Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force											Date: February 2018	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0408011F / *Special Tactics / Combat Control*							
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
Total Program Element	-	6.902	8.090	2.541	0.000	2.541	6.203	6.142	5.720	6.191	Continuing	Continuing
675138: *ST System Development*	-	6.902	8.090	2.541	0.000	2.541	6.203	6.142	5.720	6.191	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Special Tactics (ST) System Development project focuses on modernization development for the Battlefield Air Operations (BAO) Kit. This program is part of the overarching Battlefield Airmen Modernization (BA-Mod) Program. BAO Kit will develop, test, train, and modernize the existing and future Family of Systems (FoS) that provide a state-of-the-art Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) capability. It also provides a suite of systems for all Air Force Specialty Codes supporting the ST community within the Air Force Special Operations Command's (AFSOC's) Battlefield Airmen. Efforts in ST System Development focus on reducing the risk of fratricide and substantially reducing size and weight of the equipment carried through three core capabilities, which are not limited to: Human Machine Interface (HMI), Line of Sight (LOS) targeting, and Machine-to-Machine (M2M) C4ISR System and all other ST capability needs.

This program will develop and enhance technologies for Battlefield Airmen ST operators to recognize, identify, range, nominate, and designate targets during both day and night operations. BAO Kit will also significantly reduce the time required to find, track, fix targets, 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. BAO Kit systems are light, compact, and portable for use by dismounted Battlefield Airmen. FY19 BAO Kit funding will provide significant improvements in operational capability, situational awareness, and precision lethality in the battle space while continuing to build and enhance the BAO Kit family of systems. This may be conducted through industry technology demonstrations, prototypes, and associated engineering support to posture the BAO Kit for technology insertion. These efforts will deliver enhanced capability for the dismounted soldier in terms of dramatic weight reduction and increase mission effectiveness across the conflict spectrum. BAO also supports AFSOC Tactical Command and Control (TAC C2) programs to develop and enhance communications systems and equipment essential for ST combat controllers, pararescue, combat weather operators, and tactical air controller parties within AFSOC to perform their mission. The ST operators use this equipment to gather and transmit assault zone suitability and weather data and to perform tactical airfield/assault landing/drop zone operations. Due to the rapidly changing threat environment, the acquisition program manager has the authority to redirect funding as necessary to meet current slated and emerging requirements. The above efforts may change based on the need to support current Air Force mission requirements.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver nuclear weapon support capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, 0605898F, and 0605833F.

The Special Tactics (ST) System Development activities also include studies and analysis to support both current and future program planning and execution.

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force	Date: February 2018
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This 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. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	7.164	8.090	8.119	0.000	8.119
Current President's Budget	6.902	8.090	2.541	0.000	2.541
Total Adjustments	-0.262	0.000	-5.578	0.000	-5.578
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-0.262	0.000			
• Other Adjustments	0.000	0.000	-5.578	0.000	-5.578

Change Summary Explanation

FY19 funding decreased due to higher Air Force priorities.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Human Machine Interface (HMI)	0.918	1.891	0.340	-	0.340
Description: HMI is a system of systems that provides integrated operator interface between all the machine components by using unified visual and auditory displays and controls, such as head-mounted displays, tactical earplug connectivity with man pack or handheld communications, integrated tactical computing solution, and power generation and management systems. ***FY 2018 Plans:*** - Continue to focus on Handheld Link-16 receiver/transmitter for the dismounted operator and interaction with next generation aircraft. Capability will support digitally aided combat air support operations. Plan to develop and operate tests for full spectrum certification (Joint Interoperable Test Command (JITC), Air Force System Interoperability Test (AFSIT), and Authority to Operate (ATO)). - Continue to explore and define requirements for implementation of the Iridium waveform granting DoD dedicated airtime.					

