

# UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	373.500	201.688	35.970	100.194	-	100.194	128.597	59.742	26.681	32.344	Continuing	Continuing
675345: B-2 Modernization	0.000	21.751	21.759	85.858	-	85.858	112.681	45.932	12.636	18.046	Continuing	Continuing
676021: BASELINE SUPPORT	0.000	9.523	7.875	14.336	-	14.336	15.916	13.810	14.045	14.298	Continuing	Continuing
676022: EHF SATCOM and Computer	373.500	123.987	6.336	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	503.823
676023: Defensive Management System	0.000	46.427	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
MDAP/MAIS Code(s): 224,431												
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
Note												
Funding prior to FY14, and the estimate to complete after FY14 for B-2 ACAT 1 programs as follows:												
The ACAT 1C B-2 Extremely High Frequency Satellite Communication (EHF SATCOM) and Computers Increment 1: Prior years funding: \$373M; estimate to complete: Not applicable. Program begins procurement in FY12; there are no remaining RDT&E efforts after FY13.												
A. Mission Description and Budget Item Justification												
The B-2 Spirit is the world's most advanced long-range strike asset. The unique combination of range, precision, payload, and ability to operate in anti-access area denial environments allow the B-2 to identify, locate, target, and destroy the highest value enemy targets. The B-2 can, with necessary upgrades, accomplish its mission regardless of location, return to base safely, and permit freedom of movement for follow-on forces, including other long range strike platforms. An array of planned RDT&E projects are necessary to preserve a strategic advantage against 21st century threats as well as increase flexibility, lethality, and survivability of this national asset tasked across a broad spectrum of tactical and national strategic objectives. B-2 will achieve these objectives by adapting mature technologies/ systems in the fleet to rapidly deliver affordable and relevant combat capability, leveraging other Department of Defense investments and programs utilizing innovative acquisition strategies.												
The B-2 has a projected service life through 2058. To ensure the fleet can accomplish its nuclear and conventional mission in highly defended and anti-access environments, periodic modernization efforts must be undertaken to upgrade combat capability as well as improve the viability, supportability, and survivability of the weapon system.												
Recent and ongoing investments in avionics, structures, communications, and weapons upgrades keep the B-2 viable in the immediate future.												

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<p>Specific development efforts are managed in four projects:</p> <p>675345 B-2 Modernization 676021 Baseline Support 676022 EHF SATCOM and Computer 676023 Defensive Management System Modernization (FY12 only)</p> <p>Current development efforts include:</p> <p>Alternative communication solutions such as Common Very Low Frequency Receiver and Adaptable Communications Suite, Massive Ordnance Penetrator integration, Flexible Strike Phase 1 -- formerly known as Stores Management Operational Flight Program re-host -- which will re-host the stores management processor software, Low Observable Signature and Supportability Modifications, Aircraft Supportability Modifications, and Training System Upgrades;</p> <p>Flight test aircraft upgrades and base of operations support, Advanced Low Detection Data Link studies, and Mission Planning System improvements as well as B-2 acquisition planning;</p> <p>Extremely High Frequency Satellite Communications (SATCOM) and Computers Increments 1 and 2;</p> <p>Defensive Management System Modernization (FY12 only - beginning in FY13, managed under Program Element 0605931F, project 653844).</p> <p>In addition to on-going projects, the B-2 also performs studies for possible or projected projects such as integration of Joint Air-to-Surface Standoff missile-Extended Range, and other weapons integration, avionics, communication, aircraft and engine improvements. The long range vision for the aircraft anticipates that future improvements may also include such capabilities as Moving Target Kill or Non-Traditional Surveillance and Reconnaissance combat. Studies may explore: the development of a Universal Armament Interface, integrating multi-platform advanced data links with high bandwidth satellite communication links, Link-16 Center Instrument Display/In-Flight Replanner, integration of the Global Positioning System M-Code hardware and software necessary for modernization of Air Traffic Management communications/navigation/ surveillance systems, and enhancement of the Mode 5/S Identification Friend or Foe system with Automatic Dependence Surveillance-Broadcast capability mandated by US and European military and civil aviation agencies to improve situational awareness of controlled and contested airspaces. Improvements may be required on the B-2 data/voice/video recorders to comply with Air Force Safety Board mandates to provide specific flight and aircraft data, frequency of update, data precision, and recording duration that do not exist in the B-2 recorders today, which may drive studies. Finally, other studies will look at possible enhancements of current radar modes, high resolution improvements to the synthetic aperture radar, and improved information fusion required to gather, analyze, and communicate enemy movements and combat capabilities to friendly follow-on forces, the National Command Authority, and other operation centers via the Global Information Grid.</p> <p>This program is in Budget Activity 7, Operational System Development, because this budget activity includes developmental efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.</p>		

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0101127F: <i>B-2 SQUADRONS</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>
Previous President's Budget	280.319	35.970	116.144	-	116.144
Current President's Budget	201.688	35.970	100.194	-	100.194
Total Adjustments	-78.631	0.000	-15.950	-	-15.950
• Congressional General Reductions	-	0.000			
• Congressional Directed Reductions	-	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	-	0.000			
• Congressional Directed Transfers	-	0.000			
• Reprogrammings	-71.000	0.000			
• SBIR/STTR Transfer	-7.631	0.000			
• Other Adjustments	0.000	0.000	-15.950	-	-15.950

**Change Summary Explanation**

FY2012 realigned -\$71.000M to support Hard and Deeply Buried Target, and -\$7.631M for SBIR.

