

# UNCLASSIFIED

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 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0401318F / CV-22							
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	0.000	-	-	38.719	-	38.719	26.422	15.914	14.443	14.718	62.338	172.554
676033: CV-22 RDT&E POST PRODUCTION	0.000	-	-	38.719	-	38.719	26.422	15.914	14.443	14.718	62.338	172.554
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		
MDAP/MAIS Code: 212												
# The FY 2015 OCO Request will be submitted at a later date.												
Note												
In FY2015, PE 0401318F, Project 654103 CV-22, efforts were transferred to PE 0401318F, CV-22,Project 676033 CV-22 RDT&E Post Production in order to align efforts in Budget Activity 07, Operational System Development, since the CV-22 has been fielded.												
A. Mission Description and Budget Item Justification												
The CV-22 is a Special Operations Forces (SOF) variant of the 1st generation V-22 tilt-rotor, multi-mission aircraft. CV-22 RDT&E provides development, integration, testing and enhancement of critical capability to insert, extract, and re-supply special operation forces into politically or militarily denied areas. The CV-22 Block 10 configuration added terrain following radar, additional fuel tanks, additional radios, flare/chaff dispensers, radio frequency/infrared and defensive countermeasures, weapons, situational awareness improvements, and Communications, Navigation, Surveillance/Air Traffic Management (CNS/ATM) to the V-22 Block B aircraft. Block 20 development includes, but is not limited to, improved communications, situational awareness, software, and other requirements specified in the V-22 Block C/20 Capabilities Production Document. A future capabilities increment is following Block 20 to enhance defensive systems and self-deployment capabilities such as Distributed Ice Protection, improved engine performance, additional CNS/ATM and improved communication capabilities. CV-22 RDT&E also provides for a baseline CV-22 flight test aircraft for validation/verification of Block 20 and various software and reliability and maintainability mods. The V-22 Joint Program Office is developing improved operational safety, suitability, and effectiveness capabilities in incremental modifications. Ongoing planning and associated activities will take place to prevent diminishing manufacturing resources and obsolescence issues, as required.												
USSOCOM and USAF jointly fund development projects to meet operational safety, suitability, and effectiveness mission needs. This includes designing, prototyping, integrating, testing and fielding proposed solutions to emerging warfighter issues. USSOCOM funds the development, integration and testing of SOF unique mission capability, while USAF funds interoperability, basic air vehicle enhancements, integration of Air Force and Navy maintenance and information systems used with the V-22, support for operational testing, and CV-22 implementation and testing of MV-22 Block B and Block C changes. USSOCOM and USAF jointly fund correction of deficiencies and Block 20 development. Block 20 increments 1 and 3 are developed with USAF funds and increment 2 is developed with USSOCOM funds.												
This program is in Budget Activity 7, Operational Systems Development because this budget activity includes development efforts to upgrade systems that have been fielded. In FY2015, CV-22 is transitioning from BA05 Systems Development and Demonstation to BA07 Operational Systems Development.												

**UNCLASSIFIED**

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 7: Operational Systems Development		R-1 Program Element (Number/Name) PE 0401318F / CV-22				
B. Program Change Summary (\$ in Millions)		FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget		-	-	-	-	-
Current President's Budget		-	-	38.719	-	38.719
Total Adjustments		-	-	38.719	-	38.719
• Congressional General Reductions		-	-			
• Congressional Directed Reductions		-	-			
• Congressional Rescissions		-	-			
• Congressional Adds		-	-			
• Congressional Directed Transfers		-	-			
• Reprogrammings		-	-			
• SBIR/STTR Transfer		-	-			
• Other Adjustments		-	-	38.719	-	38.719
Change Summary Explanation						
The CV-22 RDT&E budget transitioned from BA05 System Development & Demonstration (SDD) to BA07 Operational Systems Development in FY2015.						
C. Accomplishments/Planned Programs (\$ in Millions)				FY 2013	FY 2014	FY 2015
Title: CV-22 Block 20 RDT&E				-	-	12.940
Description: Develop, test, and evaluate additional capabilities for the CV-22 aircraft. The V-22 Joint Program Office is developing improved operational safety, suitability, and effectiveness. Block 20 development includes, but is not limited to, improved communications, software, and other requirements specified in the V-22 Block C/20 Capabilities Production Document.						
FY 2013 Accomplishments: See BA05 Program Element 0401318F CV-22 for FY13 activities and funding.						
FY 2014 Plans: See BA05 Program Element 0401318F CV-22 for FY14 activities and funding.						
FY 2015 Plans: Conduct Functional Configuration Audit and second flight test for Beyond Line of Sight (BLOS).						
Title: Enhanced Self-Deployment Capabilities				-	-	3.900
Description: Future capabilities increment to enhance self-deployment capabilities such as Distributed Ice Protection, improved engine performance, area navigation and improved communication capabilities.						
FY 2013 Accomplishments:						

