Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Air Force											Date: February 2019	

Appropriation/Budget Activity
3600: *Research, Development, Test & Evaluation, Air Force I* BA 7: *Operational Systems Development*

R-1 Program Element (Number/Name)
PE 0207601F *I USAF Modeling and Simulation*

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
Total Program Element	-	9.803	17.078	15.725	0.000	15.725	17.699	19.071	19.065	18.727	Continuing	Continuing
674567: *M&S Foundations*	-	0.000	6.814	6.943	0.000	6.943	7.063	7.210	7.341	7.473	Continuing	Continuing
675135: *Warfighter Readiness*	-	9.803	10.264	8.782	0.000	8.782	10.636	11.861	11.724	11.254	Continuing	Continuing

Note
 This program, BA 7, PE 0207601F, project 675135, Command & Control Simulation Environment for Training (C2SET), is a new start.

A. Mission Description and Budget Item Justification

Modeling and Simulation support to our Warfighter's Readiness is a United States Air Force (USAF) corporate imperative to ensure air, space, cyberspace training, and mission rehearsal activities are supported with realistic, interoperable, and readily available tools, data, services and environments. Warfighter readiness supports Department of Defense (DoD) Training Transformation (T2) and Joint National Training Capability (JNTC) along with the USAF priorities and core functions. Activities also include studies and analysis to support both current program planning, execution, and future program planning.

It includes several complimentary programs, initiatives and areas for investment: Warfighter and Joint Training Integration supports the Chief of Staff of the Air Force (CSAF) directed Live, Virtual, and Constructive (LVC) integration efforts and is a critical piece to the USAF's implementation of the Strategic Plan for Transforming DoD Training. The goal of LVC training and mission rehearsal is to prepare our warfighters for the full range of military operations and maintain the combat readiness levels required by the Combatant Commanders'. This can only be accomplished by training and rehearsing in realistic operational environments. These environments include live training ranges and virtual simulators enhanced with constructive entities. Specific training and mission rehearsal events can include some or all of these simultaneously; making the ability to integrate LVC capabilities a necessity.

The Air, Space, and Cyberspace Constructive Environment (ASCCE) is the USAF's authoritative federation of constructive training models and tools realistically representing the tactical and operational capabilities the USAF brings to the joint fight. Project 675135, Warfighter Readiness, includes the Air Force Modeling and Simulation Training Toolkit (AFMSTT) and its follow on program Command & Control Simulation Environment for Training (C2SET), which provides the authoritative representation of AF and joint theater-level air and space power and is used to train Air and Space Operations Center (AOC) personnel and Combatant Commanders' battle staffs. The primary models in the AFMSTT are the Air Warfare Simulation (AWSIM) and Air Base Simulation (ABS).

The program element also contains Project 674567, M&S Foundations, the Air, Space and Cyberspace Collaborative Environment - Information Operations Suite (ACE-IOS). ACE-IOS is a federation of constructive models for the authoritative representation of Air Force information operations. ACE-IOS is developed and operated by the Air Force Cyber Simulation Center (CSC) to support training and mission rehearsal for the Air Force, Joint Task Force commanders, and Combatant Commanders' battle staffs during Joint and Service exercises, tests and experiments. The CSC provides cyber live-virtual-constructive (LVC) environments to support the development and fielding of offensive and defensive cyber capabilities for the AF, DoD, and national agencies. This program also supports the DoD Training Transformation Initiative.

Exhibit R-2, **RDT&E Budget Item Justification:** PB 2020 Air Force	**Date:** February 2019
Appropriation/Budget Activity 3600: *Research, Development, Test & Evaluation, Air Force I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0207601F *I USAF Modeling and Simulation*

The FY2020 funding request was reduced by $1.672 million to account for the availability of prior year execution balances.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver AFMSTT and ACE-IOS capability. 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, and 0605898F.

As directed in the FY 2018 NDAA, Sec 825, amendment to PL 114-92 FY 2016 NDAA, Sec 828 Penalty for Cost Overruns, the FY 2018 Air Force penalty total is $14.373M. The calculated percentage reduction to each research, development, test and evaluation and procurement account will be allocated proportionally from all programs, projects, or activities under such account.