FY2014 change: -\$15.950 reduction rephases the B-2 Common Very Low Frequency (VLF) Receiver development effort.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS				PROJECT 675345: B-2 Modernization			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
675345: B-2 Modernization	0.000	21.751	21.759	85.858	-	85.858	112.681	45.932	12.636	18.046	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
The B-2 is currently undergoing modernization of avionics/communications systems, engines, armament systems, low observable components, core training system components, aircraft supportability improvements, support equipment development, as well as studying future Integrated Strike Warfare and Advanced Tactical Data Link integration requirements.												
B-2 communications upgrades integrate new communications equipment or improve the performance of already fielded systems. The Common Very Low Frequency (VLF) Receiver effort develops and integrates a receive-only VLF receiver and antenna subsystem to provide a secure, survivable strategic communication capability for the B-2. The CVR receiver will be adaptable for use by other Department of Defense platforms.												
In addition to the funded CVR project, B-2 will also perform studies to explore other potential communications improvements which are not currently funded, such as: upgrades to the Adaptable Communications Suite non-integrated communications system; Link-16 Center Instrument Display/In-Flight Replanner; Mode 5/S ADS-B Identification Friend or Foe with Automatic Dependence Surveillance-Broadcast; and Integrated Strike Warfare Airborne Network distributed modeling and simulation network.												
B-2 armament upgrades integrate new and/or advanced weapons on the B-2 to address a wider array of target sets, to include moving targets, and hardened, deeply buried targets. The Flexible Strike Phase 1 program -- formerly known as Stores Management Operational Flight Program re-host -- will recombine and rehost the current B-2 stores management software onto a new integrated processor, providing the processing and bandwidth to handle advanced digital weapons such as B61-12 or Long Range Stand Off (LRSO).												
B-2 will also perform studies for potential future efforts, including: a Flexible Strike Phase 2 to enable multiple weapons carriage capabilities; and integration of additional weapons such as the extended range variant of the Joint Air to Surface Standoff Missile (JASSM-ER), laser JDAM or upgrades or replacements to weapons testing or weapons loading equipment.												
Additional B-2 modernization efforts will be accomplished in four main areas:												
(1) Low observable improvements;												
(2) B-2 training systems;												

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<p>(3) Aircraft supportability modifications; and (4) Peculiar Support Equipment (PSE).</p> <p>Details are provided below:</p> <p>Low Observable Signature and Supportability Modification (LOSSM) projects decrease low observable (LO) maintenance, increase aircraft availability, and maintain and improve the combat-ready LO signature for the B-2 fleet ensuring survivable combat operations. LOSSM projects improve materials, structures, and diagnostic tools necessary to evaluate LO materials and systems in the B-2 fleet. LOSSM structure improvement projects include, but are not limited to, advanced high frequency materials placement, windshield bounce patch and tape improvements, composite plies, advanced signature reduction, and radome improvements. Material improvements include, but are not limited to, tailpipe and inlet coatings, pre-cured gap fillers, and other advanced LO materials development. Diagnostic tool efforts include, but are not limited to, improved radar frequency diagnostics, signature diagnostic system database upgrades, Tier One Material Inspection System improvements, Portable Laser Removal Tool development, Integrated Collections And Reporting System, Mobile Diagnostics Laboratory, Ground Air Radar System development, and other low observable special test equipment and information systems upgrades.</p> <p>The B-2 Training System upgrades include updates to training device hardware and components, simulation software, courseware and academic materials, instructional system design architectures, engineering drawings, and system documentation that is not driven by a funded aircraft modification. Improvements include, but are not limited to, threat systems parametrics and order of battle information, radar display emulation improvements, improved aero fidelity of key pilot procedures, courseware improvements, and upgrades to display systems, subsystems, and simulation and computational processors. Other upgrades include, but are not limited to, conventional and nuclear guided weapons delivery training, expanded crypto keyfill capability in simulators, upgraded capability to train weapons as powered up upon completion of initial conditions, as well as upgrades to the electronic combat environment threat database tools to include threat laydown, threat parametrics, and Integrated Air Defense System. Upgrades also include the current Defensive Management System (DMS) simulation, improved DMS alternative/ emergency procedures courseware, and upgraded Mission Generation System, Suppressor tool, and simulation and computational processors as necessary. Enhancements are provided to the B-2 family of trainers to include the Weapon System Trainers, Mission Trainer, Cockpit Procedures Trainers, Computerized Maintenance Training System, Weapon System Training Aids, Weapons Load Trainer, Crew Escape System Maintenance Trainer, Flight Control System Trainer, instructor-operator station, and Training System Support Center.</p> <p>The Aircraft Supportability Modifications (ASM) improve the reliability, maintainability, supportability, and availability of the B-2 fleet through its 2058 service life. Studies and planning will examine B-2 Common Processor, Proximity Sensor Logic Unit, and future improvements to the Generator Control Unit, Rudder Access Panel and Elevon Drain Hole upgrades, Cockpit Voice and Flight Data Recorder, Radomes, Audio Control Display Unit, Center Instrument Display improvements, Aft Deck Doublers, Center Instrument Display connection to the aircraft Digital Video Recorder, Multi-function Information Distribution System Power Transfer, Global Positioning System Splitter Cable, Airborne Integrated Terminal Crypto, and upgraded cryptological functionality of all B-2 communications systems as necessary. Engine improvements to be looked at include F118 engine Service Life Extension Program, Extended Mission Oil Tank, and the Next Generation Engine Core upgrade. Stage 1 and 3 engine fan blade improvements will reduce engine changes while increasing aircraft availability and reducing maintenance costs. Engine upgrades are necessary to maintain commonality with the F110 engine core and reduce maintenance and repair costs of divergent engine configurations.</p>		

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Peculiar Support Equipment (PSE) development activities include design, development, test, and procurement of new peculiar support equipment, to include but not limited to, special test equipment for newly emerging test and support requirements of legacy B-2 capabilities and/or functionality. Development of new peculiar support equipment will support test and sustainment activities at the B-2 Weapon System Support Center Ground Test Facility, Program Depot Maintenance facility, Test Range facilities, and Air Force Global Strike Command operating locations.				
This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
Title: Common Very Low Frequency Receiver (CVR) Description: Provides secure, survivable, receive-only strategic communication for B-2.  FY 2013 Plans: Begin Common VLF Receiver development effort, conduct Milestone B decision, and enter Engineering and Manufacturing Development (EMD) phase.  FY 2014 Plans: Continue Engineering and Manufacturing Development efforts.		0.000	10.118	24.768
Title: Flexible Strike Description: Recombine the separate Stores Management Operationa Flight Program (SMOFP) software and rehost the software onto the more capable processors made available by the B-2 EHF Increment 1 program  FY 2012 Accomplishments: Began SMOFP rehost development efforts  FY 2013 Plans: continue risk reduction efforts previously initiated  FY 2014 Plans: Conduct Milestone B		16.616	9.041	57.850
Title: B-2 Modernization Projects Description: B-2 Modernization includes, but is not limited to, Low Observable Signature and Supportability Modifications, Massive Ordnance Penetrator with accuracy improvements, Joint Air-to-Surface Standoff Missile-Extended Range integration, Training System core upgrades, armament tester improvements, Adaptable Communication Suite improvements, Link 16 Center		4.786	1.737	1.672

