Exhibit R-2, RDT&E Budget Item Justification: PB 2012 United States Special Operations Command	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 1160482BB: *SOF Rotary Wing Aviation*

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	71.441	14.473	51.123	-	51.123	35.551	38.776	13.539	3.140	Continuing	Continuing
D615: *SOF Rotary Wing Aviation*	71.441	14.473	51.123	-	51.123	35.551	38.776	13.539	3.140	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program element develops SOF-unique modifications and upgrades to SOF rotary wing aircraft that operate in increasingly hostile environments. Rotary wing aircraft supported by this project include: MH-60L/M, MH-47G, and A/MH-6M. These aircraft provide aviation support to Special Operations Forces (SOF) in worldwide contingency operations and low-intensity conflicts. They must be capable of rapid deployment; undetected penetration of hostile areas; and operating at extended ranges under adverse weather conditions to infiltrate, provide logistics for, reinforce, and extract SOF. The threat is characterized by an extensive and sophisticated ground based air defense system and an upgraded air-to-air capability targeted against helicopters.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	18.784	14.473	2.891	-	2.891
Current President's Budget	71.441	14.473	51.123	-	51.123
Total Adjustments	52.657	-	48.232	-	48.232
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	53.253	-			
• SBIR/STTR Transfer	-0.596	-			
• Other Adjustment	-	-	48.232	-	48.232

Change Summary Explanation

FY 2010 Net increase is due to a 1415-1 Prior Approval (PA 10-11, dated 28 June 2010) reprogramming action ($23.348 million), a reprogramming to program element 1160408BB, SOF Operational Enhancements ($0.677 million), an increase of Supplemental funding ($25.000 million) (will be reprogrammed to U.S. Navy to support Marine forces for Cargo UAS efforts) , an increase of Supplemental funding for a 1415-1 prior approval reprogramming action (PA 10-24, dated 28 September 2010) for Multiple Hit Transparent Armor ($5.582 million), and a transfer of funds to Small Business Innovative Research (-$0.596 million).

FY 2011 None.

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FY 2012 Increase is due to the start of the A/MH-6M Block 3.0 Upgrade ($18.765 million), MH-47G Engine Automatic Re-light ($2.563 million), MH-60M flight testing ($22.782 million) and increased MH-47 modifications ($5.122 million). Remaining funding (-$1.000 million) was moved to support higher command priorities.

Schedule: None.

Technical: None.

Exhibit R-2A, RDT&E Project Justification: PB 2012 United States Special Operations Command			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 1160482BB: *SOF Rotary Wing Aviation*	PROJECT D615: *SOF Rotary Wing Aviation*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
D615: *SOF Rotary Wing Aviation*	71.441	14.473	51.123	-	51.123	35.551	38.776	13.539	3.140	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

This project develops/upgrades SOF rotary wing aircraft systems that operate in increasingly hostile environments. Rotary wing aircraft supported by this project include: MH-60L/M, MH-47G, and A/MH-6M. These aircraft provide aviation support to SOF in worldwide contingency operations and low-intensity conflicts, and they must be capable of rapid deployment; undetected penetration of hostile areas; and operating at extended ranges under adverse weather conditions to infiltrate, provide logistics for, reinforce, and extract SOF. The threat is characterized by an extensive and sophisticated ground based air defense system and an upgraded air-to-air capability targeted against helicopters. Sub-projects include:

• A/MH-6M Block 3.0 Upgrade includes development of an integrated digital moving map, upgraded multifunctional displays, improved communication/navigation suites, lightweight mission processor, structural upgrades, and next generation main/tail rotor systems. This upgrade modification will increase safety margins and increase operational capabilities at higher altitude and temperature conditions. This program is a new start for FY 2012.

• The A/MH-6 Improved Seat system will provide a crashworthy ballistic protection, crash attenuation, and restraint system upgrades to prevent severe injury to Army Special Operations Aviation (ARSOA) pilots. The Center for Army Lessons Learned reported that over a three year period, 50 ARSOA pilots suffered serious back injuries and were grounded due to hard landings.

• Hostile Fire Indicating System (HFIS) detects, classifies, and alerts the aircrew to the presence of small caliber weapons fire for SOF MH-47/60 platforms. By providing detection and angle of arrival information, the HFIS will allow the aircrew to perform evasive and counter-fire actions significantly increasing the aircraft's probability of survival.

• The MH-47 Engine Automatic Re-Light (EARL) system will detect the presence of an impending or an in-progress engine flameout event and re-establish combustion within the engine to avoid an actual engine flameout. EARL will recognize the event much faster than a pilot and then proceed to reignite/restart the engine while monitoring and adjusting engine parameters including the ignition system and fuel flow scheduling. EARL is required to address safety issues in the MH-47 fleet where engine flameout has been cited as one of the probable causes of the loss of an MH-47G with loss of life in support of Operation Enduring Freedom. This program is a new start for FY 2012.

