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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2012 Air Force **DATE:** February 2011

<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 0408011F: <i>SPECIAL TACTICS/COMBAT CONTROL</i>
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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	9.693	17.670	7.118	-	7.118	7.538	7.651	7.760	7.898	Continuing	Continuing
675138: <i>ST System Development</i>	9.693	17.670	7.118	-	7.118	7.538	7.651	7.760	7.898	Continuing	Continuing

**Note**

FY 2011 funding totals includes \$10.325M requested for Overseas Contingency Operations.

**A. Mission Description and Budget Item Justification**

Battlefield Air Operations (BAO) Kit is a program within the overarching Battlefield Airmen Modernization (BA-Mod) Program. BAO Kit will develop a Family of Systems (FoS) that provides a state-of-the-art Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) suite for Air Force Special Operations Command's (AFSOC's) Battlefield Airmen. BAO Kit Increment II will enhance the three core capabilities of Line of Sight (LOS) targeting, Non Line of Sight (XLOS) targeting, and Battlefield Air Operations Human Machine Interface (BAO HMI) while reducing the risk of fratricide and substantially reducing the weight carried. This program will develop and enhance technologies for Battlefield Airmen Combat Controllers (CCT) to recognize, identify, range, nominate and designate targets during both day and night. BAO Kit will also significantly reduce the time required to find, fix, track, target and engage the enemy by providing highly accurate target grid coordinates in three dimensions, generating target imagery both pre and post-strike, and transmitting target data to Command and Control centers. All BAO Kit systems are light, compact and portable for use by dismounted Battlefield Airmen. The significant improvements in operational capability, BAO Kit Increment II, will build upon the HMI and Battlefield Air Targeting Micro Air Vehicle (BATMAV) efforts and deliver enhanced capability for the dismounted soldier in terms of dramatic weight reduction and increased mission effectiveness across the conflict spectrum. 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>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>
Previous President's Budget	11.354	7.345	7.118	-	7.118
Current President's Budget	9.693	17.670	7.118	-	7.118
Total Adjustments	-1.661	10.325	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-1.583	-			
• SBIR/STTR Transfer	-0.030	-			
• Other Adjustments	-0.048	10.325	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force									DATE: February 2011		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0408011F: SPECIAL TACTICS/COMBAT CONTROL				PROJECT 675138: ST System Development			
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
675138: ST System Development	9.693	17.670	7.118	-	7.118	7.538	7.651	7.760	7.898	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**Note**

FY 2011 funding totals include \$10.325M requested for Overseas Contingency Operations.

**A. Mission Description and Budget Item Justification**

Battlefield Air Operations (BAO) Kit is a program within the overarching Battlefield Airmen Modernization (BA-Mod) Program. BAO Kit will develop a Family of Systems (FoS) that provides a state-of-the-art Command, Control, Communications, Computer, Intelligence, Surveillance and Reconnaissance (C4ISR) suite for Air Force Special Operations Command's (AFSOC's) Battlefield Airmen. BAO Kit Increment II will enhance the three core capabilities of Line of Sight (LOS) targeting, Non Line of Sight (XLOS) targeting, and Battlefield Air Operations Human Machine Interface (BAO HMI) while reducing the risk of fratricide and substantially reducing the weight carried. This program will develop and enhance technologies for Battlefield Airmen Combat Controllers (CCT) to recognize, identify, range, nominate and designate targets during both day and night. BAO Kit will also significantly reduce the time required to find, fix, track, target and engage the enemy by providing highly accurate target grid coordinates in three dimensions, generating target imagery both pre and post-strike, and transmitting target data to Command and Control centers. All BAO Kit systems are light, compact and portable for use by dismounted Battlefield Airmen. The significant improvements in operational capability, BAO Kit Increment II, will build upon the HMI and Battlefield Air Targeting Micro Air Vehicle (BATMAV) efforts and deliver enhanced capability for the dismounted soldier in terms of dramatic weight reduction and increased mission effectiveness across the conflict spectrum. 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)**

	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>
<b>Title:</b> BAO Kit Development	0.791	1.140	1.835	-	1.835
<b>Description:</b> Continue BAO Kit system and equipment development					
<b>FY 2010 Accomplishments:</b> Continue system test and evaluation efforts					
<b>FY 2011 Plans:</b> Continue program office operations effort					
<b>FY 2012 Base Plans:</b>					