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>
Instrument Display/Inflight Replanner, Integrated Strike Warfare/Advanced Tactical Data Link modeling and simulation, Mode S/5 Identification Friend or Foe with Automatic Dependence Surveillance- Broadcast capability improvements, Aircraft Supportability Modifications, Moving Target Kill and Non-Traditional Surveillance and Reconnaissance capability improvements, information fusion upgrades, Special Test Equipment development, and weapons integration efforts.			
<b>FY 2012 Accomplishments:</b> Continued development of on-going LOSSM improvements, ISW/ATDL, Training System core upgrades, ACS, MOP Enhancements, other weapon integration efforts, risk reduction efforts and studies for very low frequency communication, and other airframe, avionics improvements. Completed PSLU and ISW/ATDL.			
<b>FY 2013 Plans:</b> Continue development of on-going Low Observable Signature and Supportability Modifications, Training System core upgrades, Adaptable Communications Suite improvements, Massive Ordnance Penetrator integration, Aircraft Supportability Modifications, and other weapons integration improvements.			
<b>FY 2014 Plans:</b> Continue development of on-going Low Observable Signature and Supportability Modifications, Training System core upgrades, Adaptable Communications Suite improvements, Massive Ordnance Penetrator integration, Aircraft Supportability Modifications, and other weapons integration improvements.			
<b>Title:</b> B-2 Modernization PMA <b>Description:</b> B-2 Modernization PMA		0.349	0.863
<b>FY 2012 Accomplishments:</b> B-2 Modernization PMA			
<b>FY 2013 Plans:</b> B-2 Modernization PMA			
<b>FY 2014 Plans:</b> B-2 Modernization PMA			
<b>Accomplishments/Planned Programs Subtotals</b>		21.751	21.759

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APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS			PROJECT 675345: B-2 Modernization				
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• APAF: BA05: B00200: B-2 Modification Funding	30.184	23.871	5.731		5.731	8.190	40.094	36.603	27.488	Continuing	Continuing
• APAF: BA05: B00200: B-2 Training Support Modification, PE 0809731F	0.000	4.038	5.006		5.006	6.477	6.630	7.776	7.916	Continuing	Continuing
• APAF: BA07: B00200: B-2 Post Production Support, B-2A ICS: PE 0101127F	0.000	0.000	0.000		0.000	0.000	0.000	0.010	0.133	Continuing	Continuing
• APAF: BA06: B00200: B-2 Squadrons, A/C Initial Spares	8.809	0.000	0.000		0.000	0.000	0.000	2.070	2.613	Continuing	Continuing
• APAF:BA07: B00200: B-2 Depot Activation, PE0101127F	0.000	0.000	0.000		0.000	0.000	3.505	0.000	0.000	Continuing	Continuing
Remarks											
In FY12, funding for Baseline Support transferred from project 675345 to project 676021, still within PE 0101127F, B-2 Squadrons.											
In FY12, funding for Extremely High Frequency (EHF) SATCOM and Computers transferred from project 675345 to project 676022, still within PE 0101127F, B-2 Squadrons.											
In FY12, funding for DMS upgrade transferred from project 675345 to project 676023, still within PE 0101127F, B-2 Squadrons.											
D. Acquisition Strategy											
Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor (Northrop Grumman), employ the program office as the system integrator when practical, leverage mature technology and systems development investments by other Department of Defense organizations, encouraging prime contractor competition of subsystems and key components to reduce risk and cost, use of cost plus incentive fee (CPIF) development contracts, and combine developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and differences in fielded configurations.											
E. 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.											



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Vehicle	Various	Various:Various,	0.000	21.323	Oct 2011	20.726	Oct 2012	78.985	Oct 2013	-		78.985	Continuing	Continuing	
Aircrew Training	Various	Various:Various,	0.000	0.000		0.000		2.160	Dec 2013	-		2.160	Continuing	Continuing	
Mission Planning	Various	Various:Various,	0.000	0.000		0.000		2.860	Jan 2014	-		2.860	Continuing	Continuing	
Subtotal			0.000	21.323		20.726		84.005		0.000		84.005			
Remarks Northrop-Grumman is the prime contractor and serves as integrator and hence main contractor for many (ie "Various"), but not all, B-2 modernization efforts.															
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Other Government Costs	Various	Various:Various,	0.000	0.079	Oct 2011	0.170	Oct 2012	0.175	Oct 2013	-		0.175	Continuing	Continuing	
Subtotal			0.000	0.079		0.170		0.175		0.000		0.175			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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:,	0.000	0.000		0.000		0.110	Oct 2013	-		0.110	Continuing	Continuing	
Subtotal			0.000	0.000		0.000		0.110		0.000		0.110			
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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:,	0.000	0.349	Oct 2011	0.863	Oct 2012	1.568	Oct 2013	-		1.568	Continuing	Continuing	TBD
Subtotal			0.000	0.349		0.863		1.568		0.000		1.568			

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	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	21.751		21.759		85.858		0.000		85.858			

Remarks

Award dates listed are the first incremental funding opportunity associated with each cost category.