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0408011F / *Special Tactics / Combat Control*	

C. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Continue communications development: HMI efforts which reduced the Size, Weight, and Power (SWAP) required to be carried by the Special Tactics Community. Specifically includes wireless technology. - Continue required maturation of available technology for future dismounted communication contract in order to meet the requirements of the user. ***FY 2019 Base Plans:*** - Capability will support digitally aided combat air support operations. Plan to develop and operate tests for full spectrum certification (Joint Interoperable Test Command (JITC), Air Force System Interoperability Test (AFSIT), and Authority to Operate (ATO)). - Will continue to explore and define requirements for implementation of the Iridium waveform granting DoD dedicated airtime. - Will continue communications development: will upgrade HMI efforts which reduced the Size, Weight, and Power (SWAP) required to be carried by the Special Tactics Community. Specifically includes wireless technology. - Will require maturation of available technology for future dismounted communication contract in order to meet the requirements of the user. - Due to the rapidly changing threat environment, the acquisition program manager has the authority to redirect funding as necessary to meet current slated and emerging requirements. The above efforts may change based on the need to support current Air Force mission requirements. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Funding decreased due to higher Air Force priorities.					
Title: Line of Sight ***Description:*** Line of Sight (LOS) targeting enables the ST Battlefield Airmen to find, fix, track, target and, engage the enemy at close range during day or night operations by providing highly accurate target coordinates in three dimensions. LOS generates vital imagery both pre and post-strike at a fraction of the weight and is more efficient than legacy equipment carried by the operator. Non Line of sight (XLOS) targeting device exploration and development will help capture future capabilities to the Special Tactics community. XLOS devices allow for a remote expendable reporting environmental sensor that enhances AFSOC Special Operation Weather Team's (SOWT) ability to provide timely, accurate, and critical deep battle space weather reconnaissance and intelligence. ***FY 2018 Plans:***	0.250	0.273	0.001	-	0.001

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Continue to explore and develop future Non Line of sight (XLOS) targeting device capabilities for Special Tactics community. - Continue to explore additional development of the Microweather Sensor (MWS). Look to further upgrade acoustic sensor and Chemical Biological Radiological Nuclear Explosive (CBRNE) detectors. ***FY 2019 Base Plans:*** - Will continue to explore and develop future Non Line of sight (XLOS) targeting device capabilities for Special Tactics community. - Will continue to explore additional development of the Microweather Sensor (MWS). - Due to the rapidly changing threat environment, the acquisition program manager has the authority to redirect funding as necessary to meet current slated and emerging requirements. The above efforts may change based on the need to support current Air Force mission requirements. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Funding decreased due to higher Air Force priorities.					
Title: Machine-to-Machine (M2M) Software Development ***Description:*** A suite of map-centric software applications that enables M2M transfer of precision targeting, information management, C4ISR (Command, Control Communications, Computers, Intelligence, Surveillance, and Reconnaissance), and Situational Awareness (SA) information. Provides the ST Battlefield Airmen the ability to find, fix, track, target, and engage the enemy which greatly reduces the kill chain and drastically decreases the possibility of fratricide by enhancing the operator's SA on the battlefield. ***FY 2018 Plans:*** - Continue to improve development and test material prototypes to include market survey of M2M graphical user interfaces (GUI) for C4ISR. - Continue to perform DoD Mandatory Windows 10 upgrades, for Digital Air Strike Suite (DASS) system. - Continue to support requirements for DASS & Small Bomb Diameter (SBD) II net enabled weapon. ***FY 2019 Base Plans:*** - Will begin to explore requirements to include future FoS capability gap. - Will continue research and developmental efforts to support requirements in BAO FoS CDD, which includes but is not limited to Assault Zones, Fires, Weather, Personnel Recovery, and Enabling Capabilities.	5.734	5.926	2.200	-	2.200

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force	Date: February 2018
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C. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
- Due to the rapidly changing threat environment, the acquisition program manager has the authority to redirect funding as necessary to meet current slated and emerging requirements. The above efforts may change based on the need to support current Air Force mission requirements. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Funding decreased due to higher Air Force priorities.					
Accomplishments/Planned Programs Subtotals	6.902	8.090	2.541	-	2.541

