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 1203173F / *Space and Missile Test and Evaluation Center*							
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	-	4.250	25.051	59.935	0.000	59.935	34.343	4.398	4.013	4.086	Continuing	Continuing
67A014: *R&D Space & Missile Operations*	-	4.250	25.051	2.626	0.000	2.626	4.567	4.398	4.013	4.086	Continuing	Continuing
673140: *Enterprise Ground Services EGS*	-	0.000	0.000	57.309	0.000	57.309	29.776	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Research and Development Space and Missile Operations (RDSMO) program, executed by the Advanced Systems and Development Directorate at Kirtland AFB, NM, conducts space and missile Research and Developmental Test and Evaluation (RDT&E) and Initial Operational Test and Evaluation (IOT&E) in support of experimental, demonstration, and operational satellites. The program develops, acquires, and operates satellite command and control (C2) and fixed/deployable telemetry, tracking, and commanding (TT&C) antenna systems in support of AF and DoD missions. The RDSMO program is responsible for the design, development, integration, testing, sustainment and operations of the Multi-Mission Satellite Operations Center (MMSOC) C2 systems installed in the RDT&E Support Complex (RSC) at Kirtland AFB, NM and Schriever AFB, CO.

The main objective of the MMSOC Development is to develop the capability to rapidly support R&D and operational systems and to transition R&D space vehicle technology with residual military utility to operational status for immediate warfighter support. MMSOC is a multiple mission operation system that uses standard software to (1) perform satellite C2 in support of launch requirements; (2) develop and test tactics, techniques, procedures and concepts to conduct satellite operations; (3) provide a satellite C2 incremental block evolution resource for RDT&E of new systems and concepts; and (4) deliver operational flexibility for new and currently flying assigned satellites. A secondary objective of MMSOC is to provide a foundational C2 platform and product line for the Enterprise Ground Services (EGS) effort to build upon and to meet the evolving initiatives of the current and future space domain.

This Program Element contains the EGS as part of the evolving current and future space domain. MMSOC capability will transition to become the EGS C2 product line. The EGS C2 product line will perform technology maturation, experiments, prototyping and operational mission transition for increased commonality and resiliency in space program ground systems. The RDSMO program will continue to support all mission sets described above as the EGS capability becomes the primary ground C2 system for AFSPC and other users. The main objective of the EGS is to provide a robust enterprise ground architecture for Air Force space systems. In FY 2019, EGS will focus efforts on developing and integrating data centers in laboratories at three separate sites, advanced concept exploration, prototype development and demonstrations, user experience maturation, training and Concept of Operations (CONOPS) refinement, cyber operations and operational mission training support. These efforts will require support such as systems engineering, integration and test, standards and interface development, architecture development, enhanced cybersecurity development and implementation.

The current and future space domain demands that space systems be responsive to new and changing threats, and can rapidly integrate new capabilities to make our warfighting force more resilient in a contested battlespace. This agility, survivability, and rapid reconstitution must extend through the entire space warfighting enterprise,

to include how we learn about the threat; develop solutions; acquire, test, deploy, train, operate and integrate new systems into the greater system of systems; and ensure our space mission force is ready to defeat a thinking adversary in a complex, multi-domain battlespace. The enterprise will use all of its elements to accelerate decision-making, prototype potential solutions, rapidly integrate decision-making tools and sustain a war-winning capability by delivering multi-domain effects in, from, and through space and cyberspace enabling battle management and resilience options to "fight through."

This program element may include necessary civilian pay expenses required to manage, execute, and deliver warfighting space capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 1206392F and 1206398F.

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 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	3.989	25.051	61.563	0.000	61.563
Current President's Budget	4.250	25.051	59.935	0.000	59.935
Total Adjustments	0.261	0.000	-1.628	0.000	-1.628
• 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	0.379	0.000			
• SBIR/STTR Transfer	-0.118	0.000			
• Other Adjustments	0.000	0.000	-1.628	0.000	-1.628

Change Summary Explanation

FY2019: rephrased $1.2M of FY19 funds to $.7M in FY20 and $.5M in FY21 because of prior year execution.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 1203173F / *Space and Missile Test and Evaluation Center*	Project (Number/Name) 67A014 / *R&D Space & Missile Operations*	

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
67A014: *R&D Space & Missile Operations*	-	4.250	25.051	2.626	0.000	2.626	4.567	4.398	4.013	4.086	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Research and Development Space and Missile Operations (RDSMO) program, executed by the Advanced Systems and Development Directorate at Kirtland AFB, NM, conducts space and missile Research and Developmental Test and Evaluation (RDT&E) and Initial Operational Test and Evaluation (IOT&E) in support of experimental, demonstration, and operational satellites. The program develops, acquires, and operates satellite command and control (C2) and fixed/deployable telemetry, tracking, and commanding (TT&C) antenna systems in support of AF and DoD missions. The RDSMO program is responsible for the design, development, integration, testing, sustainment and operations of the Multi-Mission Satellite Operations Center (MMSOC) C2 systems installed in the RDT&E Support Complex (RSC) at Kirtland AFB, NM and Schriever AFB, CO.