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Continue BAO Kit system and equipment development						
FY 2012 OCO Plans:						
<p>Title: Human Machine Interface</p> <p>Description: Power Generation management; examples are exploring fuel cell prototypes for power generation of HMI and development of universal batteries for radios.</p> <p>FY 2010 Accomplishments: Exploring fuel cell prototypes for power generation of HMI in order to extend operational life and development of universal batteries for radios.</p> <p>FY 2011 Plans: Continuing to explore fuel cell prototypes for power generation of HMI and development of universal batteries for radios.</p> <p>FY 2012 Base Plans: Continuing to explore fuel cell prototypes for power generation of HMI and development of universal batteries for radios.</p> <p>FY 2012 OCO Plans:</p>		1.383	1.490	0.704	-	0.704
<p>Title: Non-Line of Sight (XLOS)</p> <p>Description: Non-Line of sight improves detection and targeting of enemy forces.</p> <p>FY 2010 Accomplishments: Efforts focus on delivery of data-link digitization of the signal for XLOS</p> <p>FY 2011 Plans: Continued development of non-line of sight which will improve detection and targeting of enemy forces.</p> <p>FY 2012 Base Plans:</p> <p>FY 2012 OCO Plans:</p>		2.801	0.800	-	-	-
<p>Title: Line of Sight</p> <p>Description: Development of Line of Sight- Short capability to improve detection and targeting of enemy forces</p>		-	3.915	2.279	-	2.279

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Exhibit R-2A, RDT&E Project Justification: PB 2012 Air Force				DATE: February 2011	
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B. Accomplishments/Planned Programs (\$ in Millions)					
	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
FY 2010 Accomplishments:					
FY 2011 Plans: Developing of Line of Sight to improve detection and targeting of enemy forces					
FY 2012 Base Plans: Continuing development of Line of Sight to improve detection and targeting of enemy forces					
FY 2012 OCO Plans:					
Title: Machine to Machine C4ISR System					
Description: Machine to Machine Command, Control, Communications and Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) provides improved capability for reduced kill chains and reduced fratricide.					
FY 2010 Accomplishments: Development of Machine to Machine Command, Control, Communications and Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) to provide improved capability for reduced kill chains and reduced fratricide.					
FY 2011 Plans:					
FY 2012 Base Plans: Further development of Machine to Machine Command, Control, Communications and Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) provides improved capability for reduced kill chains and reduced fratricide.					
FY 2012 OCO Plans:					
Title: HMI Software Development					
Description: Develops software to improve targeting and communications flow.					
FY 2010 Accomplishments:					
FY 2011 Plans:					

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
This FY11 OCO focuses on completing the testing for the software for targeting and communications for the Anubis Remotely Piloted Vehicle and transitioning the capability to the warfighter. <b>FY 2012 Base Plans:</b> <b>FY 2012 OCO Plans:</b>						
<b>Title:</b> PRC-117G Radio Waveform Development <b>Description:</b> Improves the waveforms used by the PRC-117G radio for use in the theater of operations. <b>FY 2010 Accomplishments:</b> <b>FY 2011 Plans:</b> This FY11 OCO focuses on improving the waveforms used by the PRC-117G radio for use in the theater of operations. <b>FY 2012 Base Plans:</b> <b>FY 2012 OCO Plans:</b>		-	1.775	-	-	-
<b>Title:</b> Anubis Development Testing <b>Description:</b> Completes the testing for the Anubis Remotely Piloted Vehicle and transitioning the capability to the warfighter. <b>FY 2010 Accomplishments:</b> <b>FY 2011 Plans:</b> This FY11 OCO focuses on completing the testing for the Anubis Remotely Piloted Vehicle and transitioning the capability to the warfighter. <b>FY 2012 Base Plans:</b> <b>FY 2012 OCO Plans:</b>		-	6.900	-	-	-
Accomplishments/Planned Programs Subtotals		8.186	17.670	7.118	-	7.118
		FY 2010	FY 2011			
Congressional Add: Digital Data Link		1.507	-			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2012 Air Force			<b>DATE:</b> February 2011	
<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 0408011F: <i>SPECIAL TACTICS/COMBAT CONTROL</i>		<b>PROJECT</b> 675138: <i>ST System Development</i>
			<b>FY 2010</b>	<b>FY 2011</b>
<b>FY 2010 Accomplishments:</b> Secure Digital Data Link Development for small UAS.				
<b>FY 2011 Plans:</b>				
<b>Congressional Adds Subtotals</b>			1.507	-