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force

DATE: April 2013

**APPROPRIATION/BUDGET ACTIVITY**

3600: Research, Development, Test & Evaluation, Air Force  
BA 7: Operational Systems Development

**R-1 ITEM NOMENCLATURE**

PE 0101127F: B-2 SQUADRONS

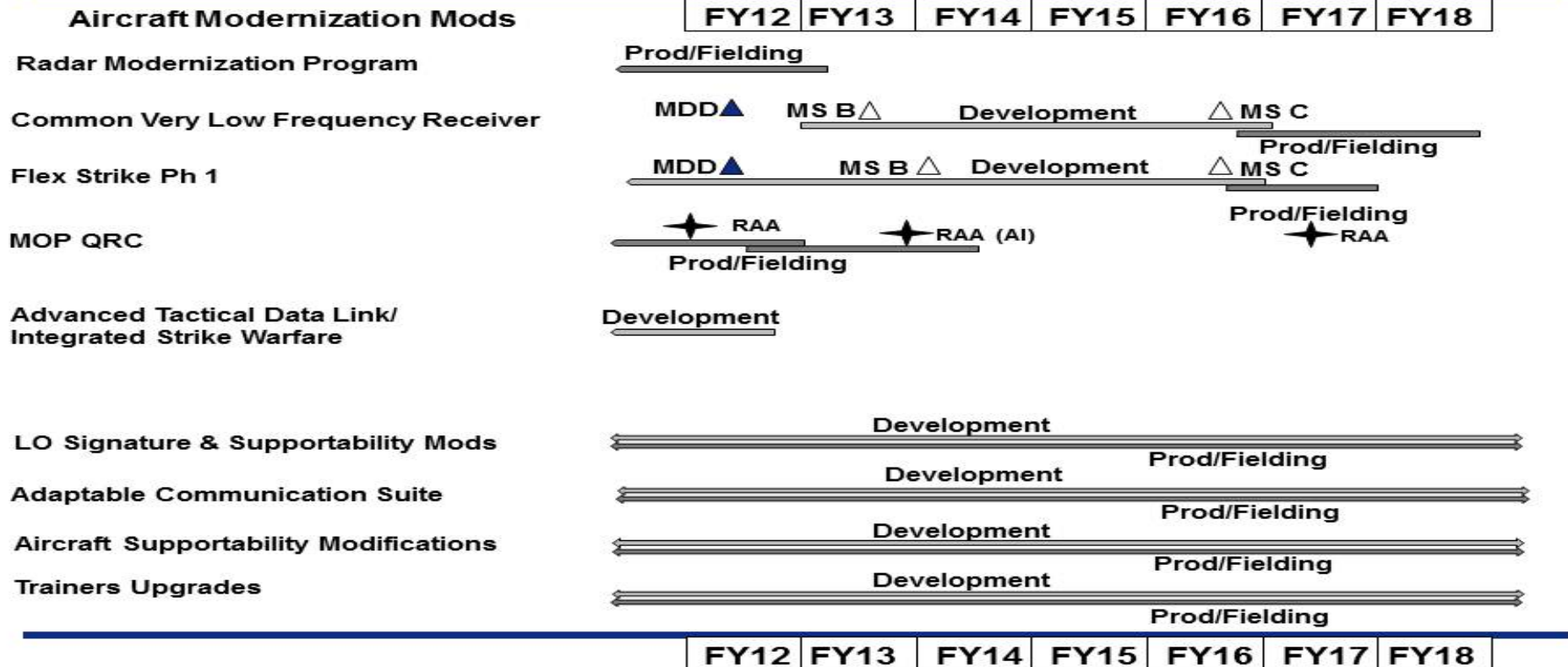
**PROJECT**

675345: B-2 Modernization



**U.S. AIR FORCE**

# B-2 FY14 PB Modernization Detailed Schedule



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Air Force			<b>DATE:</b> April 2013
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## Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Radar Modernization Program Full Rate Production Installs complete	2	2012	2	2012
Completion of MOP QRC Flight/Weapons Tests	1	2013	1	2013
MOP QRC UCA Award/Definitization	3	2012	1	2013
MOP QRC Flight Qualification	2	2013	3	2013
MOP QRC Installations	3	2013	2	2014
MOP QRC RAA	4	2013	4	2013
Flexible Strike Ph 1 MDD	3	2012	3	2012
Flexible Strike Ph 1 Contract Award	4	2012	4	2012
Flexible Strike Ph 1 Repts Maturation Contract Award	2	2013	2	2013
Flexible Strike Ph 1 Preliminary Design Review	1	2014	1	2014
Flexible Strike Ph 1 Milestone B	1	2014	1	2014
Flexible Strike Ph 1 EMD Contract Award	2	2014	2	2014
Flexible Strike Ph 1 Critical Design Review	4	2014	4	2014
Flexible Strike Ph 1 Milestone C	2	2016	2	2016
Flexible Strike Ph 1 Production Contract	3	2016	2	2018
Flexible Strike Ph 1 Required Assets Available	2	2017	2	2017
Common Very Low Frequency MDD	2	2012	2	2012
Common Very Low Frequency Receiver Milestone B	3	2013	3	2013
Common Very Low Frequency Receiver EMD Contract Award	3	2013	3	2013
Common Very Low Frequency Receiver Preliminary Design Review	4	2014	4	2014
Common Very Low Frequency Critical Design Review	1	2015	1	2015
Common Very Low Frequency Milestone C	3	2016	3	2016

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		<b>Start</b>		<b>End</b>
<b>Events</b>		<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>
Common Very Low Frequency Production Contract Award		4	2016	4
Common Very Low Frequency Required Assets Available		1	2018	1

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS				PROJECT 676021: BASELINE SUPPORT			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
676021: BASELINE SUPPORT	0.000	9.523	7.875	14.336	-	14.336	15.916	13.810	14.045	14.298	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
Baseline Support maintains and upgrades the B-2 unique flight test aircraft as well as hardware/software and test equipment to support developmental systems integration and flight test, reducing the need for additional operational aircraft and accelerating deployment of advanced operational capabilities to the warfighter. Baseline Support also ensures the Mission Planning System keeps pace with aircraft modifications and improves the mission planning core system. Baseline Support provides for other B-2 unique government costs and includes assorted studies of aircraft performance and cost trades as well as acquisition planning activities, up to and including proposal preparation, for future capabilities.												
This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.												
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2012	FY 2013	FY 2014
Title: Baseline Support Acquisition Planning										0.901	0.711	0.832
Description: Baseline Support provides for other B-2 unique government costs and includes acquisition planning activities for future capabilities, long range planning, studies, and program integration activities.												
FY 2012 Accomplishments: Continue Baseline Support activities including acquisition planning for future capabilities, Training System core support, long range planning, studies, and program integration activities.												
FY 2013 Plans: Continue Baseline Support activities including acquisition planning for future capabilities, long range planning, studies, and program integration activities.												
FY 2014 Plans: Continue Baseline Support activities including acquisition planning for future capabilities, long range planning, studies, and program integration activities.												
Title: Baseline Support Flight Test										6.361	5.507	10.463