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• OPAF 03 Line Item 837100: *Tactical C-E Equipment*	43.833	15.524	36.389	25.000	61.389	52.094	44.269	66.330	19.315	Continuing	Continuing
• OPAF 04 Line Item 842990: *Personal Safety and Rescue Equipment*	4.285	6.584	6.118	4.000	10.118	6.299	2.506	2.330	2.371	Continuing	Continuing

Remarks

E. Acquisition Strategy

BAO Kit awarded a contract in FY16 to complete M2M software development. This effort will include system engineering, design, integration, and fielding support for M2M software. Due to the rapidly changing threat environment, the acquisition program manager has the authority to redirect funding as necessary to meet current slated and emerging requirements. The above efforts may change based on the need to support current Air Force mission requirements. Wright Patterson AFB, OH manages the contract effort.

F. 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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0408011F / *Special Tactics / Combat Control*	**Project (Number/Name)** 675138 / *ST System Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Human Machine Interface (HMI)	C/Various	Various : Various	-	0.918	Oct 2016	1.891	Oct 2017	0.303	Oct 2018	-		0.303	Continuing	Continuing	-
Line of Sight	SS/ Various	Phsyical Optics Corporation : Torrance, CA	-	0.250	Nov 2016	0.273	Nov 2017	0.001	Nov 2018	-		0.001	Continuing	Continuing	-
Machine-To-Machine (M2M) Software Development	C/CPFF	Systems Research & Applications Corp : Dayton, OH	-	5.138	Feb 2017	5.277	Mar 2018	1.831	Feb 2019	-		1.831	Continuing	Continuing	-
		Subtotal	-	6.306		7.441		2.135		-		2.135	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Agency Support	Various	46 TS : Eglin AFB, FL	-	0.253	Oct 2016	0.266	Oct 2017	0.205	Oct 2018	-		0.205	Continuing	Continuing	-
		Subtotal	-	0.253		0.266		0.205		-		0.205	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various : Various, NV	-	0.343	Oct 2016	0.383	Oct 2017	0.201	Oct 2018	-		0.201	Continuing	Continuing	-
		Subtotal	-	0.343		0.383		0.201		-		0.201	Continuing	Continuing	N/A

	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	6.902		8.090		2.541		-		2.541	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0408011F / *Special Tactics / Combat Control*	**Project (Number/Name)** 675138 / *ST System Development*

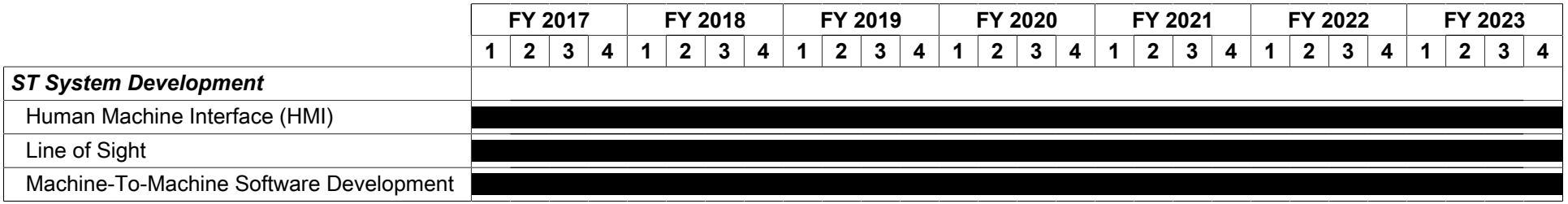

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0408011F / *Special Tactics / Combat Control*	**Project (Number/Name)** 675138 / *ST System Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ST System Development				
Human Machine Interface (HMI)	1	2017	4	2023
Line of Sight	1	2017	4	2023
Machine-To-Machine Software Development	1	2017	4	2023