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. Program Change Summary ($ in Millions)	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**
Previous President's Budget	10.175	17.078	17.397	0.000	17.397
Current President's Budget	9.803	17.078	15.725	0.000	15.725
Total Adjustments	-0.372	0.000	-1.672	0.000	-1.672
• 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	-0.372	0.000			
• Other Adjustments	0.000	0.000	-1.672	0.000	-1.672

Exhibit R-2A, **RDT&E Project Justification:** PB 2020 Air Force										**Date:** February 2019	
Appropriation/Budget Activity 3600 / 7				**R-1 Program Element (Number/Name)** PE 0207601F / *USAF Modeling and Simulation*					**Project (Number/Name)** 674567 / *M&S Foundations*		

COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
674567: *M&S Foundations*	-	0.000	6.814	6.943	0.000	6.943	7.063	7.210	7.341	7.473	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Modeling and Simulation Foundations (MSF) focuses on integrating foundational capabilities needed to improve the usefulness of Modeling and Simulation (M&S) capabilities derived from the Warfighter Readiness (WR) thrust. The efforts supporting the MSF thrust include both concept exploration and development. MSF provides the capability to rapidly and efficiently create realistic and accurate synthetic operational battlespaces to support the full spectrum of activities associated with concept development to acquisition and testing through composite training and mission rehearsals.

Air, Space and Cyberspace Constructive Environment - Information Operations Suite (ACE-IOS) project is a federation of constructive models for the authoritative representation of Air Force information operations. ACE-IOS is developed and operated by the Air Force Cyber Simulation Center (CSC) to support training and mission rehearsal for the Air Force, Joint Task Force commanders, and Combatant Commands battle staffs during Joint and Service exercises, tests and experiments.

The CSC provides cyber live-virtual-constructive (LVC) environments to support the development and fielding of offensive and defensive cyber capabilities for the AF, DoD, and national agencies. The CSC is managed by the 90th Cyberspace Operations Squadron, a unit of the 318th Cyberspace Operations Group, 67th Cyberspace Wing, 24th Air Force (AFCYBER). The Distributed Mission Operations Center for Cyberspace (DMOC-C) is a subset of the CSC focused on training and exercising tactical cyber mission forces (CMF) and cyber service providers (CSP) and operational-level command and control, intelligence, and cyber planners and operators. DMOC-C provides the ACE-IOS to support Air Force information operations. DMOC-C, using ACE-IOS, directly supports Air Force, Joint, Coalition composite training and rehearsal, concept development, and acquisition and testing for use by Major and Combatant Commands. DMOC-C thrust areas develop and modernize models and simulations covering cyberspace, intelligence and command and control activities as part of the constructive backbone of Air Force capabilities within DOD and coalition LVC environments.

DMOC-C's development and integration efforts on ACE-IOS are imperative to ensure that air, space, and cyberspace training and mission rehearsal activities are supported with realistic, interoperable, and readily available tools, data, and services. LVC environments today are used as one of the most cost effective and practical means to meet mission needs. These efforts enable more efficient delivery of effective capabilities to the warfighter while reducing the time and resources required for design, development, test and evaluation, maintainability and sustainment.

Authorization and Accreditation and Networthiness is maintained via the Information Technology (IT) systems Risk Management Framework (RMF) for seven classified systems and five supported cross domain solutions, which includes code and ruleset development, testing, and fielding, and meets AF Joint Worldwide Intelligence Communications System (JWICS) and AF Secret Internet Protocol Router Network (SIPRNET) net worthiness standards and evaluations.

This program also supports the DoD Training Transformation Initiative.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019	
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207601F / *USAF Modeling and Simulation*	**Project (Number/Name)** 674567 / *M&S Foundations*	

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Air, Space and Cyberspace Constructive Environment - Information Operations Suite (ACE-IOS)	0.000	6.814	6.943	-	6.943

Description: Provides the authoritative representation of Air Force information operations. ACE-IOS is comprised of models that support training and mission rehearsal for the Air Force, Joint Task Force commanders, and Combatant Commander battle staffs during Joint and Service exercises and experimentations.