The main objective of the MMSOC Development is to develop the capability to rapidly support R&D and operational systems and to transition R&D space vehicle technology with residual military utility to operational status for immediate warfighter support. MMSOC is a multiple mission operation system that uses standard software to (1) perform satellite C2 in support of launch requirements; (2) develop and test tactics, techniques, procedures and concepts to conduct satellite operations; (3) provide a satellite C2 incremental block evolution resource for RDT&E of new systems and concepts; and (4) deliver operational flexibility for new and currently flying assigned satellites. A secondary objective of MMSOC is to provide a foundational C2 platform and product line for the Enterprise Ground Services (EGS) effort to build upon and to meet the evolving initiatives of the current and future space domain.

The current and future space domain demands that space systems be responsive to new and changing threats, and can rapidly integrate new capabilities to make our warfighting force more resilient in a contested battlespace. This agility, survivability, and rapid reconstitution must extend through the entire space warfighting enterprise, to include how we learn about the threat; develop solutions; acquire, test, deploy, train, operate and integrate new systems into the greater system of systems; and ensure our space mission force is ready to defeat a thinking adversary in a complex, multi-domain battlespace. The enterprise will use all of its elements to accelerate decision-making, prototype potential solutions, rapidly integrate decision-making tools and sustain a war-winning capability by delivering multi-domain effects in, from, and through space and cyberspace enabling battle management and resilience options to "fight through."

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: MMSOC Development	3.850	3.967	2.626
Description: Multi-Mission Satellite Operations Center (MMSOC) development/integration/test.			
FY 2018 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 67A014 / *R&D Space & Missile Operations*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Continue providing capability to AFSPC for reduced cost of operations and maintenance through evolution of MMSOC C2 architecture and automated processes to support the objectives of the EGS and the current and future space domain. Refine and continue to support operations of multiple satellites and enhance automation capability. Continue program office and other related support activities that may include, but are not limited to studies, technical analysis, etc. ***FY 2019 Plans:*** Continue providing capability to AFSPC for reduced cost of operations and maintenance through evolution of MMSOC C2 architecture and automated processes and integrate EGS backwards functionality into MMSOC. Transition Air Force Research Laboratory (AFRL)'s Evolved Expendable Launch Vehicle (EELV) Secondary Payload Adapter (ESPA) Augmented Geostationary Laboratory Experiment (EAGLE) and Mycroft Missions from Kirtland AFB to Schriever AFB. Transition all missions from the MMSOC 2.0 baseline to the 2.1 baseline. Decommission and dispose of the MMSOC 2.0 baseline. Onboard Long Duration Propulsive ESPA (LDPE)-1 mission C2 and provide backup to EGS mission schedule. Continue program office support and other related support activities. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to program office support, studies, technical analysis, prototyping, etc. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** FY 2019 decreased compared to FY 2018 by $1.341M. Justification for this decrease is described in plans above.			
Title: Enterprise Ground Services (EGS)	0.400	21.084	0.000
Description: Enterprise Ground Services (EGS) provides the Air Force with a robust enterprise ground architecture by creating a set of government standards and interfaces to flexibly manage and execute integrated and agile satellite operations (SATOPS) in a contested environment. EGS provides the complete operations solution for SATOPS at various classification levels with increased resiliency and capability, and improved cyber defense capabilities. EGS will enable a near-real-time common operating picture of enterprise-wide tactical health, status and indications, and warnings for Air Force satellites. The end-state will be a modern technical infrastructure which is cyber- secure and resilient against the Advanced Persistent Threat and employs streamlined architecting, acquisition, and operational processes. EGS operates as a key element of the current and future space domain, and leverages lessons learned, contracts and resources from the other elements of the Enterprise Space Battle Management Command and Control (ESBMC2) and Threat Warning and Response (TWAR). ***FY 2018 Plans:*** Continue to develop the initial prototype capability for a robust enterprise ground architecture. Continue developing the programmatic, technical, and architectural roadmap to enable the phased transition of mission partners to EGS.			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 67A014 / *R&D Space & Missile Operations*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
EGS effort specifically includes development of the EGS C2 data center, prototype demonstrations with the Space Based Infrared System (SBIRS) Highly Elliptical Orbit (HEO) payloads 1-4, cybersecurity development and implementation, standards and interface development, integration and test of mission unique software, and integration of common applications and services. Continue program office and other related support activities that may include, but are not limited to studies, technical analysis, etc. ***FY 2019 Plans:*** FY2019 plans are under the EGS Budget Program Activity Code (BPAC) (673140) within this Program Element. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Due to the creation of the EGS BPAC, FY 2019 decreased compared to FY 2018 by $21.084M. Justification for this decrease is described in the plans above. The net increase for EGS in this Program Element is $35.478M.			
Accomplishments/Planned Programs Subtotals	4.250	25.051	2.626