• MH-47 Low Cost Modifications program is an effort to integrate an improved Common Rotor Blade (CRB) being developed by the Army into the MH-47G. This program is a new start for FY 2012.

• MH-60 SOF Modernization program provides for the systems engineering and platform integration efforts, to include continued flight and qualification testing and test support.

Exhibit R-2A, RDT&E Project Justification: PB 2012 United States Special Operations Command		DATE: February 2011
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- Next Generation Forward Looking Infrared Radar (NGFLIR) develops and qualifies a laser rangefinder/designator (LRF/D) for the AN/ZSQ-3 Electro Optical Sighting System (EOSS).

- Reduced Optical Signature Emission Solution (ROSES) program reduces the optical signature output of the current infrared expendable decoys for purposes of reducing ARSOA aircraft vulnerabilities. This flare solution will have the capability to decoy currently fielded infrared missiles and more sophisticated emerging threats, and is an interim solution pending flare technology advancements.

- The YMQ-18A Cargo Unmanned Aerial System (UAS) will develop a cargo resupply modification. This effort will be transferred to the U.S. Navy in support of U.S. Marine forces cargo resupply efforts.

- Aircraft Occupant Ballistic Protection System (AOBPS) Multiple Hit Transparent Armor effort develops and operationally assesses the lightweight armor on the MH-47 and MH-60 platforms. These components replace panels and windows to increase aircrew and passenger safety and survivability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: A/MH-6M Block 3.0 Upgrade ***FY 2012 Plans:*** Begins development of cockpit upgrades, improved rotor systems, and upgrades to airframe.	-	-	18.765
Title: A/MH-6 Improved Seat System ***FY 2010 Accomplishments:*** Began development of integrated crashworthy seat system for the A/MH-6M. ***FY 2011 Plans:*** Completes development of integrated crashworthy seat system for the A/MH-6M.	3.564	2.852	-
Title: Hostile Fire Indicating System (HFIS) ***FY 2010 Accomplishments:*** Began development of the detection, classification and alert systems for the HFIS. ***FY 2011 Plans:*** Completes development of the detection, classification and alert systems for the HFIS.	2.473	3.954	-
Title: MH-47 Engine Automatic Re-Light (EARL) ***FY 2012 Plans:*** Begins development of the MH-47 fleet EARL system.	-	-	2.563
Title: MH-47 Low Cost Modifications	-	-	5.122

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2012 Plans: Begins integration of the Army's improved common rotor blade into the MH-47G.			
Title: MH-60 SOF Modernization Program ***FY 2010 Accomplishments:*** Continued systems integration and qualification efforts on one prototype MH-60M helicopter. ***FY 2012 Plans:*** Completes systems integration and qualification efforts on one prototype MH-60M helicopter.	22.699	-	22.782
Title: Next Generation FLIR ***FY 2010 Accomplishments:*** Began development of Next Generation FLIR Laser rangefinder/designator (LRF/D) program. ***FY 2011 Plans:*** Completes development, integration and qualification of LRF/D for the AN/ZSQ-3 Electrical Optical Sighting System.	8.351	3.732	-
Title: Reduced Optical Signature Emissions Solution (ROSES) ***FY 2010 Accomplishments:*** Began development of ROSES as a flare solution offering enhanced aircraft survivability. ***FY 2011 Plans:*** Continue development of ROSES. ***FY 2012 Plans:*** Completes development of ROSES.	3.772	3.935	1.891
Title: YMQ-18A Cargo UAS ***FY 2010 Accomplishments:*** This funding will be transferred to the U.S. Navy in support of the U.S. Marine Cargo resupply efforts. This funding is Supplemental.	25.000	-	-
Title: Aircraft Occupant Ballistic Protection System (AOBPS) Multiple Hit Transparent Armor ***FY 2010 Accomplishments:***	5.582	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 United States Special Operations Command		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Began development of the AOBPS Multiple Hit Transparent Armor for the MH-47 and MH-60 helicopters. This funding is Supplemental.			
Accomplishments/Planned Programs Subtotals	71.441	14.473	51.123

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• PROC2: *ROTARY WING UPGRADES AND SUSTAINMENT*	93.676	85.440	41.411	0.000	41.411	86.803	93.132	140.900	160.514	Continuing	Continuing

D. Acquisition Strategy

• A/MH-6M Block 3.0 Upgrade - This effort develops and qualifies several aircraft improvements such as an integrated digital moving map, upgraded multifunctional displays, improved communication/navigation suites, lightweight mission processor, structural upgrades, and next generation main and tail rotor systems. This effort is critically required to make the A/MH-6M more relevant on the battlefield today and well into 2020 decade. This effort will increase safety margins and increase operational capabilities at higher altitude and temperature conditions. Competitive source selection processes will be conducted for the Block 3.0 upgrades to the extent possible. Proprietary considerations may direct some efforts to the original equipment manufacturer.