FY 2019 Plans:
- Commence and complete ACE-IOS version 5.0.20
- Complete model Graphical User Interfaces (GUIs) for model and scenario control, orders entry, and all map displays
- Complete the implementation of Supervisory Control and Data Acquisition (SCADA) and cascading battlefield effects
- Complete database and data file build and populate tools for template and scenario development
- Complete track database, the store and playback capability requested by AOC and the Intel Schoolhouse
- Move to new Windows operating system for cross domain solution
- Commence migration to latest version of Red Hat Enterprise Linux (RHEL) operating system for ACE-IOS
- Commence to acquire Certification to Field awards (separate but parallel to A&A effort)

FY 2020 Base Plans:
- Will commence and complete ACE-IOS version 5.0.21
- Will commence and complete model transformation to open architecture
- Will commence and complete model certification and entry onto Air force Approved Product Lists for appropriate networks
- Will commence and complete the common ASCCE database
- Will commence and complete the Joint Data Translator as a service
- Will commence and complete the new design infrastructure database as a service
- Will commence and complete the migration of all graphics into a single we-based graphics system
- Will develop database population tools for all parametric data
- Will develop JNETS scenario builder
- Will commence and complete the sensor and reporting capability for 5th generation aircraft

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207601F / *USAF Modeling and Simulation*	**Project (Number/Name)** 674567 / *M&S Foundations*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
- Will commence and complete the development of tools for the model execution situational awareness and execution control ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Increase in FY20 funding due to inflation adjustment.					
Accomplishments/Planned Programs Subtotals	0.000	6.814	6.943	-	6.943

C. Other Program Funding Summary ($ in Millions)
  N/A
Remarks
  N/A

D. Acquisition Strategy
  The Acquisition goals of the Air, Space and Cyberspace Constructive Environment - Information Operations Suite (ACE-IOS) are achieved through incremental development of the project's M&S activities; all contracts are awarded using full and open competition. To meet evolving M&S technology, and the challenges of new requirements arriving almost daily, DMOC-C is an on-going, evolutionary effort to keep pace with those changes by continuously developing and upgrading environment generators, systems, and tools and to ensure integration and interoperability with other LVC systems to provide the best warfighter training possible.

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.

Exhibit R-3, **RDT&E Project Cost Analysis:** PB 2020 Air Force		**Date:** February 2019
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207601F / USAF Modeling and Simulation	**Project (Number/Name)** 674567 / M&S Foundations

Product Development ($ in Millions)				**FY 2018**		**FY 2019**		**FY 2020 Base**		**FY 2020 OCO**		**FY 2020 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**
Air, Space and Cyberspace Constructive Environment - Information Operations Suite (ACE-IOS)	C/Various	90th COS : Lackland AFB, TX	-	-		6.814	Dec 2018	6.943		-		6.943	Continuing	Continuing	-
Subtotal			-	-		6.814		6.943		-		6.943	Continuing	Continuing	N/A

Management Services ($ in Millions)				**FY 2018**		**FY 2019**		**FY 2020 Base**		**FY 2020 OCO**		**FY 2020 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**
Program Management Administration	C/CPFF	AFLCMC : Hanscom AFB, MA	-	-		-		-		-		-	Continuing	Continuing	-
Subtotal			-	-		-		-		-		-	Continuing	Continuing	N/A

	Prior Years	**FY 2018**		**FY 2019**		**FY 2020 Base**		**FY 2020 OCO**		**FY 2020 Total**	**Cost To Complete**	**Total Cost**	**Target Value of Contract**
Project Cost Totals	-	-		6.814		6.943		-		6.943	Continuing	Continuing	N/A

Remarks

Exhibit R-4, **RDT&E Schedule Profile:** PB 2020 Air Force		**Date:** February 2019
Appropriation/Budget Activity 3600 *I* 7	**R-1 Program Element (Number/Name)** PE 0207601F *I USAF Modeling and Simulation*	**Project (Number/Name)** 674567 *I M&S Foundations*

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Air, Space and Cyberspace Constructive Environment - Information Operations Suite (ACE-IOS)																												
- ACE-IOS v5.0.20					▬▬▬																							
- ACE-IOS v5.0.21							▬▬▬																					
- ACE-IOS v5.0.22									▬▬▬																			
- ACE-IOS v5.0.23												▬▬▬																
- ACE-IOS v5.0.24															▬▬▬													
- ACE-IOS v5.0.25																			▬▬▬									

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Air Force				Date: February 2019

Appropriation/Budget Activity 3600 I 7	R-1 Program Element (Number/Name) PE 0207601F I USAF Modeling and Simulation	Project (Number/Name) 674567 I M&S Foundations

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Air, Space and Cyberspace Constructive Environment - Information Operations Suite (ACE-IOS)				
- ACE-IOS v5.0.20	1	2019	4	2019
- ACE-IOS v5.0.21	1	2020	4	2020
- ACE-IOS v5.0.22	1	2021	4	2021
- ACE-IOS v5.0.23	1	2022	4	2022
- ACE-IOS v5.0.24	1	2023	4	2023
- ACE-IOS v5.0.25	1	2024	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019

Appropriation/Budget Activity 3600 I 7	R-1 Program Element (Number/Name) PE 0207601F I *USAF Modeling and Simulation*	Project (Number/Name) 675135 I *Warfighter Readiness*

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
675135: *Warfighter Readiness*	-	9.803	10.264	8.782	0.000	8.782	10.636	11.861	11.724	11.254	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

This program, BA 7, PE 0207601F, project 675135, Command & Control Simulation Environment for Training (C2SET), is a new start.