**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2015 Air Force		<b>Date:</b> March 2014		
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>		<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22		
<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>		<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
See BA05 Program Element 0401318F CV-22 for FY13 activities and funding.				
<b>FY 2014 Plans:</b> See BA05 Program Element 0401318F CV-22 for FY14 activities and funding.				
<b>FY 2015 Plans:</b> Conduct risk reduction and assessment of emerging and existing technologies.				
<b>Title:</b> Improved Inlet Solution (IIS) <b>Description:</b> Improved Inlet Solution (IIS) development to increase engine time on wing, resolve Air Force Special Operations Command #1 priority deficiency, and reduce Operations & Support cost.  <b>FY 2013 Accomplishments:</b> N/A <b>FY 2014 Plans:</b> See BA05 Program Element 0401318F CV-22 for FY14 activities and funding. <b>FY 2015 Plans:</b> Conduct Improved Inlet Solution Critical Design Review (CDR).		-	-	14.179
<b>Title:</b> Communication, Navigation, Surveillance / Air Traffic Management (CNS/ATM) <b>Description:</b> CNS/ATM enhancements will bring about improvements to current navigation and Identification Friend or Foe (IFF) systems that will bring the CV-22 into compliance with mandates for airspace interoperability. Improvements include Required Navigation Performance/aRea NAVigation (RNP/RNAV) and Automatic Dependent Surveillance-Broadcast (ADS-B) Out, which will allow capabilities such as Global Positioning System (GPS)-based non-precision approaches and direct point-to-point navigation.  <b>FY 2013 Accomplishments:</b> N/A <b>FY 2014 Plans:</b> N/A <b>FY 2015 Plans:</b> Conduct Crew Systems Design, Display Interface Documentation and SRR for RNAV(GPS).		-	-	7.700

**UNCLASSIFIED**

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 7: Operational Systems Development				R-1 Program Element (Number/Name) PE 0401318F / CV-22								
C. Accomplishments/Planned Programs (\$ in Millions)										FY 2013	FY 2014	FY 2015
Conduct System Requirements Review (SRR) for ADS-B Out.												
Accomplishments/Planned Programs Subtotals										-	-	38.719
D. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost	
• RDT&E: BA05: PE 0401318F: CV-22	19.741	46.705	-	-	-	-	-	-	-	-	415.035	
• RDT&E: BA07: PE 1160421BB: Special Operations, CV-22 Development	2.076	-	-	-	-	-	-	-	-	-	520.411	
• RDT&E: BA07: PE 1160403BB: Special Operations, Aviation Systems	-	2.817	0.182	-	0.182	-	-	-	-	-	2.999	
• Proc: BA02: Line Item #1000CV2200: CV-22 Modification	126.021	108.599	25.578	-	25.578	19.703	16.123	13.226	13.480	-	1,700.376	
• APAF: BA04: Line Item #V022A0: CV-22 (MYP)	290.286	285.998	-	-	-	-	-	-	-	-	4,229.529	
• APAF: BA05: Line Item #V02200: CV-22 Mods	21.625	19.555	74.874	-	74.874	70.370	72.671	73.999	75.386	178.710	692.660	
• APAF: BA07: B00100: CV-22 Post-Production Support	-	-	16.931	-	16.931	-	-	-	-	-	16.931	
• RDT&E: BA05: PE 0604262N: V-22A	44.294	43.084	61.249	-	61.249	58.893	59.944	53.793	53.596	41.000	9,409.230	
Remarks												
E. Acquisition Strategy												
The V-22 Joint Program Office (NAVAIRSYSCOM PMA-275) ensures that CV-22 changes are incorporated into the ongoing V-22 production line with minimal impact. The JPO is developing new capabilities for the V-22 in blocks. Block 0 and Block 10 have completed development, and Block 20 is currently underway. NAVAIRSYSCOM awarded a cost plus fixed fee contract with the prime contractor in Dec 2007 for Block 20 development and test. After Block 20 development and test, future development efforts beyond Block 20 will be conducted as pre-planned product improvements. For example, the jointly funded Improved Inlet Solution (IIS) effort is expected to significantly improve engine time on wing in an an austere environment. A cost plus fixed fee contract will be awarded for IIS by NAVAIRSYSCOM to the prime contractor in May 2014 with CV-22 RDT&E BA05 funds. In FY2015, the CV-22 RDT&E BA07 will continue this effort with incremental funding. Development												