C. 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 834010 / 1203173F: *General Information Technology*	1.977	1.964	-	-	-	-	-	-	-	Continuing	Continuing
• SPAF 01 BP23 GNRLIT / 1203173F: *General Information Technology*	-	-	1.861	0.000	1.861	1.894	1.928	1.964	2.001	Continuing	Continuing

Remarks

As of the FY2019 PB submission, this effort has been recategorized from appropriation 3080, Other Procurement Air Force (OPAF) to appropriation 3021, Space Procurement Air Force (SPAF) in FY2019 and beyond. The FY2019 request is described in the SPAF P-1, BP23, GNRLIT, General Information Technology.

D. Acquisition Strategy

To modernize and sustain MMSOC; and to procure, integrate and test EGS prototypes for the SBIRS and ORS-5 prototyping projects, the Air Force will be competitively awarding a new Engineering, Development, Integration, and Sustainment (EDIS) Contract to replace the existing Engineering, Development, and Sustainment (EDS) Follow-On Contract. Additionally, MMSOC will be using a competitively awarded System Test and Engineering Contract, and a competitively awarded Advisory & Assistance Support (A&AS) contract. These contracts are all managed by the Space and Missile Systems Center (SMC), Advanced Systems and Development Directorate. Finally, key applications and support will be obtained from the Naval Research Lab (NRL).

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 67A014 / *R&D Space & Missile Operations*

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 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 67A014 / *R&D Space & Missile Operations*

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
Engineering, Development, and Sustainment (EDS) Follow-on Contract (MMSOC)	C/CPAF	Lockheed Martin : Santa Maria, CA	-	1.902	Oct 2016	1.201	Oct 2017	0.450	Oct 2018	-		0.450	Continuing	Continuing	-
Engineering, Development, Integration, and Sustainment (EDIS) Contract	C/CPAF	TBD : TBD, NM	-	-		-		0.450	Apr 2019	-		0.450	Continuing	Continuing	-
Neptune Common Ground Architecture	MIPR	Naval Research Lab : Washington, DC	-	0.968	Oct 2016	1.200	Oct 2017	0.602	Oct 2018	-		0.602	Continuing	Continuing	-
Service Bus Architecture Standards	MIPR	NASA Goddard : Greenbelt, MD	-	0.050	Oct 2016	0.050	Oct 2017	0.050	Oct 2018	-		0.050	Continuing	Continuing	-
Information Assurance (MMSOC)	MIPR	SAF/FMBIB : Albuquerque, NM	-	0.115	Oct 2016	0.118	Jan 2018	0.120	Jan 2019	-		0.120	Continuing	Continuing	-
Enterprise Ground Services (EGS)	Various	Various : CA	-	0.400	Jan 2017	21.084	Jan 2018	0.000		-		0.000	Continuing	Continuing	-
		Subtotal	-	3.435		23.653		1.672		-		1.672	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
System Test and Engineering Contract (STEC) (MMSOC)	C/CPAF	LINQUEST : Kirtland, AFB, NM	-	0.385	Oct 2016	0.498	Oct 2017	0.354	Oct 2018	-		0.354	Continuing	Continuing	-
		Subtotal	-	0.385		0.498		0.354		-		0.354	Continuing	Continuing	N/A

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 1203173F / *Space and Missile Test and Evaluation Center*	Project (Number/Name) 67A014 / *R&D Space & Missile Operations*	

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
A&AS	Various	Various : Kirtand, AFB, NM	-	0.430	Oct 2016	0.900	Oct 2017	0.600	Mar 2019	-		0.600	Continuing	Continuing	-
		Subtotal	-	0.430		0.900		0.600		-		0.600	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	4.250		25.051		2.626		-		2.626	Continuing	Continuing	N/A

Remarks

The costs for EGS for FY2019 and beyond are under the EGS Budget Program Activity Code (BPAC) (673140) within this Program Element.