A. Mission Description and Budget Item Justification

Modeling and Simulation support to our Warfighter's Readiness is a United States Air Force (USAF) corporate imperative to ensure air, space, cyberspace training, and mission rehearsal activities are supported with realistic, interoperable, and readily available, tools, data, services and environments. Warfighter Readiness supports Department of Defense (DoD) Training Transformation (T2) and Joint National Training Capability (JNTC) along with the USAF priorities and core functions. Activities also include studies and analysis to support both current program planning, execution, and future program planning.

It includes several complimentary programs, initiatives and areas for investment: Warfighter and Joint Training Integration supports the Chief of Staff of the Air Force (CSAF) directed Live, Virtual, and Constructive (LVC) integration efforts and is a critical piece to the USAF's implementation of the Strategic Plan for Transforming DoD Training. The goal of LVC training and mission rehearsal is to prepare our warfighters for the full range of military operations and maintain the combat readiness levels required by the Combatant Commands. This can only be accomplished by training and rehearsing in realistic operational environments. These environments include live training ranges and virtual simulators enhanced with constructive entities. Specific training and mission rehearsal events can include some or all of these simultaneously; making the ability to integrate LVC capabilities a necessity.

The Air, Space, and Cyberspace Constructive Environment (ASCCE) is the USAF's authoritative federation of constructive training models and tools realistically representing the tactical and operational capabilities the USAF brings to the joint fight. This presently includes the Air Force Modeling and Simulation Training Toolkit (AFMSTT) and its follow on program Command & Control Simulation Environment for Training (C2SET), which provides the authoritative representation of AF and joint theater-level air and space power and is used to train Air and Space Operations Center (AOC) personnel and Combatant Commanders' battle staffs. The primary models in the AFMSTT are the Air Warfare Simulation (AWSIM) and Air Base Simulation (ABS).

This program element may include necessary civilian pay expenses required to manage, execute, and deliver AFMSTT and C2SET capability. 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, and 0605898F.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Air, Space, and Cyberspace Constructive Environment (ASCCE)/Air Force Modeling & Simulation Training Toolkit (AFMSTT)	9.803	10.264	8.282	0.000	8.282

Exhibit R-2A, **RDT&E Project Justification:** PB 2020 Air Force		**Date:** February 2019
Appropriation/Budget Activity 3600 *I* 7	**R-1 Program Element (Number/Name)** PE 0207601F *I USAF Modeling and Simulation*	**Project (Number/Name)** 675135 *I Warfighter Readiness*

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**
Description: Provides the authoritative representation of AF and joint theater-level air and space power and is used to train Air and Space Operations Center (AOC) personnel and Combatant Commanders' battle staffs. *FY 2019 Plans:* - Complete the development, test, and fielding of AFMSTT Version 6.1 - Commence AFMSTT Version 6.2 (formerly Version 6.3) development - Continue Risk Management Framework (RMF) accreditation; Java Message System (JMS) broker and distribution - Complete the transition to the AFMSTT Graphical Input Aggregate Control (GIAC) replacement mission control functionality and internal architecture - Address User Change Requests (CRs) - Commence integration with spiral Joint Live Virtual Constructive (JLVC) developments and new core Command & Control (C2) system interfaces associated with AOC Pathfinder - Complete long lead prototyping to thin client interfaces *FY 2020 Base Plans:* - Complete development, test, and fielding of AFMSTT Version 6.2 (formerly Version 6.3) - Continue integration with spiral JLVC developments - Continue new joint requirements and model interface changes to the Joint Federate Object Models (FOMs) - Continue modeling of real world environments and new C2 systems' interfaces to ensure continued accurate and realistic training - Initiate development and testing of AFMSTT Version 6.3 (Formerly Version 6.5) *FY 2020 OCO Plans:* N/A *FY 2019 to FY 2020 Increase/Decrease Statement:* Funding decreased due to transfer of funding to initiate work being formed for C2SET.					
Title: Command & Control Simulation Environment for Training (C2SET) *Description:* Provides the authoritative representation of AF and joint theater-level air and space power and is used to train AOC personnel and Combat Commander's battle staffs *FY 2019 Plans:*	0.000	0.000	0.500	0.000	0.500