**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012</u> <u>Base</u>	<u>FY 2012</u> <u>OCO</u>	<u>FY 2012</u> <u>Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF: <i>PE 0408011F, Tactical C-E Equipment</i>	9.731	11.612	14.895	0.000	14.895	15.543	15.769	16.027	16.306	Continuing	Continuing
• APAF: <i>PE 0305234F, WASP</i>	3.597	3.253	0.000	2.472	2.472	0.000	0.000	0.000	0.000	Continuing	Continuing

**D. Acquisition Strategy**

The evolutionary acquisition strategy will focus on meeting immediate requirements with current technology while pursuing future increments for improved accuracy, increased vertical and horizontal integration, and reduced weight. Future increments will be incorporated as funding and technology allow.

**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 2012 Air Force											DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0408011F: SPECIAL TACTICS/COMBAT CONTROL				PROJECT 675138: ST System Development						
Product Development (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Human Machine Interface (HMI)	C/Various	Various:Various,	1.383	1.490	Nov 2010	0.704		-		0.704	Continuing	Continuing	0.000	
Line of Sight	C/TBD	TBD:TBD,	-	3.915	Feb 2011	2.279	Feb 2012	-		2.279	Continuing	Continuing	0.000	
Machine-To-Machine Software Development	C/CPFF	Systems Research & Applications Corp:Dayton, Ohio,	3.211	-		2.300	Feb 2012	-		2.300	Continuing	Continuing	TBD	
Non Line of Sight Targeting System (XLOS)	Various	Various:Various,	2.801	0.800	Jun 2011	-		-		-	Continuing	Continuing	0.000	
Subtotal			7.395	6.205		5.283		-		5.283				
Support (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Digital Data Link Congressional Add	SS/CPAF	Various:Various,	1.507	-		-		-		-	0.000	1.507	0.000	
Anubis OCO, Radio OCO, Blue Force OCO	C/CPAF	Not specified.:	-	10.325	Jun 2011	-		-		-	0.000	10.325	0.000	
Subtotal			1.507	10.325		-		-		-	0.000	11.832	0.000	
Test and Evaluation (\$ in Millions)				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Test Agency Support	RO	46 TS:Eglin AFB, FL	0.275	0.150	Mar 2011	0.350	Feb 2012	-		0.350	Continuing	Continuing	0.000	
Integration and Certification	WR	AFRL RYT:WPAFB, OH	0.250	0.100	May 2011	0.050	Feb 2012	-		0.050	Continuing	Continuing	TBD	
Subtotal			0.525	0.250		0.400		-		0.400				

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<b>Management Services (\$ in Millions)</b>				<b>FY 2011</b>		<b>FY 2012 Base</b>		<b>FY 2012 OCO</b>		<b>FY 2012 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</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>
Program Office Support	Various	Various:Various,	0.266	0.890	Mar 2011	1.435	Mar 2012	-		1.435	Continuing	Continuing	TBD
<b>Subtotal</b>			0.266	0.890		1.435		-		1.435			

  

	<b>Total Prior Years Cost</b>	<b>FY 2011</b>		<b>FY 2012 Base</b>		<b>FY 2012 OCO</b>		<b>FY 2012 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	9.693	17.670		7.118		-		7.118			

  

**Remarks**

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Exhibit R-4, RDT&E Schedule Profile: PB 2012 Air Force		DATE: February 2011
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Exhibit R-4A, RDT&E Schedule Details: PB 2012 Air Force			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>	R-1 ITEM NOMENCLATURE PE 0408011F: <i>SPECIAL TACTICS/COMBAT CONTROL</i>	PROJECT 675138: <i>ST System Development</i>	

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Increment II	1	2010	1	2013
Increment III	3	2013	4	2016