• A/MH-6M Improved Seat System - This effort develops and qualifies an integrated ballistic tolerant, ergonomic, and crashworthy crew seat system for the A/MH-6M fleet. This modification will provide critical protection from crash loads and airframe vibrations by upgrading the current A/MH-6M seat and restraint system. A competitive source selection process will be conducted for the crashworthy seat system replacement to the extent possible. Proprietary considerations may direct some efforts to the original equipment manufacturer.

• HFIS - This effort will develop, integrate, install, and field the capability to detect, classify, and alert the aircrew to the presence of small arms fire, Anti-Aircraft Artillery, and Rocket Propelled Grenades. HFIS will allow aircrews to perform evasive and counter-fire actions, which will increase aircraft survivability and mission success. A competitive source selection process will be conducted for the HFIS effort to the extent possible. Proprietary considerations may direct some efforts to the original equipment manufacturer.

• MH-47 EARL System - This effort develops and qualifies a solution to address safety issues in the MH-47 fleet through the development, test, qualification, and fielding of changes to the engine control system to perform automatic engine failure detection and flame-out protection. A competitive source selection process will be conducted for the EARL system to the extent possible. Proprietary considerations may direct some efforts to the original equipment manufacturer.

• MH-47 Low Cost Modification to integrate the Army CRB - This effort integrates and qualifies a CRB solution that significantly increases payload capability, expands forward flight envelope, improves manufacturing and maintenance characteristics, and maintains commonality with the Army. As the MH-47 CRB integration

leverages Army CRB development activities with the original equipment manufacturer, this effort will consist mostly of Government executed integration, testing, and qualification efforts with some analytical engineering services to be procured. Because of proprietary considerations, efforts may be directed to the original equipment manufacturer.

• MH-60M SOF Modernization Program - This supports the Systems Integration and Qualification efforts on the prototype MH-60M helicopter. This includes, but is not limited to, government and contractor flight test support, engineering analysis, documentation, and airworthiness substantiation. There are no proprietary considerations that may direct some efforts to the original equipment manufacturer.

• NGFLIR - Develops, integrates and qualifies the laser rangefinder and designator to the AN/ZSQ-3 and develops a drop-in, advanced, dual-color (long and mid-wave) IR detector upgrade for the AN/ZSQ-2. NGFLIR will be installed on the MH-47/60 and AH-6M platforms within the ARSOA fleet. Proprietary considerations may direct some efforts to the original equipment manufacturer.

• ROSES - This effort develops and qualifies a flare solution that discharges fewer expendables per dispense and emits less visible light to improve aircrew's ability to survive in sophisticated threat environments. A competitive source selection process will be conducted for the ROSES to the extent possible. Proprietary considerations may direct some efforts to the original equipment manufacturer.

• YMQ-18A - This funding will be transferred to the U.S. Navy in support of the U.S. Marine forces cargo resupply efforts.

• AOBPS Multiple Hit Transparent Armor - This effort develops and operationally assesses the lightweight armor on the MH-47 and MH-60 platforms. A competitive source selection process will be conducted for the AOBPS effort to the extent possible. Proprietary considerations may direct some efforts to the original equipment manufacturer.

E. Performance Metrics

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 United States Special Operations Command			DATE: February 2011
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
A/MH-6M Block 3.0 Upgrades	C/Various	PM MELB:Ft. Eustis, VA.	-	-		18.765	Jan 2012	-		18.765	Continuing	Continuing	
A/MH-6M Improved Seat System	C/Various	PM MELB:Ft. Eustis, VA.	3.564	2.852	Jan 2011	-		-		-	0.000	6.416	
Hostile Fire Indicating System	C/Various	PM TAPO:Ft. Eustis, VA.	3.272	3.954	Jan 2011	-		-		-	0.000	7.226	
MH-47G Engine Automatic Re-Light	C/Various	PM TAPO:Ft. Eustis, VA.	-	-		2.563	Jan 2012	-		2.563	Continuing	Continuing	
MH-47G Low Cost Mods	C/Various	PM TAPO:Ft. Eustis, VA.	-	-		5.122	Jan 2012	-		5.122	Continuing	Continuing	
Next Generation Forward Looking Infrared Radar	C/Various	PM TAPO:Ft. Eustis, VA.	33.874	3.732	Jan 2011	-		-		-	0.000	37.606	
Reduced Optical Signature Emissions Solution	C/Various	PM TAPO:Ft. Eustis, VA.	3.772	3.935	Jan 2011	1.891	Jan 2012	-		1.891	0.000	9.598	
Prior Years	Various	Various:Various	31.670	-		-		-		-	0.000	31.670	
		Subtotal	76.152	14.473		28.341		-		28.341			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
MH-60 SOF Modernization Program	C/Various	PM TAPO:Ft. Eustis, VA.	23.348	-		22.782	Jan 2012	-		22.782	0.000	46.130	
Prior Years	Various	Various:Various	15.836	-		-		-		-	0.000	15.836	
		Subtotal	39.184	-		22.782		-		22.782	0.000	61.966	