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS	PROJECT 676021: BASELINE SUPPORT		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
<p><b>Description:</b> Baseline Support Flight Test maintains and upgrades the B-2 unique flight test aircraft as well as hardware/software and test equipment, to support developmental systems integration and flight test, reducing the need for additional operational aircraft and accelerating deployment of advanced operational capabilities to the warfighter.</p> <p><b>FY 2012 Accomplishments:</b> Continue B-2 Flight Test activities, maintaining the B-2 unique flight test aircraft as well as obtaining, modifying, and operating a flying test bed and developmental hardware/software and test equipment, to support developmental systems integration and flight test.</p> <p><b>FY 2013 Plans:</b> Continue B-2 Flight Test activities, maintaining and upgrading the B-2 unique flight test aircraft as well as hardware/software and test equipment, to support developmental systems integration and flight test.</p> <p><b>FY 2014 Plans:</b> Continue B-2 Flight Test activities, maintaining and upgrading the B-2 unique flight test aircraft as well as hardware/software and test equipment, to support developmental systems integration and flight test.</p>				
<p><b>Title:</b> Baseline Support Mission Planning</p> <p><b>Description:</b> Baseline Support Mission Planning System improvements ensure the mission planning system keeps pace with aircraft modifications and improves mission planning core systems.</p> <p><b>FY 2012 Accomplishments:</b> Continue B-2 Mission Planning activities, keeping pace with aircraft modifications and improving mission planning core systems.</p> <p><b>FY 2013 Plans:</b> Continue B-2 Mission Planning activities, keeping pace with aircraft modifications and improving mission planning core systems.</p> <p><b>FY 2014 Plans:</b> Continue B-2 Mission Planning activities, keeping pace with aircraft modifications and improving mission planning core systems, to include beginning the transition from the current AFMSS mission planning to JMPS (Joint Mission Planning System).</p>		1.895	1.436	2.695
<p><b>Title:</b> Baseline Support PMA</p> <p><b>Description:</b> Baseline Support PMA</p> <p><b>FY 2012 Accomplishments:</b></p>		0.366	0.221	0.346

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Air Force		<b>DATE:</b> April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0101127F: <i>B-2 SQUADRONS</i>	<b>PROJECT</b> 676021: <i>BASELINE SUPPORT</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>
Baseline Support PMA			
<b>FY 2013 Plans:</b> Baseline Support PMA			
<b>FY 2014 Plans:</b> Baseline Support PMA			
<b>Accomplishments/Planned Programs Subtotals</b>		9.523	7.875
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A			
<b>Remarks</b>			
<b>D. Acquisition Strategy</b> Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor (Northrop Grumman); use of cost plus award fee/ incentive fee (CPAF/IF) 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.			
<b>E. Performance Metrics</b> 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.			



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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2014 Air Force</b>												<b>DATE:</b> April 2013			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development						<b>R-1 ITEM NOMENCLATURE</b> PE 0101127F: B-2 SQUADRONS						<b>PROJECT</b> 676021: BASELINE SUPPORT			
<b>Product Development (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Mission Planning	Various	Various:Various,	0.000	1.705	Jan 2012	1.231	Jan 2013	2.490	Jan 2014	-		2.490	Continuing	Continuing	TBD
<b>Subtotal</b>			0.000	1.705		1.231		2.490		0.000		2.490			
<b>Support (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Other Government Costs	Various	Various:Various,	0.000	5.778	Oct 2011	4.925	Oct 2012	7.990	Oct 2013	-		7.990	Continuing	Continuing	TBD
<b>Subtotal</b>			0.000	5.778		4.925		7.990		0.000		7.990			
<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Government Test	PO	AFBTC:,	0.000	1.674	Oct 2011	1.498	Oct 2012	3.510	Oct 2013	-		3.510	Continuing	Continuing	TBD
<b>Subtotal</b>			0.000	1.674		1.498		3.510		0.000		3.510			
<b>Management Services (\$ in Millions)</b>				<b>FY 2012</b>		<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>All Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
PMA	Various	Various:,	0.000	0.366	Oct 2011	0.221	Oct 2012	0.346	Oct 2013	-		0.346	Continuing	Continuing	TBD
<b>Subtotal</b>			0.000	0.366		0.221		0.346		0.000		0.346			
			<b>All Prior Years</b>	<b>FY 2012</b>	<b>FY 2013</b>		<b>FY 2014 Base</b>		<b>FY 2014 OCO</b>		<b>FY 2014 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>	
<b>Project Cost Totals</b>			0.000	9.523		7.875		14.336		0.000		14.336			
<b>Remarks</b> Award dates listed are the first incremental funding opportunity associated with each cost category.															

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**Exhibit R-4, RDT&E Schedule Profile:** PB 2014 Air Force

**DATE:** April 2013

**APPROPRIATION/BUDGET ACTIVITY**

3600: *Research, Development, Test & Evaluation, Air Force*  
BA 7: *Operational Systems Development*

