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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy										Date: March 2014		
Appropriation/Budget Activity 1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)					R-1 Program Element (Number/Name) PE 0604262N / V-22A							
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	8,993.370	44.294	43.084	61.249	-	61.249	58.893	59.944	53.793	53.596	41.000	9,409.223
1425: V-22	8,993.370	44.294	43.084	61.249	-	61.249	58.893	59.944	53.793	53.596	41.000	9,409.223
MDAP/MAIS Code: 212												
# The FY 2015 OCO Request will be submitted at a later date.												
A. Mission Description and Budget Item Justification												
The V-22 Osprey is an Acquisition Category IC Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Joint Service application. The V-22 program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the utility/rescue needs of the Navy, and the special operations needs of the Air Force and the United States Special Operations Command (USSOCOM). The V-22 is replacing the CH-46E and CH53A/D in the Marine Corps with the MV-22; will supplement the H-60 in the Navy with the MV-22; and replace the MH-53J and MH-53M as well as augment the C-130 in the Air Force and USSOCOM with the CV-22. The V-22 is capable of flying over 2,100 nautical miles, with a single refueling, giving the services the advantage of a Vertical/Short Take-off and Landing aircraft that can rapidly self-deploy to any location in the world. This program is funded under Engineering Manufacturing and Development for correction of deficiencies and includes Block A and Block B upgrades which encompassed engineering and manufacturing development of new end-items prior to the production incorporation decision as well as Block C suitability and effectiveness development upgrades. Capability Development Document interoperability requirements were addressed through a spiral upgrade acquisition strategy. It was the first spiral providing Key Enabling Department of Defense mandated open systems architecture upgrades for the mission computer hardware and software while simultaneously addressing required interoperability common avionics upgrades and current avionics obsolescence issues. Development efforts include Block C Upgrade, Mission System Upgrade, Mid-Wing Process Unit, ARC 210 Generation 5 Radio, Mission Computer Obsolescence Initiative, Ramp Mounted Weapon System, AAR-47 Hostile Fire Indicator, Time on Wing, Digital Interoperability, and Blue Force Tracker/Netted Weather. FY13 funds continued instrumentation of a test aircraft. FY14-FY15 will provide for additional Aircraft Mission Maneuvering Envelope Expansion, Velocity Not to Exceed Expansion, Digital Interoperability, and Time on Wing efforts such as Improved Inlet Solution. FY14-FY15 will also continue development efforts for the V-22 Integrated Aircraft Survivability Equipment (IASE) to include correcting deficiencies of the current Radar warning system, integration with an upgraded missile warning and active infrared countermeasure system, and providing integrated threat warning information on the aircraft main flight displays. Begin MV-22 Digital Interoperability efforts in FY15.												

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Appropriation/Budget Activity		R-1 Program Element (Number/Name)			
1319: Research, Development, Test & Evaluation, Navy / BA 5: System Development & Demonstration (SDD)		PE 0604262N / V-22A			
B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	54.412	43.084	69.816	-	69.816
Current President's Budget	44.294	43.084	61.249	-	61.249
Total Adjustments	-10.118	-	-8.567	-	-8.567
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.096	-			
• SBIR/STTR Transfer	-1.281	-			
• Program Adjustments	-	-	0.787	-	0.787
• Rate/Misc Adjustments	-	-	-9.354	-	-9.354
• Congressional General Reductions Adjustments	-1.741	-	-	-	-
• Congressional Directed Reductions Adjustments	-5.000	-	-	-	-
Change Summary Explanation					
Technical: Not applicable					
Schedule: Not applicable					
Cost: FY13 reduction reflects sequestration, congressional general reductions, and reductions for program execution.					

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy										Date: March 2014		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604262N / V-22A				Project (Number/Name) 1425 / V-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