**UNCLASSIFIED**

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Air Force		Date: March 2014
<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22	
activities for the V-22 program are performed by the prime contractor selected on a sole-source basis. Bell-Boeing is a strategic partnership between Bell Helicopter and Boeing Integrated Defense Systems. OSD re-designated the V-22 program from ACAT 1D to ACAT 1C on 24 Jul 2012.		
<b>F. 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.		

**UNCLASSIFIED**

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force												Date: March 2014			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0401318F / CV-22				Project (Number/Name) 676033 / CV-22 RDT&E POST PRODUCTION					
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 Complete	Total Cost	Target Value of Contract
Block 20 Development	SS/CPFF	Bell Boeing : Amarillo, TX	0.000	-		-		10.420	Dec 2014	-		10.420	-	10.420	161.014
Enhanced Self-deployment Capability	Various	Various : Various,	0.000	-		-		3.900	Mar 2015	-		3.900	71.152	75.052	-
Improved Inlet Solution	SS/CPFF	Bell Boeing : Various,	0.000	-		-		14.179	Dec 2014	-		14.179	34.515	48.694	-
CNS/ATM	SS/CPFF	Various : Various,	0.000	-		-		7.700	Jan 2015	-		7.700	6.120	13.820	-
Subtotal			0.000	-		-		36.199		-		36.199	111.787	147.986	-
Remarks															
Block 20 Development Target Value of Contract differs from total cost because most of the Block 20 development cost is shown in BA05 PE 0401318F. In addition, the Special Operations Forces (SOF) peculiar development efforts were funded by USSOCOM MFP-11 funding.															
Support (\$ 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
Subtotal			-	-		-		-		-		-	-	-	-
Test 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
Test & Evaluation Technical Support	MIPR	Various : Various,	0.000	-		-		2.420	Dec 2014	-		2.420	21.173	23.593	-
Subtotal			0.000	-		-		2.420		-		2.420	21.173	23.593	-

## UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Air Force												Date: March 2014			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0401318F / CV-22				Project (Number/Name) 676033 / CV-22 RDT&E POST PRODUCTION					
Management Services (\$ 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
PMA/Travel	Allot	AFLCMC/WIV : Patuxent River, MD	0.000	-		-		0.100	Nov 2014	-		0.100	0.875	0.975	-
Subtotal			0.000	-		-		0.100		-		0.100	0.875	0.975	-
			Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	-		-		38.719		-		38.719	133.835	172.554	-
Remarks															