Exhibit R-2A, RDT&E Project Justification: PB 2020 Air Force		Date: February 2019		

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0207601F / USAF Modeling and Simulation	Project (Number/Name) 675135 / Warfighter Readiness

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
N/A **FY 2020 Base Plans:** - Prepare documentation for request for quotes release **FY 2020 OCO Plans:** N/A **FY 2019 to FY 2020 Increase/Decrease Statement:** Funding increased to initiate work being performed for C2SET.					
Accomplishments/Planned Programs Subtotals	9.803	10.264	8.782	0.000	8.782

C. Other Program Funding Summary ($ in Millions)
 N/A

Remarks
 N/A

D. Acquisition Strategy
 The Air Force Life Cycle Management Center (AFLCMC) at Hanscom AFB, MA manages the project's acquisition process. AFLCMC develops the Air C2 constructive M&S models in direct support of AFAMS and the warfighter simulation centers. Their acquisition goals are achieved through incremental development in a sustainment through modernization approach. All major contracts are awarded using full and open competition.

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Air Force													**Date:** February 2019	
Appropriation/Budget Activity 3600 I 7								**R-1 Program Element (Number/Name)** PE 0207601F I *USAF Modeling and Simulation*					**Project (Number/Name)** 675135 I *Warfighter Readiness*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
AFMSTT/AWSIM	C/CPFF	Cole Engineering Services, Inc : Orlando, FL	-	7.881	Feb 2018	8.710	Feb 2019	7.109	Feb 2020	-		7.109	Continuing	Continuing	-
		Subtotal	-	7.881		8.710		7.109		-		7.109	Continuing	Continuing	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Verification and Validation	C/Various	AFLCMC : Hanscom AFB, MA	-	0.365	Oct 2017	0.180	Oct 2018	0.261	Oct 2019	-		0.261	Continuing	Continuing	-
		Subtotal	-	0.365		0.180		0.261		-		0.261	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Management Administration	C/Various	AFLCMC : Hanscom AFB, MA	-	1.557	Oct 2017	1.022	Oct 2018	0.560	Oct 2019	-		0.560	Continuing	Continuing	-
AFMSTT Systems Engineering	SS/Various	MITRE : Bedford, MA	-	-		0.352		0.352	Oct 2019	-		0.352	Continuing	Continuing	-
Program Management Administration C2SET	C/Various	AFLCMC : Hanscom AFB, MA	-	-		-		0.500	Oct 2019	-		0.500	Continuing	Continuing	-
		Subtotal	-	1.557		1.374		1.412		-		1.412	Continuing	Continuing	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	9.803		10.264		8.782		-		8.782	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Air Force		Date: February 2019
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 0207601F / *USAF Modeling and Simulation*	**Project (Number/Name)** 675135 / *Warfighter Readiness*

	FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Air, Space, and Cyberspace Constructive Environment (ASCCE)																												
- AFMSTT v6.1		▮	▮	▮	▮																							
- AFMSTT v6.2 (formerly v6.3)					▮	▮	▮	▮																				
- AFMSTT v6.3 (formerly v6.5)								▮	▮	▮	▮	▮																
- C2SET 1.0											▮	▮	▮	▮	▮													
- C2SET 2.0														▮	▮	▮	▮	▮										
- C2SET 3.0																		▮	▮	▮	▮	▮						
- C2SET 4.0																						▮	▮	▮	▮			

Exhibit R-4A, **RDT&E Schedule Details:** PB 2020 Air Force			**Date:** February 2019
Appropriation/Budget Activity 3600 *I* 7	**R-1 Program Element (Number/Name)** PE 0207601F *I USAF Modeling and Simulation*	**Project (Number/Name)** 675135 *I Warfighter Readiness*	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	**Year**	**Quarter**	**Year**
Air, Space, and Cyberspace Constructive Environment (ASCCE)				
- AFMSTT v6.1	2	2018	2	2019
- AFMSTT v6.2 (formerly v6.3)	2	2019	2	2020
- AFMSTT v6.3 (formerly v6.5)	2	2020	2	2021
- C2SET 1.0	2	2021	2	2022
- C2SET 2.0	2	2022	2	2023
- C2SET 3.0	2	2023	2	2024
- C2SET 4.0	2	2024	4	2024