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 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 67A014 / *R&D Space & Missile Operations*

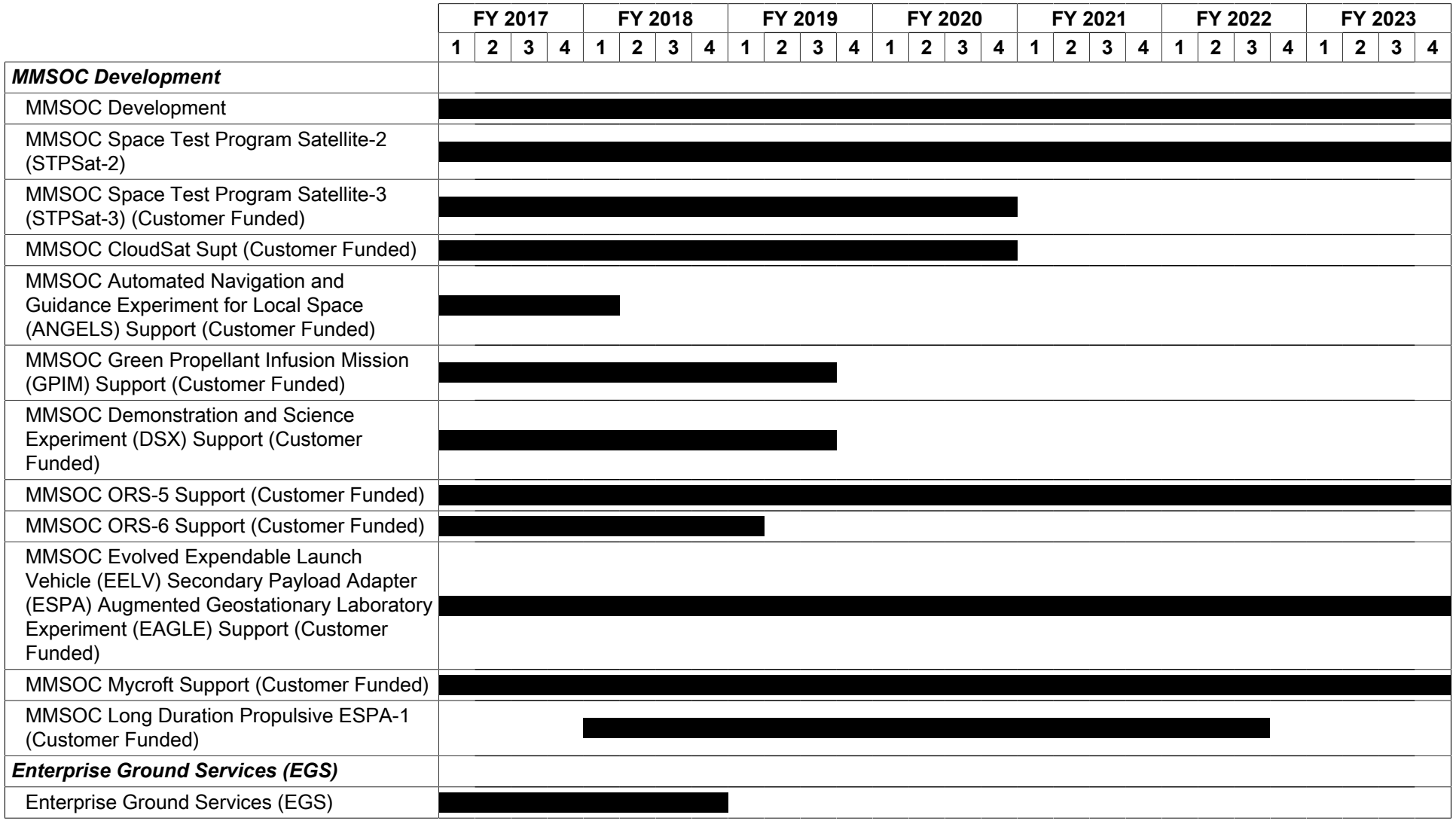

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 67A014 / *R&D Space & Missile Operations*