**UNCLASSIFIED**

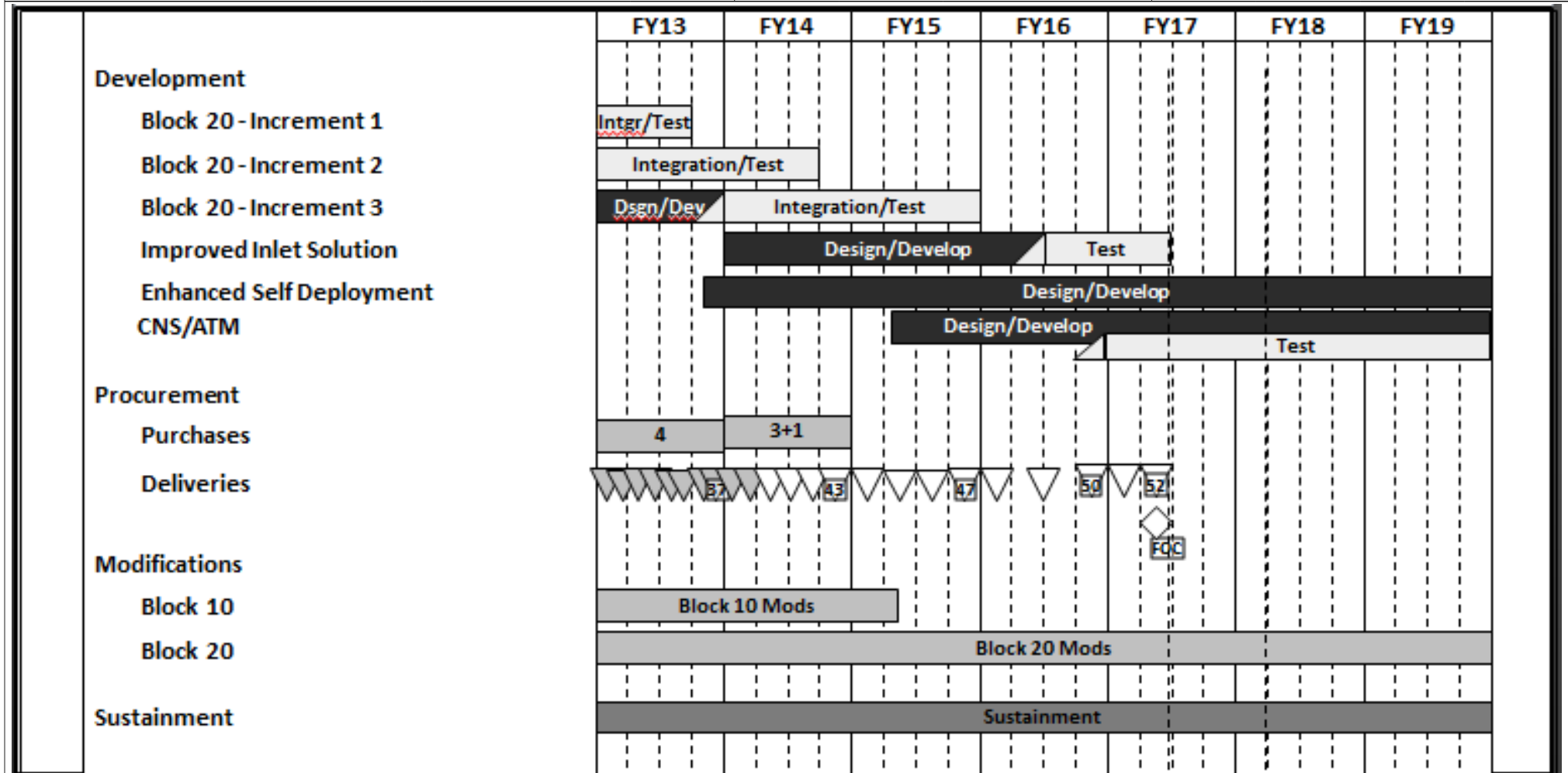
**Exhibit R-4, RDT&E Schedule Profile: PB 2015 Air Force**

**Date:** March 2014

**Appropriation/Budget Activity**  
3600 / 7

**R-1 Program Element (Number/Name)**  
PE 0401318F / CV-22

**Project (Number/Name)**  
676033 / CV-22 RDT&E POST  
PRODUCTION





**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2015 Air Force			<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 3600 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0401318F / CV-22	<b>Project (Number/Name)</b> 676033 / CV-22 RDT&E POST PRODUCTION	

**Schedule Details**

<b>Events</b>	<b>Start</b>		<b>End</b>	
	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>
Block 20 Increment 3 Development, Testing and Evaluation	1	2015	4	2015
-- Long range comm upgrades ground and flight test	3	2015	4	2015
Enhanced Self Deployment	1	2015	4	2019
-- Risk Reduction Analysis	1	2015	4	2019
Improved Inlet solution	1	2015	2	2017
-- IIS development and design reviews	1	2015	3	2016
-- IIS ground and flight test	2	2016	2	2017
CNS/ATM	2	2015	4	2019
-- RNP RNAV (GPS) Development and design reviews	2	2015	2	2019
-- RNP RNAV (GPS) ground and flight tests	2	2018	4	2019
-- ADS-B Out development and design reviews	3	2015	2	2017
-- ADS-B Out ground and flight tests	4	2016	1	2018