	-	-160.632	-	-160.632

## **Change Summary Explanation**

FY13 reduction of -\$23.090M due to Sequestration.

FY14 reduction of -\$46.000M due to RAI savings.

FY15 reductions due to higher Air Force priorities.

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
Title: B-2 Defensive Management System Modernization (DMS-M) Tech Development Ph 1	6.323	-	-
<b>Description:</b> DMS Modernization program develops improved aircrew situational awareness through replacement of passive antennas, receiver/processors, and display processors. DMS-M also addresses critical system shortfalls, and improves legacy DMS component repair issues.			
FY 2013 Accomplishments: Completed delivery and install of CEESIM and long-lead developmental hardware supporting TD Phase 2 and EMD.			
Title: B-2 Defensive Management System Modernization (DMS-M) Tech Development Ph 2	243.362	257.500	98.768
<b>Description:</b> DMS Modernization program develops improved aircrew situational awareness through replacement of passive antennas, receiver/processors, and display processors. DMS-M also addresses critical system shortfalls, and improves legacy DMS component repair issues.			
FY 2013 Accomplishments:			

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force

Date: March 2014

Appropriation/Budget Activity

3600: Research, Development, Test & Evaluation, Air Force I BA 5: System

Development & Demonstration (SDD)

R-1 Program Element (Number/Name)

PE 0605931F I B-2 Defensive Management System

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
Continued DMS Modernization Technology Development leading to Preliminary Design Review in FY14 a and Milestone B decision in FY15.			
FY 2014 Plans: Conduct Preliminary Design Review and continue preparation for a Milestone B decision in FY-2015 to enter Engineering and Manufacturing Development.			
FY 2015 Plans: Complete DMS Modernization Technology Development. Conduct Milestone B decision.			
Accomplishments/Planned Programs Subtotals	249.685	257.500	98.768

# D. Other Program Funding Summary (\$ in Millions)

	- '	·	FY 2015	FY 2015	FY 2015					<b>Cost To</b>	
<u>Line Item</u>	FY 2013	FY 2014	<b>Base</b>	OCO	<u>Total</u>	FY 2016	FY 2017	FY 2018	FY 2019	Complete	<b>Total Cost</b>
APAF: BA05: Line Item #B2DMS0	-	-	-	-	-	-	-	-	76.476	701.800	781.456
Mod: B-2 DMS Mod of Acft											
APAF: BA05: Line Item #B2DMS0	-	-	-	-	-	-	-	-	3.180	-	-
In: B-2 DMS Initial Spares											

#### Remarks

Air Force

# E. Acquisition Strategy

Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor (Northrop Grumman) who will perform subsystem and component competitions where appropriate, use of cost plus incentive fee (CPIF) development contracts, and the combination of developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and differences in fielded configurations. The government will encourage the prime contractor to compete susbsystems and key components to reduce cost and risk.

#### F. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

PE 0605931F: B-2 Defensive Management System

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force

R-1 Program Element (Number/Name)

Date: March 2014

Appropriation/Budget Activity 3600 / 5

PE 0605931F I B-2 Defensive Management 653844 I B-2 DMS

94.754

Project (Number/Name)

94.754

604.368 1,315.864

System

Product Developme	Product Development (\$ in Millions)			FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To	Total Cost	Target Value of Contract
Air Vehicle - Technology Development Ph1	SS/CPIF	Various : ,	121.010	6.323	Nov 2012	-		-		-		-	-	127.333	-
Air Vehicle - Technology Development Ph 2	SS/CPIF	Various : ,	8.602	234.071	Oct 2012	246.736	Dec 2013	94.754	Jan 2015	-		94.754	-	584.163	-
Air Vehicle - Engineering and Manufacturing	SS/CPIF	Various : ,	0.000	-		-		-		-		-	604.368	604.368	TBD

246.736

240.394

129.612

#### Remarks

Development (EMD)

Northrop-Grumman, El Segundo, CA is the prime contractor and integrator.

Subtotal

Major subsystem vendors are:

Electronic Support Measures: BAE, Nashua NH

Advanced Graphics Processor: Lockheed-Martin, Owego, NY
Band 1 - 3 antennas: Randtron, Menlo Park CA
Band 4 antenna: Ball Aerospace, Westminster, CO

Support (\$ in Million	Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	_	_		_		_		_		_	_	_	_

Test and Evaluation	est and Evaluation (\$ in Millions)			FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Test	PO	AFFTC:,	0.322	0.917	Oct 2012	1.985	Oct 2013	0.895	Oct 2014	-		0.895	54.678	58.797	TBD
		Subtotal	0.322	0.917		1.985		0.895		-		0.895	54.678	58.797	-

PE 0605931F: *B-2 Defensive Management System* Air Force

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force	Date: March 2014		
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605931F / B-2 Defensive Management		umber/Name)
	System	0000477	- 2 DIVIG

Management Service	es (\$ in M	illions)		FY 2	2013	FY 2	2014	FY 2 Ba			2015 CO	FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
PMA	Various	Various : ,	2.230	8.374	Oct 2012	8.779	Oct 2013	3.119	Oct 2014	-		3.119	34.867	57.369	TBD
		Subtotal	2.230	8.374		8.779		3.119		-		3.119	34.867	57.369	-
															Target

	Prior	<b>-</b> V <b>2010</b>	<b>-</b> V 0044	FY 2015	FY 2015	FY 2015	Cost To	Total	Target Value of
	Years	FY 2013	FY 2014	Base	oco	Total	Complete	Cost	Contract
Project Cost Totals	132.164	249.685	257.500	98.768	-	98.768	693.913	1,432.030	-

#### Remarks

Northrop-Grumman, the prime contractor for the B-2 weapon system, is the integrator and major contractor for B-2 DMS activities.

PE 0605931F: *B-2 Defensive Management System* Air Force

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (N	umber/Name)
3600 / 5	PE 0605931F I B-2 Defensive Management	653844 <i>I B</i>	3-2 DMS
	System		

# B-2 FY-2015 PB DMS-M Detailed Schedule

Defensive Management System - Modernization

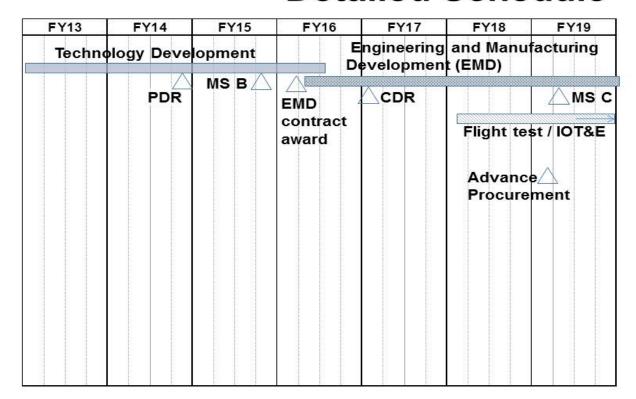


Exhibit R-4A, RDT&E Schedule Details: PB 2015 Air Force			Date: March 2014
Appropriation/Budget Activity 3600 / 5	R-1 Program Element (Number/Name) PE 0605931F / B-2 Defensive Management	, , ,	umber/Name)
00070	System	00004471	, L DIVIG

# Schedule Details

	Start		End	
Events	Quarter	Year	Quarter	Year
DMS-M Preliminary Design Review	4	2014	4	2014
DMS-M Milestone B Decision	4	2015	4	2015
DMS-M EMD Contract Award	1	2016	2	2016
DMS-M Critical Design Review	1	2017	1	2017
DMS-M Milestone C	2	2019	2	2019