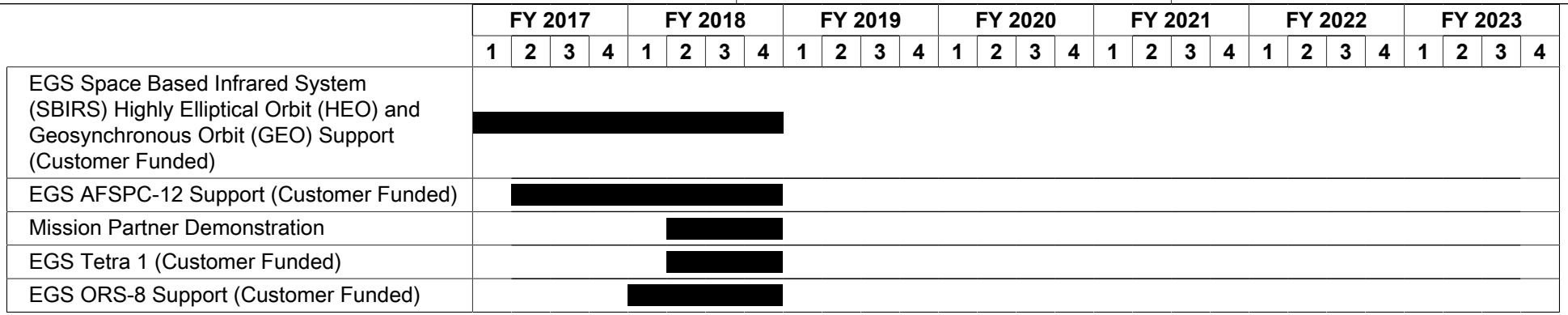

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 67A014 / *R&D Space & Missile Operations*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MMSOC Development				
MMSOC Development	1	2017	4	2023
MMSOC Space Test Program Satellite-2 (STPSat-2)	1	2017	4	2023
MMSOC Space Test Program Satellite-3 (STPSat-3) (Customer Funded)	1	2017	4	2020
MMSOC CloudSat Supt (Customer Funded)	1	2017	4	2020
MMSOC Automated Navigation and Guidance Experiment for Local Space (ANGELS) Support (Customer Funded)	1	2017	1	2018
MMSOC Green Propellant Infusion Mission (GPIM) Support (Customer Funded)	1	2017	3	2019
MMSOC Demonstration and Science Experiment (DSX) Support (Customer Funded)	1	2017	3	2019
MMSOC ORS-5 Support (Customer Funded)	1	2017	4	2023
MMSOC ORS-6 Support (Customer Funded)	1	2017	1	2019
MMSOC Evolved Expendable Launch Vehicle (EELV) Secondary Payload Adapter (ESPA) Augmented Geostationary Laboratory Experiment (EAGLE) Support (Customer Funded)	1	2017	4	2023
MMSOC Mycroft Support (Customer Funded)	1	2017	4	2023
MMSOC Long Duration Propulsive ESPA-1 (Customer Funded)	1	2018	3	2022
Enterprise Ground Services (EGS)				
Enterprise Ground Services (EGS)	1	2017	4	2018
EGS Space Based Infrared System (SBIRS) Highly Elliptical Orbit (HEO) and Geosynchronous Orbit (GEO) Support (Customer Funded)	1	2017	4	2018
EGS AFSPC-12 Support (Customer Funded)	2	2017	4	2018
Mission Partner Demonstration	2	2018	4	2018
EGS Tetra 1 (Customer Funded)	2	2018	4	2018

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 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 67A014 / *R&D Space & Missile Operations*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
EGS ORS-8 Support (Customer Funded)	1	2018	4	2018

Note

Note: This schedule reflects RDSMO support to the customer funded missions and may not directly align with customer program office schedules.

The schedule for EGS for FY2019 and beyond is under the EGS Budget Program Activity Code (BPAC) (673140) within this Program Element.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 1203173F / *Space and Missile Test and Evaluation Center*	Project (Number/Name) 673140 / *Enterprise Ground Services EGS*	

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
673140: *Enterprise Ground Services EGS*	-	0.000	0.000	57.309	0.000	57.309	29.776	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Enterprise Ground Services (EGS) program is part of the evolving current and future space domain demands. MMSOC capability will transition to become the EGS command and control (C2) product line. The EGS C2 product line will perform technology maturation, experiments, prototyping and operational mission transition for increased commonality and resiliency in space program ground systems. The EGS capability will become the primary ground C2 system for AFSPC and other users.

