Exhibit R-2, RDT&E Budget Item Justification: FY 2018 Air Force											Date: May 2017	
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force* / BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0207418F / *Tactical Airborne Control Systems*							
COST ($ in Millions)	**Prior Years**	**FY 2016**	**FY 2017**	**FY 2018 Base**	**FY 2018 OCO**	**FY 2018 Total**	**FY 2019**	**FY 2020**	**FY 2021**	**FY 2022**	**Cost To Complete**	**Total Cost**
Total Program Element	-	5.786	2.442	3.656	0.000	3.656	3.715	3.785	3.849	3.928	Continuing	Continuing
675234: *TACP Support*	-	5.786	2.442	3.656	0.000	3.656	3.715	3.785	3.849	3.928	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Joint Terminal Control Training and Rehearsal (JTC TRS) Program, under the Tactical Airborne Control System, funds development necessary to provide a Distributed Mission Operations (DMO) capable, high-fidelity simulator for Battlefield Airmen, to include Joint Terminal Attack Controller (JTAC) operations, Special Tactics Combat Control Team (CCT) Air Traffic Control (ATC), Assault Zone operations, and Air Support Operations Center (ASOC) operations.

JTC TRS is essential to provide initial training, mission qualification training, continuation training, and currency control requirements to JTACs and Special Tactics personnel. JTAC control training requirements exceed the ability of live-fly aircraft to meet, and JTC TRS is the only capability enabling JTACs to achieve and maintain minimum required training for both qualification and proficiency in accordance with the U.S and Partner Nation Memorandum of Agreement for JTAC certification and qualification.

The JTC TRS Program provides research and development to facilitate interoperability with joint and sister Service air-ground simulation using industry standards. Future JTC TRS development will provide the capability to network aircrew full mission trainers and training centers in a live-virtual-constructive network. This development effort will also integrate ASOCs with the Joint Theater Air Ground Simulation System (JTAGSS) trainer for Joint Fires integration. The simulator will supplement live field training and live-fly sorties to provide realistic introductory, proficiency, currency, and upgrade training in a simulated battlefield, disaster, or humanitarian relief environment.

b. JTAGSS is a continuation of the ASOC simulation trainer initially funded in 2009 and complements the JTC TRS trainer by providing a total air-ground constructive simulation environment for integrated networked training and mission rehearsal capability that will develop JTAC/CCT and ASOC/Special Operations Forces (SOF) Command and Control (C2) battle staff skills. JTAGSS will provide the ASOC, SOF, and TACP (Tactical Air Control Party) with the vertical and horizontal C2 communications and coordination training and mission rehearsal required for mission effectiveness. There are insufficient exercises and live training events available to meet mandated readiness requirements. The system will include a secure network connection, a constructive simulation environment generator with sharable databases, computer work stations that have synthetic reflex agent applications for each ASOC/SOF crew position to execute the air tasking order.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts for systems, fielded or approved, for production, that have been fully validated through formal Operation Utility Evaluation (OUE) and anticipate production funding in the current or subsequent fiscal year. Funds may be used to address emerging and short-notice Diminishing Manufacturing and Material Shortage (DMSMS) issues. DMS efforts to include removal of end-of-life software/hardware within simulators systems and move to a modular, common open system architecture that is sustainable and cyber-resilient. Implement

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requirements and standards defined under the Simulator Common Architecture Requirements and Standards (SCARS) initiative. This program element may include necessary civilian pay expenses required to manage, execute, and deliver the JTC TRS weapon system capability.