**R-1 ITEM NOMENCLATURE**

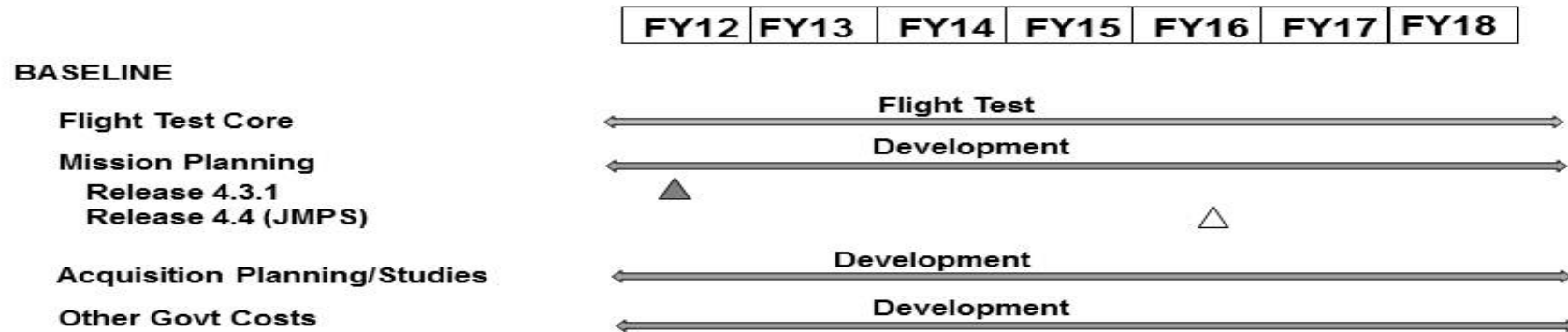
PE 0101127F: *B-2 SQUADRONS*

**PROJECT**

676021: *BASELINE SUPPORT*



## ***B-2 FY14 PB Baseline Detailed Schedule***



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Air Force			<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0101127F: <i>B-2 SQUADRONS</i>	<b>PROJECT</b> 676021: <i>BASELINE SUPPORT</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Mission Planning Release 4.3.1	2	2012	2	2012
Mission Planning Release 4.4	3	2016	3	2016
FY12 Flight Test Core Support Contract Award	1	2012	1	2012
FY13 Flight Test Core Support Contract Award	1	2013	1	2013
FY14 Flight Test Core Support Contract Award	1	2014	1	2014
FY15 Flight Test Core Support Contract Award	1	2015	1	2015
FY16 Flight Test Core Support Contract Award	1	2016	1	2016
FY17 Flight Test Core Support Contract Award	1	2017	1	2017
FY18 Flight Test Core Support Contract Award	1	2018	1	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS				PROJECT 676022: EHF SATCOM and Computer			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
676022: EHF SATCOM and Computer	373.500	123.987	6.336	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	503.823
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
<b>Note</b> EHF Increment 2 program funding was removed in the FY13 PB due to higher Air Force priorities. FY12 funding reduced by \$71M during FY12.												
<b>A. Mission Description and Budget Item Justification</b> The aging Ultra High Frequency (UHF) Military Satellite Communications system is being phased out and replaced by the Advanced Extremely High Frequency (AEHF) Satellite Communications (SATCOM) system. The B-2 Extremely High Frequency (EHF) SATCOM program supports the replacement of the present UHF Terminal Set with an EHF SATCOM system that will be compatible with the legacy MILSTAR I/II satellite constellation as well as the AEHF satellite constellation. The B-2 EHF SATCOM system is one element of a system-of-systems that includes the AEHF satellites, multiple platforms, and the Family of Advanced Beyond-line-of-site Terminals (FAB-T) or other equivalent terminals (if required). The B-2 EHF SATCOM upgrade is an incremental program.  EHF Increment 1 provides upgraded flight management control processors, increased data storage, rehosted Flight Management Operational Flight Program, and a high bandwidth data bus to prevent degradation of existing capabilities. Additionally, the Increment 1 Integrated Processing Unit and Disk Drive Unit architectures establish a high speed fiber optic structure network as well as maintain connectivity to legacy interfaces. EHF Increment 1 provides a processing growth path to future B-2 upgrades.  EHF Increment 2 ensures two-way, secure, survivable low probability of intercept/low probability of detection beyond-line-of-site communication in an anti-access area-denial environment. EHF Increment 2 integrates the FAB-T Government Furnished Equipment, or other equivalent terminals (if required), into the B-2 as well as develops and installs a low-observable antenna system consisting of arrays, antenna line replaceable units, and structural modifications for both power and cooling. EHF Increment 2 also implements B-2 unique terminal modifications, as required. This upgrade is critical to ensure the B-2 is compatible with the next generation communications satellite architecture, and provides uninterrupted, highly survivable, two-way communications for the command and control of the nation's strategic nuclear and conventional forces. Connectivity is mandatory to enable network centric enabled attack in an anti-access area denial environment.  EHF Increment 2 was defunded in the FY13 President's Budget. The Air Force will pursue the Common Very Low Frequency Receiver to satisfy the immediate user need date for B-2 survivable strategic communication. However, secure, survivable two-way strategic communication remains a requirement for the warfighter. To that end, EHF Increment 2 will continue maturing the array technology with residual FY12 funds.												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS	PROJECT 676022: EHF SATCOM and Computer		
This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.				
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
Title: B-2 EHF SATCOM and Computers Increment 1  Description: EHF Increment 1 provides upgraded flight management computer processors, increased data storage, rehosted Flight Management Operational Flight Program and a high bandwidth data bus. Additionally, the Increment 1 Integrated Processing Unit and Disk Drive Unit architectures establish a high speed fiber optic structure network as well as maintain connectivity to legacy interfaces. Increment 1 provides a processing growth path to future B-2 upgrades.  FY 2012 Accomplishments: Continue EHF SATCOM and Computers Increment 1 SDD, complete Initial Operational Test & Evaluation (IOT&E), and begin Low Rate Initial Production.  FY 2013 Plans: Complete EHF SATCOM and Computers Increment 1 System Development and Demonstration phase, complete IOT&E, and begin Full Rate Production.		44.147	6.149	0.000
Title: B-2 EHF SATCOM and Computers Increment 2  Description: EHF Increment 2 will integrate the Family of Advanced Beyond-line-of-sight Terminals as Government Furnished Equipment (or other equivalent terminals if required) into the B-2, as well as develop and install a low observable antenna system consisting of arrays, antenna line replaceable units, and structural modifications for power and cooling. This upgrade is critical to ensure the B-2 is compatible with the next generation communications satellite architecture and is essential in providing uninterrupted, two-way, highly survivable communications.  FY 2012 Accomplishments: Complete EHF SATCOM and Computer Increment 2 Component Advanced Design and risk reduction activities to achieve a successful system Preliminary Design Review (PDR).  FY 2013 Plans: EHF Increment 2 program is not funded in the FY 2013 budget.  FY 2014 Plans: EHF Increment 2 is not funded in the FY 2014 budget.		74.465	0.000	0.000
Title: B-2 EHF SATCOM and Computers PMA		5.375	0.187	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS				PROJECT 676022: EHF SATCOM and Computer				
B. Accomplishments/Planned Programs (\$ in Millions)										FY 2012	FY 2013	FY 2014
Description: B-2 EHF SATCOM and Computers PMA												
FY 2012 Accomplishments: B-2 EHF SATCOM and Computers PMA												
FY 2013 Plans: B-2 EHF SATCOM and Computers PMA												
Accomplishments/Planned Programs Subtotals										123.987	6.336	0.000
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost	
• APAF: BA05: B00200: EHF Inc I Kits and Installs B-2A: PE 0101127F, B-2 Squadrons, Modifications	50.320	53.816	7.469		7.469	8.268	0.000	0.000	0.000	Continuing	Continuing	
• APAF: BA07: B00200: EHF Inc 1 Interim Contract Support B-2A ICS: PE 0101127F, Post Prod Support	0.000	0.481	0.489		0.489	0.000	0.000	0.000	0.000	Continuing	Continuing	
• APAF: BA06: B00200: EHF Inc 1 Initial Spares PE 0101127F, B-2 Squadrons A/C Initial Spares	0.000	6.481	3.736		3.736	0.932	0.470	0.000	0.000	Continuing	Continuing	
• APAF:BA07: B00200: EHF Inc 1 Depot Activation PE 0101127F, B-2 Squadrons	0.000	2.703	0.192		0.192	0.196	0.000	0.000	0.000	Continuing	Continuing	
Remarks												
In FY12, funding for Extremely High Frequency (EHF) SATCOM and Computers transferred from project 675345 PE 0101127F, B-2 Squadrons to project 676022 PE 0101127F, B-2 Squadrons.												
EHF Increment 2 program funding was removed in the FY13 PB due to higher Air Force priorities.												
D. Acquisition Strategy												
Key elements of the overall acquisition strategy include: use of sole source contract with a prime/integrating contractor (Northrop Grumman), leverage mature technology and system development investments by other Department of Defense organizations, encourage prime contractor to conduct competitions at the												