The main objective of the EGS is to provide a robust enterprise ground architecture for Air Force space systems. In FY 2019, EGS will focus efforts on developing and integrating data centers in laboratories at three separate sites, advanced concept exploration, prototype development and demonstrations, user experience maturation, training and Concept of Operations (CONOPS) refinement, cyber operations and operational mission training support. These efforts will require support such as systems engineering, integration and test, standards and interface development, architecture development, enhanced cybersecurity development and implementation.

The current and future space domain demands that space systems be responsive to new and changing threats, and can rapidly integrate new capabilities to make our warfighting force more resilient in a contested battlespace. This agility, survivability, and rapid reconstitution must extend through the entire space warfighting enterprise, to include how we learn about the threat; develop solutions; acquire, test, deploy, train, operate and integrate new systems into the greater system of systems; and ensure our space mission force is ready to defeat a thinking adversary in a complex, multi-domain battlespace. The enterprise will use all of its elements to accelerate decision-making, prototype potential solutions, rapidly integrate decision-making tools and sustain a war-winning capability by delivering multi-domain effects in, from, and through space and cyberspace enabling battle management and resilience options to "fight through."

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
Title: Enterprise Ground Services (EGS)	-	0.000	57.309
Description: Enterprise Ground Services (EGS) provides the Air Force with a robust enterprise ground architecture by creating a set of government standards and interfaces to flexibly manage and execute integrated and agile satellite operations (SATOPS) in a contested environment. EGS provides the complete operations solution for SATOPS at various classification levels with increased resiliency and capability, and improved cyber defense capabilities. EGS will enable a near-real-time common operating picture of enterprise-wide tactical health, status and indications, and warnings for Air Force satellites. The end-state will be a modern technical infrastructure which is cyber- secure and resilient against the Advanced Persistent Threat and employs streamlined architecting, acquisition, and operational processes. EGS operates as a key element of the current and future space domain, and leverages lessons learned, contracts and resources from the other elements of the Enterprise Space Battle Management Command and Control (ESBMC2) and Threat Warning and Response (TWAR).			

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 673140 / *Enterprise Ground Services EGS*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2017	FY 2018	FY 2019
FY 2018 Plans: FY2018 plans are under the R&D Space and Missile Operations Budget Program Activity Code (BPAC) (67A014) within this Program Element. ***FY 2019 Plans:*** Continue to enhance MMSOC capabilities in support of ongoing missions as EGS C2 matures and continue to develop the prototype capabilities for a robust enterprise ground architecture. Continue developing the programmatic, technical, and architectural roadmap to enable the phased transition of mission partners to EGS. Continue maturation of EGS laboratories, data centers, networks, and links. Continue prototype Mission Partner Demonstrations. Continue transition planning and prototype development to include but not limited to the SBIRS Geosynchronous Earth Orbit (GEO) satellite systems, EGS AFSPC-12 Support, Weather System Follow-on-Microwave, Tetra 1-3, ORS-8, and Long Duration Propulsive ESPA-2 vehicles. Continue cybersecurity development and implementation, standards and interface refinement, training and CONOPS refinement, advanced concept maturation, integration and test of mission unique software, and integration of common applications and services, Integrated Product Support, and integration efforts with current and future space domain capabilities. Rapidly respond to implement system resiliency and situational awareness necessary to operate in the contested space domain. Activities may include, but are not limited to program office support, studies, technical analysis, prototyping, etc. ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Due to the creation of this new BPAC, FY 2019 increased compared to FY 2018 by $57.309M. Justification for this increase is described in plans above. The net increase for EGS in this Program Element is $36.225M.			
Accomplishments/Planned Programs Subtotals	-	0.000	57.309

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

EGS leverages a multitude of contracts, agreements and other government agencies. Design, systems engineering and architecture support will be obtained from FFRDC (i.e. Aerospace and MITRE), Systems Engineering and integrations (SE&I) contracts, including University Affiliated Research Centers (UARC) for the EGS software development kit (SDK), and Advisory & Assistance Support (A&AS) contracts. System development and integration will be obtained from the Engineering, Development, Integration, and Sustainment (EDIS) contract which will be competitively awarded. Developmental Test & Evaluation Support will be obtained from the 46 Test Squadron and the competitively awarded System Test and Engineering Contract (STEC). Technology development will be obtained from AFRL Small Business Innovative Research (SBIR) initiatives. Prototypes for advanced concepts will leverage Other Transaction Authorities (OTA) agreements at SMC and other government agencies. Cybersecurity support will be obtained from Air Force Space Command 50th Space Wing and 50th Network Operations Group. Key applications and support

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 673140 / *Enterprise Ground Services EGS*

will be obtained from external government agencies such as National Aeronautics and Space (NASA) Goddard Missions Services Evolution Center (GMSEC) and the Naval Research Lab (NRL). Financial management and cost estimating support will continue to leverage existing contract vehicles.