B. Program Change Summary ($ in Millions)	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total
Previous President's Budget	6.001	2.442	3.645	0.000	3.645
Current President's Budget	5.786	2.442	3.656	0.000	3.656
Total Adjustments	-0.215	0.000	0.011	0.000	0.011
• 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	0.000	0.000			
• Other Adjustments	-0.215	0.000	0.011	0.000	0.011

C. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
Title: JTC TRS Trainer Development	0.200	0.600	1.200
Description: Development and test of Engineering Change Proposals (ECPs) for TACP-CLose Air Support System (CASS) and Small Diameter Bomb (SDB) II. ***FY 2016 Accomplishments:*** N/A ***FY 2017 Plans:*** Development of Legacy System (AFSOC JTAC Training System (AJS) and JTAC-TACP/Operational Simulation Suite (J-T/OSS)) compatibility for use with JTC TRS in scenario generation and After Action Review (AAR). ***FY 2018 Plans:*** Development and test of Engineering Change Proposals (ECPs) for TACP-CASS and SDB II.			
Title: JTAGSS Trainer Development	5.586	1.842	2.456
Description: Develops high fidelity simulation system for ASOC/SOF Command and Control System that supports JTAC training. Currently an AFRL program funded by Air Combat Command ***FY 2016 Accomplishments:*** • Stood up JTAGSS 1.0 deployed testbed at 111th ASOS (used in three exercises); To include Army integration			

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C. Accomplishments/Planned Programs ($ in Millions)	FY 2016	FY 2017	FY 2018
• Transitioned JTAGSS to a server based infrastructure eliminating computing stations at each position • Stood up JTAGSS 2.0 (beta version) deployed testbed at 5th ASOS • Two agent prototypes complete; Warfighters bought off on external agents - "How soon can we get them" • Established a R&D MOA with 5th and 111th ASOS • Established JTAGSS Users Group • Participated in Bold Quest 16.1 on the JTEN ***FY 2017 Plans:*** • JTAGSS TRADOC demonstration • JTAGSS LVC demonstration at I/ITSEC • External agent integration • Procedural Controller (internal agent) demonstration • Standup six research and development testbeds at operational unit locations • Investigate and potentially integrate TBMCS Lite • Complete JTAGSS 2.0 ***FY 2018 Plans:*** Complete JTAGSS 3.0. Integrate TACP Close Air Support System 1.4.4. and complete internal agents.			
Accomplishments/Planned Programs Subtotals	5.786	2.442	3.656

D. Other Program Funding Summary ($ in Millions)

Line Item	FY 2016	FY 2017	FY 2018 Base	FY 2018 OCO	FY 2018 Total	FY 2019	FY 2020	FY 2021	FY 2022	Cost To Complete	Total Cost
• OPAF: BA 03: Line Item # 837100: *Tactical C-E Equipment*	43.187	15.599	1.181	0.000	1.181	13.023	3.891	3.961	0.000	Continuing	Continuing

Remarks

E. Acquisition Strategy

a. The JTC TRS acquisition is a single step to full capability as defined in the CPD. A small business set-aside competitive lowest price technically acceptable source selection was conducted and resulted in the award of a single contract to produce and sustain JTC TRS. The contract includes pre-priced production options for additional JTC TRS production, Emulated Military Equipment (EME) program management, cybersecurity support, Contractor Logistic Support (CLS), Training System Support Center (TSSC), training, relocation, a legacy system compatibility study and an Air Traffic Control upgrade. The pre-price production options include credit to the government for use of existing equipment when updating current fielded active duty immersive JTAC training systems (Air National Guard (ANG) Advanced JTAC Training System (AAJTS)) to the JTC TRS baseline. The contract structure allows for maintaining concurrency, implementing system improvements/technical

refresh, and other modifications as required. JTC TRS awarded a competitive contract in January 2016 to procure up to 32 devices. The JTC TRS received a Full Rate Production (FRP) decision in February 2017 and is currently fielding production units. . Development will be required for engineering changes related to Legacy System Compatibility, Air Traffic Control (ATC), TACP-Close Air Support System (TACP-CASS) and Small Diameter Bomb II (SDB II).

b. The acquisition strategy for the JTAGSS trainer will be to field advance technology demonstration units to continue to perform proof of concept and technology validation of mission simulations for all ASOC crew positions including detailed communications planning, asset deconfliction, integration of joint fires, and other critical mission areas required for integrated TACP/ASOC C2 mission success. At the completion of the technology validation, a contract will be competitively awarded to complete JTAGSS development, deployment and integration. Current software is Government or Commercial Off-the-Shelf technologies (GOTS/COTS) allowing almost any training technology development company to compete, which lowers technical risk, schedule risk, and cost.

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.