1425: V-22	8,993.370	44.294	43.084	61.249	-	61.249	58.893	59.944	53.793	53.596	41.000	9,409.223
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		
# The FY 2015 OCO Request will be submitted at a later date.												
A. Mission Description and Budget Item Justification												
The V-22 Osprey is an Acquisition Category IC Joint Program led by the Department of the Navy for the purpose of developing, testing, evaluating, procuring and fielding a tilt rotor, vertical takeoff and landing aircraft for Joint Service application. The V-22 program is designed to provide an aircraft to meet the amphibious/vertical assault needs of the Marine Corps, the utility/rescue needs of the Navy, and the special operations needs of the Air Force and the United States Special Operations Command (USSOCOM). The V-22 is replacing the CH-46E and CH53A/D in the Marine Corps with the MV-22; will supplement the H-60 in the Navy with the MV-22; and replace the MH-53J and MH-53M as well as augment the C-130 in the Air Force and USSOCOM with the CV-22. The V-22 is capable of flying over 2,100 nautical miles, with a single refueling, giving the services the advantage of a Vertical/Short Take-off and Landing aircraft that can rapidly self-deploy to any location in the world. This program is funded under Engineering Manufacturing and Development for correction of deficiencies and includes Block A and Block B upgrades which encompassed engineering and manufacturing development of new end-items prior to the production incorporation decision as well as Block C suitability and effectiveness development upgrades. Capability Development Document interoperability requirements were addressed through a spiral upgrade acquisition strategy. It was the first spiral providing Key Enabling Department of Defense mandated open systems architecture upgrades for the mission computer hardware and software while simultaneously addressing required interoperability common avionics upgrades and current avionics obsolescence issues. Development efforts include Block C Upgrade, Mission System Upgrade, Mid-Wing Process Unit, ARC 210 Generation 5 Radio, Mission Computer Obsolescence Initiative, Ramp Mounted Weapon System, AAR-47 Hostile Fire Indicator, Time on Wing, Digital Interoperability, and Blue Force Tracker/Netted Weather. FY13 funds continued instrumentation of a test aircraft. FY14-FY15 will provide for additional Aircraft Mission Maneuvering Envelope Expansion, Velocity Not to Exceed Expansion, Digital Interoperability, and Time on Wing efforts such as Improved Inlet Solution. FY14-FY15 will also continue development efforts for the V-22 Integrated Aircraft Survivability Equipment (IASE) to include correcting deficiencies of the current Radar warning system, integration with an upgraded missile warning and active infrared countermeasure system, and providing integrated threat warning information on the aircraft main flight displays. Begin MV-22 Digital Interoperability efforts in FY15. Begin MV-22 Digital Interoperability efforts in FY15.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2013	FY 2014	FY 2015	
Title: Continued development of V-22									28.472	24.476	42.794	
									Articles: -	-	-	
FY 2013 Accomplishments:												
Continued MV-22 development efforts by Bell-Boeing. Rolls-Royce continued to provide engine support and development of MV-22 flight testing. Continued MV-22 software development efforts. Continued development in support of MV-22 Block upgrades. Continued engineering, logistics, flight test, flight test support and address correction of deficiencies. Continued												

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014		
Appropriation/Budget Activity 1319 / 5		R-1 Program Element (Number/Name) PE 0604262N / V-22A		Project (Number/Name) 1425 / V-22	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2013	FY 2014	FY 2015
contracted development efforts on test aircraft. Continued instrumentation of test aircraft. Reduction in funding was the result of cost savings incurred on Instrumented Test Aircraft FPIF contract which awarded in March 2012.					
FY 2014 Plans: Continue MV-22 development efforts by Bell-Boeing. Rolls-Royce will continue to provide engine support and development of MV-22 flight testing. Continue MV-22 software development/sustainment efforts. Continue development in support of MV-22 Block upgrades and Time on Wing efforts such as Improved Inlet Solution. Continue engineering, logistics, flight test, flight test support and address correction of deficiencies. Continue contracted development efforts on test aircraft.					
FY 2015 Plans: Continue MV-22 development efforts by Bell-Boeing. Rolls-Royce will continue to provide engine support and development of MV-22 flight testing. Continue MV-22 software development/sustainment efforts. Continue development in support of MV-22 Block upgrades and Time on Wing efforts such as Improved Inlet Solution. Continue engineering, logistics, flight test, flight test support and address correction of deficiencies. Continue contracted development efforts on test aircraft. Begin MV-22 Digital Interoperability efforts.					
Title: Continued support of V-22 development, test and evaluation program			15.822	18.608	18.455
Articles:			-	-	-
FY 2013 Accomplishments: Continued in-house field activity support of Integrated Test Team, Integrated Product Teams, engineering and logistics. Continued development in support of MV-22 Block Upgrades. Continued field development efforts on test aircraft. Provided Research & Development support in areas of Reliability and Maintainability data analysis, loads and dynamics, electromagnetic environmental effects, V-22 avionics, facilities management, structures, communications, etc. Provided engineering, logistics, flight test, flight test support, envelope expansion testing and correction of deficiencies as required in support of the Flight Test Program, Block C, Defensive Weapon System, and the overall V-22 development program. Initiated support of instrumentation of test aircraft. Conducted aero-performance rebaseline, Time on Wing and Mission Computer Obsolescence Initiative Testing. Expanded shipboard launch and recovery envelopes with additional dynamic interface testing. Conducted KPP sustainment testing of proprotor improvements and nacelle sail design. Continued support of instrumentation of test aircraft. Tested B 5.01 software suite. Conducted Joint and Allied Threat Awareness System testing. Conducted Aircraft Mission Maneuvering Envelope Expansion and Velocity Not to Exceed Expansion testing.					