Remarks

USSOCOM has requested Congress to transfer and appropriate $22.565 million in FY2011 RDT&E from the Procurement account to support continued MH-60M flight loads testing.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 United States Special Operations Command		DATE: February 2011
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Years	Various	Various:Various	5.279	-		-		-		-	Continuing	Continuing	
		Subtotal	5.279	-		-		-		-			

	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	120.615	14.473		51.123		-		51.123			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 United States Special Operations Command		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 1160482BB: *SOF Rotary Wing Aviation*	**PROJECT** D615: *SOF Rotary Wing Aviation*

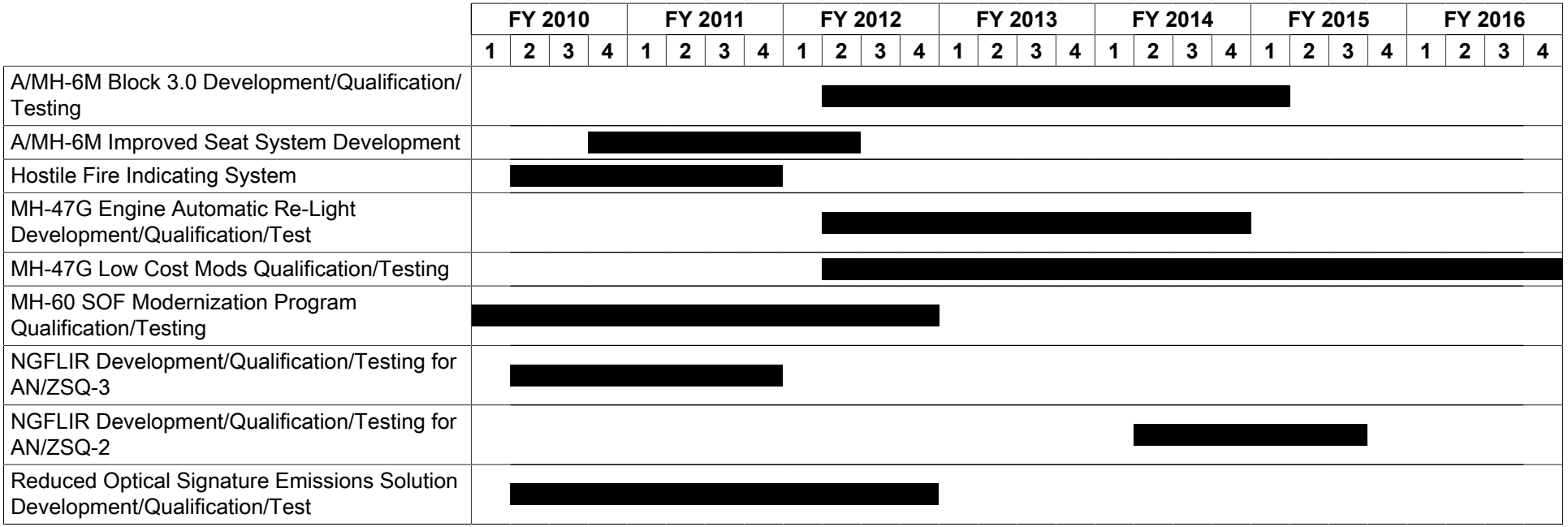

Exhibit R-4A, RDT&E Schedule Details: PB 2012 United States Special Operations Command		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 1160482BB: *SOF Rotary Wing Aviation*	**PROJECT** D615: *SOF Rotary Wing Aviation*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
A/MH-6M Block 3.0 Development/Qualification/Testing	2	2012	1	2015
A/MH-6M Improved Seat System Development	4	2010	2	2012
Hostile Fire Indicating System	2	2010	4	2011
MH-47G Engine Automatic Re-Light Development/Qualification/Test	2	2012	4	2014
MH-47G Low Cost Mods Qualification/Testing	2	2012	4	2016
MH-60 SOF Modernization Program Qualification/Testing	1	2010	4	2012
NGFLIR Development/Qualification/Testing for AN/ZSQ-3	2	2010	4	2011
NGFLIR Development/Qualification/Testing for AN/ZSQ-2	2	2014	3	2015
Reduced Optical Signature Emissions Solution Development/Qualification/Test	2	2010	4	2012