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 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 673140 / *Enterprise Ground Services EGS*

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
Engineering, Development, Integration, and Sustainment (EDIS) Contract	C/CPAF	TBD : TBD, NM	-	0.000		0.000		15.545	Apr 2019	0.000		15.545	Continuing	Continuing	-
Neptune Common Ground Architecture	MIPR	Naval Research Lab : Washington, DC	-	0.000		0.000		8.225	Dec 2018	0.000		8.225	Continuing	Continuing	-
Information Assurance	MIPR	SAF/FMBIB : Los Angeles, CA	-	0.000		0.000		1.100	Dec 2018	0.000		1.100	Continuing	Continuing	-
Service Bus Architecture Standards	MIPR	NASA Goddard : Greenbelt, MD	-	0.000		0.000		1.400	Dec 2018	0.000		1.400	Continuing	Continuing	-
Systems Engineering & Integration	C/FFP	Linquest : Los Angeles, CA	-	0.000		0.000		8.515	Mar 2019	0.000		8.515	Continuing	Continuing	-
		Subtotal	-	0.000		0.000		34.785		0.000		34.785	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
System Test and Engineering Contract (STEC) (EGS)	C/CPAF	Linquest : Kirtland, AFB, NM	-	0.000		0.000		1.200	Nov 2018	0.000		1.200	Continuing	Continuing	-
Developmental Test & Evaluation (DT&E)	MIPR	46th Test Squadron : Eglin, AFB, FL	-	0.000		0.000		1.100	Jan 2019	0.000		1.100	Continuing	Continuing	-
		Subtotal	-	0.000		0.000		2.300		0.000		2.300	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
FFRDC (Aerospace)	MIPR	Aerospace : Los Angeles, CA	-	0.000		0.000		11.479	Oct 2018	0.000		11.479	Continuing	Continuing	-

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 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 673140 / *Enterprise Ground Services EGS*

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
FFRDC (MITRE)	SS/CPAF	MITRE : Los Angeles, CA	-	0.000		0.000		5.345	Oct 2018	0.000		5.345	Continuing	Continuing	-
Other	Various	Various : Los Angeles, CA	-	0.000		0.000		2.000	Oct 2018	0.000		2.000	Continuing	Continuing	-
A&AS Support (SAFS)	Various	Tecolote : Los Angeles, CA	-	0.000		0.000		1.400	Oct 2018	0.000		1.400	Continuing	Continuing	-
		Subtotal	-	0.000		0.000		20.224		0.000		20.224	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	0.000		0.000		57.309		0.000		57.309	Continuing	Continuing	N/A

Remarks

The costs for EGS for FY2017 and FY2018 are under the R&D Space & Missile Operations Budget Program Activity Code (BPAC) (67A014) within this Program Element.

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 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 673140 / *Enterprise Ground Services EGS*