FY 2014 Plans: Continue support of instrumentation of test aircraft. Conduct V-22 Integrated Aircraft Survivability Equipment (IASE) testing/ APR-39(D)v2 testing. Conduct Aircraft Time on Wing, Mission Maneuvering Envelope Expansion and Velocity Not to Exceed Expansion testing.					
FY 2015 Plans:					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2013	FY 2014	FY 2015
Continue support of instrumentation of test aircraft. Conduct V-22 IASE testing. Conduct Aircraft Time on Wing, Mission Maneuvering Envelope Expansion and Velocity Not to Exceed Expansion testing.												
Accomplishments/Planned Programs Subtotals										44.294	43.084	61.249
C. 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	
• APN 0164: V-22	1,486.280	1,391.086	1,532.920	-	1,532.920	1,496.086	1,446.944	429.539	439.793	7,231.205	36,844.040	
• APN 0590: V-22 Series	88.861	156.534	135.584	-	135.584	121.761	139.021	150.041	146.108	733.407	2,362.775	
• APN 0605: V-22 Initial Spares	2.602	10.729	-	-	-	4.799	2.265	-	-	145.364	953.476	
• RDTE BA04 0401318F: CV-22 USAF BA05	19.741	46.705	-	-	-	-	-	-	-	-	150.602	
• RDTE 1160421BB: CV-22 SOCOM	-	-	-	-	-	-	-	-	-	-	523.802	
• RDTE 1160403BB: CV-22 Special Operations, Aviation Systems	1.673	2.817	0.182	-	0.182	-	-	-	-	-	93.797	
• PDW 1000CV2200: CV-22 Special Operations, Modification	126.021	108.599	25.578	-	25.578	19.703	16.123	13.226	13.480	Continuing	Continuing	
• RDTE BA07 0401318F: CV-22 USAF BA07	-	-	38.719	-	38.719	26.422	15.914	14.443	14.718	Continuing	Continuing	
Remarks												
D. Acquisition Strategy												
The MV-22 is a post Milestone III ACAT-IC program. As a result of mishaps during and subsequent to MV-22 Operational Evaluation (Apr and Dec 00), the program was restructured employing a phased approach to return to flight and tactical introduction. The Contractor and Government defined deficient areas within the program/ aircraft requiring correction prior to return to flight. A Block Upgrade approach was planned, with required efforts identified in Block "A", "B", and "C". Block "A" included those efforts necessary to return the V-22 to safe and operational fleet operations. Block "B" included those efforts necessary to improve the effectiveness and suitability of the aircraft. Block "C" includes mission enhancements like weather radar, cabin effectiveness suitability improvements, i.e., Environmental Control System, and Forward Firing ALE-47. Non-recurring development activities are to be initiated and completed for all efforts identified in Block "A", "B", and "C". The Contractor will develop specific Statements of Work and Preliminary Specification Change Notices required to integrate the Block Upgrade efforts into the baseline Program. A Systems Requirements Review, Initial Design Review, and Final Design Review was held for each of the Block efforts so the design maturity could be reviewed and the Government could redirect activities as appropriate. The CV-22 Engineering Manufacturing and Development program is also structured in Blocks to define an evolutionary approach to achieving full operational capability. Block "0" is the initial baseline CV-22 variant. Block "10" enhances mission capability with the addition of												

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terrain following radar, additional fuel tanks, additional radios, and Block "20" includes capabilities such as radio frequency and infrared countermeasures improvements. Additional Blocks are in the planning stages to continue the growth process throughout the operational life of the weapon system. <u>E. Performance Metrics</u> Milestone Reviews.		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Navy												Date: March 2014			
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604262N / V-22A				Project (Number/Name) 1425 / V-22					
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
MV-22 Hardware Dev Airframe	SS/CPAF	Bell Boeing : Ridley Park, PA	3,850.758	-		-		-		-		-	-	3,850.758	3,850.765
MV-22 Award Fee (BLK C)	SS/CPAF	Bell Boeing : Ridley Park, PA	212.167	-		-		-		-		-	-	212.167	212.167
MV-22 Hardware Dev Airframe:Instrumented A/C	SS/FPIF	Bell Boeing : Ridley Park, PA	21.110	4.674	Mar 2013	-		4.029	Nov 2014	-		4.029	-	29.813	29.813
MV-22 Hardware Development Airframe	SS/CPIF	Bell Boeing : Ridley Park, PA	0.000	23.635	Jan 2013	24.176	Jan 2014	33.759	Jan 2015	-		33.759	148.809	230.379	230.379
MV-22 Hardware Dev Propulsion	SS/CPIF	Rolls-Royce Corp. : Indianapolis, IN	196.137	0.163	Jan 2013	0.300	Jan 2014	0.306	Jan 2015	-		0.306	1.282	198.188	198.188
MV-22 Dev Digital Interoperability	WR	NAWCWD : China Lake, CA	0.000	-		-		4.700	Jan 2015	-		4.700	18.800	23.500	-
Prior Year Prod Dev	Various	Various : Various	1,015.617	-		-		-		-		-	-	1,015.617	-
Subtotal			5,295.789	28.472		24.476		42.794		-		42.794	168.891	5,560.422	-
Remarks															
Begin MV-22 Digital Interoperability efforts in FY15.															