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force		DATE: April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0101127F: <i>B-2 SQUADRONS</i>	<b>PROJECT</b> 676022: <i>EHF SATCOM and Computer</i>
subsystem/key component level to reduce risk and cost, use cost plus incentive fee (CPIF) development contracts, and combine developmental upgrades with software sustainment blocks to minimize the number of software releases, aircraft downtime, and differences in fielded configurations		
<b>E. Performance Metrics</b> 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.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development						R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS				PROJECT 676022: EHF SATCOM and Computer					
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Vehicle - EHF Increment 1	SS/CPAF	Northrop Grumman:Palmdale, CA	373.500	41.185	Oct 2011	5.735	Oct 2012	0.000		-		0.000	0.000	420.420	TBD
Air Vehicle - EHF Increment 2	SS/ Various	Various:Various,	0.000	74.465	Mar 2012	0.000		0.000		-		0.000	Continuing	Continuing	
Subtotal			373.500	115.650		5.735		0.000		0.000		0.000			
Remarks															
EHF Increment 1 is primarily delivery orders with Northrop-Grumman as the prime contractor and lead integrator. EHF Increment 2 is antenna maturation efforts primarily by delivery orders with Northrop-Grumman.															
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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:.,	0.000	2.962	Oct 2011	0.414	Oct 2012	0.000		-		0.000	Continuing	Continuing	TBD
Subtotal			0.000	2.962		0.414		0.000		0.000		0.000			
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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:.,	0.000	5.375	Oct 2011	0.187	Oct 2012	0.000		-		0.000	Continuing	Continuing	TBD
Subtotal			0.000	5.375		0.187		0.000		0.000		0.000			



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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force											DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS					PROJECT 676022: EHF SATCOM and Computer			
	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	373.500	123.987		6.336		0.000		0.000		0.000			

**Remarks**

Award dates listed are the first incremental funding opportunity associated with each cost category.

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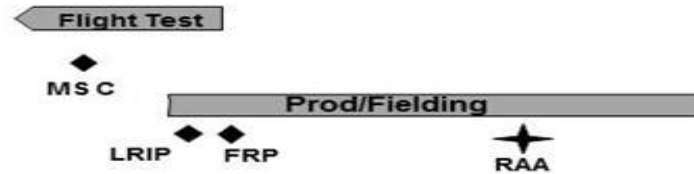
<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2014 Air Force		<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0101127F: <i>B-2 SQUADRONS</i>	<b>PROJECT</b> 676022: <i>EHF SATCOM and Computer</i>



## ***B-2 FY14 PB EHF Detailed Schedule***

FY12	FY13	FY14	FY15	FY16	FY17	FY18
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**EHF SATCOM And  
Computer Upgrade (Inc 1)**



**EHF SATCOM Inc 2**



**EHF SATCOM Inc 3**

**Not funded**

**Required Assets Available**

1

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Air Force			<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0101127F: <i>B-2 SQUADRONS</i>	<b>PROJECT</b> 676022: <i>EHF SATCOM and Computer</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
EHF Increment 1 Milestone C Decision	1	2012	1	2012
EHF Increment 1 LRIP Contract Award	4	2012	4	2012
EHF Increment 1 FRP Contract Award	1	2013	1	2013
EHF Increment 2 Array Preliminary Design Review	3	2013	3	2013
EHF Increment 2 Array Demonstration	3	2013	3	2013
EHF Increment 1 Required Assets Available	2	2015	2	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Air Force										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development					R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS				PROJECT 676023: Defensive Management System			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
676023: Defensive Management System	0.000	46.427	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
Note												
In FY13, funding transfered to PE 0605931F, project 653844.												
A. Mission Description and Budget Item Justification												
DMS-M is the #1 priority modification program in the B-2 program office. The B-2 Defensive Management System Modernization (DMS-M) program maintains the B-2 direct attack capability while addressing emerging 21st century threats. DMS-M will upgrade the Electronic Support Measures, antennas, and display processing units. Modernization of this system will resolve the #1 obsolescence issue in the B-2 fleet.												
The B-2 DMS-M will provide the Joint Force Commander and the B-2 fleet with advanced situational awareness, improved supportability, enhanced lethality, increased platform survivability, and networked battlespace awareness. The DMS-M upgrade will provide the following core capabilities for the B-2 and joint warfighting force:												
1) Ability to provide indication, type, and position of airborne and ground-based radio frequency (RF) threats with the situational awareness needed to avoid, engage, or negate threats,												
2) Improved RF threat information that can be reported to control agencies or inter-flight for improved situation/battlespace awareness,												
3) Ability to adequately control, process, and display incoming threat information to the aircrew and provide updated battle-space awareness, and												
4) Improved supportability and reduced operations and maintenance costs.												
This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.												
B. Accomplishments/Planned Programs (\$ in Millions)									FY 2012	FY 2013	FY 2014	
Title: B-2 Defensive Management System (DMS) Modernization Tech Development Ph 1									34.762	0.000	0.000	