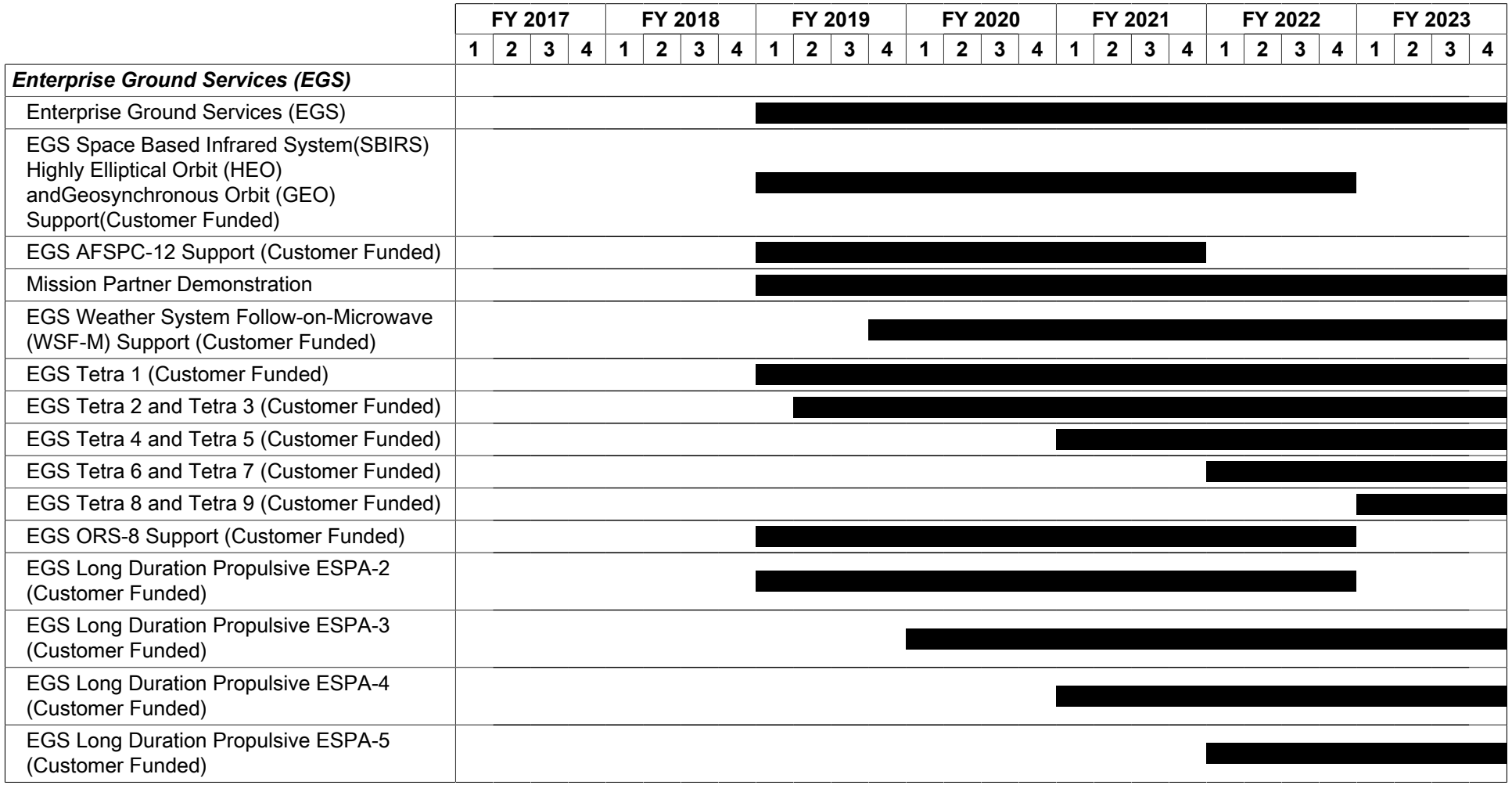

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	**R-1 Program Element (Number/Name)** PE 1203173F / *Space and Missile Test and Evaluation Center*	**Project (Number/Name)** 673140 / *Enterprise Ground Services EGS*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Enterprise Ground Services (EGS)				
Enterprise Ground Services (EGS)	1	2019	4	2023
EGS Space Based Infrared System(SBIRS) Highly Elliptical Orbit (HEO) andGeosynchronous Orbit (GEO) Support(Customer Funded)	1	2019	4	2022
EGS AFSPC-12 Support (Customer Funded)	1	2019	4	2021
Mission Partner Demonstration	1	2019	4	2023
EGS Weather System Follow-on-Microwave (WSF-M) Support (Customer Funded)	4	2019	4	2023
EGS Tetra 1 (Customer Funded)	1	2019	4	2023
EGS Tetra 2 and Tetra 3 (Customer Funded)	2	2019	4	2023
EGS Tetra 4 and Tetra 5 (Customer Funded)	1	2021	4	2023
EGS Tetra 6 and Tetra 7 (Customer Funded)	1	2022	4	2023
EGS Tetra 8 and Tetra 9 (Customer Funded)	1	2023	4	2023
EGS ORS-8 Support (Customer Funded)	1	2019	4	2022
EGS Long Duration Propulsive ESPA-2 (Customer Funded)	1	2019	4	2022
EGS Long Duration Propulsive ESPA-3 (Customer Funded)	1	2020	4	2023
EGS Long Duration Propulsive ESPA-4 (Customer Funded)	1	2021	4	2023
EGS Long Duration Propulsive ESPA-5 (Customer Funded)	1	2022	4	2023

Note

The schedule for EGS for FY2017 and FY2018 is under the R&D Space & Missile Operations Budget Program Activity Code (BPAC) (67A014) within this Program Element.