Award Fee earned was seventy-six percent of the available award fee pool.															
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
MV-22 Govt Engineering Sppt	WR	NAWCAD : Pax River, MD	1,101.632	0.999	Nov 2012	1.686	Nov 2013	1.710	Nov 2014	-		1.710	23.096	1,129.123	-
Prior Year Support	Various	Various : Various	189.718	-		-		-		-		-	-	189.718	-
Subtotal			1,291.350	0.999		1.686		1.710		-		1.710	23.096	1,318.841	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Navy													Date: March 2014		
Appropriation/Budget Activity 1319 / 5						R-1 Program Element (Number/Name) PE 0604262N / V-22A				Project (Number/Name) 1425 / V-22					
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
MV-22 Dev Test & Evaluation	WR	NAWCAD : Pax River, MD	997.697	9.669	Nov 2012	8.931	Nov 2013	9.055	Nov 2014	-		9.055	36.821	1,062.173	-
MV-22 Operational Test & Evaluation	WR	OT&E Force : Norfolk, VA	45.924	2.576	Dec 2012	4.709	Dec 2013	4.774	Dec 2014	-		4.774	15.594	73.577	-
Prior Year T & E	Various	Various : Various	48.200	-		-		-		-		-	-	48.200	-
Subtotal			1,091.821	12.245		13.640		13.829		-		13.829	52.415	1,183.950	-
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
MV-22 Engineering Tech Sppt	Various	Various : Various	1,046.123	0.311	Nov 2012	0.484	Nov 2013	0.309	Nov 2014	-		0.309	5.466	1,052.693	-
MV-22 Management Sppt Svc	Various	Various : Various	154.868	0.675	Nov 2012	0.641	Nov 2013	0.575	Nov 2014	-		0.575	4.913	161.672	-
MV-22 Program Mgmt Support	WR	NAWCAD : Pax River, MD	56.545	1.385	Nov 2012	1.865	Nov 2013	1.764	Nov 2014	-		1.764	8.616	70.175	-
MV-22 Travel	WR	NAWCAD : Pax River, MD	15.787	0.207	Jan 2013	0.292	Jan 2014	0.268	Jan 2015	-		0.268	3.829	20.383	-
Prior Year Mgmt	Various	Various : Various	41.087	-		-		-		-		-	-	41.087	-
Subtotal			1,314.410	2.578		3.282		2.916		-		2.916	22.824	1,346.010	-
			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			8,993.370	44.294	43.084		61.249		-		61.249	267.226	9,409.223	-	
Remarks															

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy	Date: March 2014
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Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604262N / V-22A	Project (Number/Name) 1425 / V-22
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V-22	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Acquisition Milestones																												
Engineering Milestones																												
Block C Increment II & III																												
Systems Development																												
Test & Evaluation																												
Development Test	Flight Test/Integrated Test																											
Operational Evaluation			OT-IIIJ ▼				OT-C1 ▼					OT-IIIK ▼								OT-IIIL ▼								
Production Milestones																												
Deliveries												IT A/C ◆																

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604262N / V-22A	Project (Number/Name) 1425 / V-22	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
V-22				
Test & Evaluation: Development Test: Development Flight Test / Integrated Test (IT-IIID) & Continuous software sustainment developmental testing	1	2013	4	2019
Test & Evaluation: Operational Evaluation: Operational Testing (OT-IIIJ)	3	2013	3	2013
Test & Evaluation: Operational Evaluation: Operational Testing (OT-C1)	3	2014	3	2014
Test & Evaluation: Operational Evaluation: Operational Testing (OT-IIIK)	3	2015	3	2015
Test & Evaluation: Operational Evaluation: Operational Testing (OT-IIIL)	3	2017	3	2017
Production Milestones: Deliveries: Instrumented Test Aircraft Delivery	2	2015	2	2015