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Air Force		<b>DATE:</b> April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0101127F: <i>B-2 SQUADRONS</i>	<b>PROJECT</b> 676023: <i>Defensive Management System</i>	
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2012</b>	<b>FY 2013</b>
<p><b>Description:</b> Refine DMS-M system concept. Begin avionics and Electronic Support Measures (ESM) hardware/software development. Conduct display processor and antenna competitions. Initiate rapid acquisition risk reduction efforts to accelerate program schedule.</p> <p><b>FY 2012 Accomplishments:</b> Accelerated avionics software prototyping. Completed display processor competition and awarded contract. Completed ESM, display processor, and airframe System Functional Reviews. Completed antenna vendor evaluations, to include prototype testing at the National Radar Cross Section Test Facility. Initiated purchase of Combat Electromagnetic Environment Simulator (CEESIM) and long-lead developmental hardware to support TD Phase 2 and EMD.</p> <p><b>FY 2013 Plans:</b> Transferred to PE 0605931F, project 653844.</p> <p><b>FY 2014 Plans:</b> Transferred to PE 0605931F, project 653844 in FY2013</p>			
<p><b>Title:</b> B-2 Defensive Management System (DMS) Modernization Ph 2</p> <p><b>Description:</b> Continue hardware and software development from Phase 1. Conduct Preliminary Design Review (PDR) and Milestone B review in FY14. Initiate required upgrades for Mission Planning System (MPS) software and Trainers (hardware &amp; software).</p> <p><b>FY 2012 Accomplishments:</b> Accelerated nuclear hardening assessment of key ESM and display hardware components.</p> <p><b>FY 2013 Plans:</b> Transferred to PE 0605931F, project 653844.</p> <p><b>FY 2014 Plans:</b> Transferred to PE 0605931F, project 653844.</p>		11.665	0.000
<b>Accomplishments/Planned Programs Subtotals</b>		46.427	0.000

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2014 Air Force										<b>DATE:</b> April 2013	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0101127F: <i>B-2 SQUADRONS</i>				<b>PROJECT</b> 676023: <i>Defensive Management System</i>			
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDT&E: BA07: PE 0101127F: <i>B-2 DMS-M Development,project</i> <i>675345</i>	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• RDT&E: BA05: PE 0605931F: <i>B-2 DMS-M Development</i>	0.000	281.056	303.500		303.500	259.400	168.300	115.000	89.700	50.700	1,272.656
• APAF: BA05: B00200: <i>B-2</i> <i>Modification Funding</i>	0.000	0.000	0.000		0.000	0.000	0.000	74.264	250.044	345.000	669.308
• APAF: BA06: B00200: <i>B-2 Initial</i> <i>Spares</i>	0.000	0.000	0.000		0.000	0.000	0.000	3.087	14.651	32.400	49.938
<b>Remarks</b>											
<b>D. Acquisition Strategy</b>											
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 award fee/ incentive fee (CPAF/IF) 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.											
<b>E. Performance Metrics</b>											
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.											

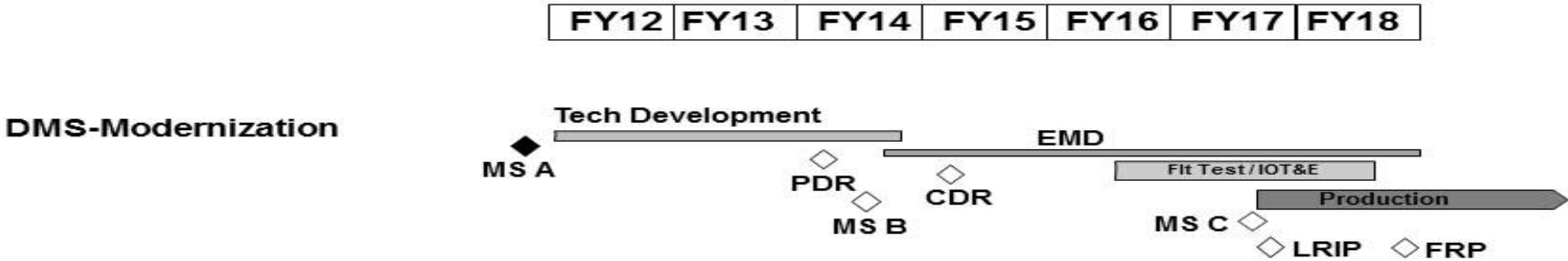
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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Air Force													DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE					PROJECT				
3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development						PE 0101127F: B-2 SQUADRONS					676023: Defensive Management System				
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Air Vehicle	Various	Various:Various,	0.000	46.427	Oct 2011	0.000		0.000		-		0.000	0.000	46.427	TBD
Subtotal			0.000	46.427		0.000		0.000		0.000		0.000	0.000	46.427	
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	46.427		0.000		0.000		0.000		0.000	0.000	46.427	
Remarks															
Funding for this effort transfers to PE 0605931F, project 653844 in FY13.															

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Air Force		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development	R-1 ITEM NOMENCLATURE PE 0101127F: B-2 SQUADRONS	PROJECT 676023: Defensive Management System



**B-2 FY14 PB DMS-M  
Detailed Schedule**





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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2014 Air Force			<b>DATE:</b> April 2013
<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0101127F: <i>B-2 SQUADRONS</i>	<b>PROJECT</b> 676023: <i>Defensive Management System</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
DMS-M Technology Development Ph 1 Contract Award	1	2012	1	2012
DMS-M Preliminary Design Review	1	2014	1	2014
DMS-M Technology Development Ph 2 Contract Award	1	2013	1	2013
DMS-M Milestone B Decision	3	2014	3	2014
DMS-M EMD Contract Award	3	2014	3	2014
DMS-M EMD Contract Period of Performance	3	2014	4	2018
DMS-M Critical Design Review	1	2015	1	2015
DMS-M Flight Test Program	3	2016	3	2018
DMS-M Milestone C	3	2017	3	2017
DMS-M Low Rate Initial Production Contract Award	4	2017	4	2017
DMS-M Full Rate Production Contract Award	4	2018	4	2018