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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 1203173F / <i>Space and Missile Test and Evaluation Center</i>
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COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	-	69.785	4.566	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
67A014: <i>R&D Space & Missile Operations</i>	-	9.041	4.566	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
673140: <i>Enterprise Ground Services EGS</i>	-	60.744	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Note

In FY2020, funding for the Enterprise Ground Services (EGS) Project 673140 was transferred to a dedicated Program Element (1206770F). In FY2021, PE 1203173F, Space and Missile Test and Evaluation Center efforts were transferred to Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1203173SF Space and Missile Test and Evaluation Center from Appropriation 3600, Budget Activity 07 due to the creation of a new Appropriation for Space Force.

A. Mission Description and Budget Item Justification

The Research and Development Space and Missile Operations (RDSMO) program, executed by the Innovation and Prototyping 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 prototype experimental, demonstration, and operational satellites at the RDT&E Support Complex (RSC) and the Mobile Range Flight (MRF) at Kirtland, NM and at Schriever AFB, CO. The RDSMO program develops, acquires, delivers, integrates, tests, operates and sustains the Multi-Mission Satellite Operations Center (MMSOC) satellite command and control (C2) Ground System Enterprise (GSE) and fixed/deployable telemetry, tracking, and commanding (TT&C) antenna systems in support of AF and DoD missions. The RDSMO program is responsible for transitions of designated satellite missions to the operational command upon user needs. In addition, RDSMO supports the deployment and sustainment of Enterprise Ground Services (EGS) in multiple locations as AFSPC transitions to an Enterprise-based ground C2. Funds in the General Information Technology (Space) line procures Information Technology products to support RDSMO.

The primary objective of the MMSOC C2/GSE environment is to develop the capability to rapidly support R&D, prototype 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 hardware and software infrastructure 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 satellite and C2 systems and concepts; and (4) deliver operational flexibility for new and legacy satellite missions. 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 enterprise.

Space acquisition must respond with speed and agility to emerging adversary threats. Space and Missile Systems Center (SMC) is transforming the organization and implementation of space acquisition to an enterprise approach, maximizing innovation and resiliency, leveraging international, commercial, and mission partnerships, and managing program/project priorities according to an integrated unclassified /classified enterprise space architecture. Expanding the appropriate acquisition authorities and contract mechanism to deliver capability sooner, SMC will strategically execute experimentation, prototyping, risk reduction, and other efforts to develop

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new, or repurpose capabilities.

This program 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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	79.935	4.566	4.398	0.000	4.398
Current President's Budget	69.785	4.566	0.000	0.000	0.000
Total Adjustments	-10.150	0.000	-4.398	0.000	-4.398
• 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	-7.400	0.000			
• SBIR/STTR Transfer	-2.750	0.000			
• Other Adjustments	0.000	0.000	-4.398	0.000	-4.398

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 673140: *Enterprise Ground Services EGS*

Congressional Add: *Space Enterprise Defense Implementation*

Congressional Add Subtotals for Project: 673140

Congressional Add Totals for all Projects

	FY 2019	FY 2020
	19.312	-
	19.312	-
	19.312	-

Change Summary Explanation

FY 2019: $-\$7.400\text{M}$ reflects the net change of a $-\$10.000\text{M}$ decrease for the Next-Generation Overhead Persistent Infrared (Next-Gen OPIR) Above Threshold Reprogramming and a $\$2.600\text{M}$ Below Threshold Reprogramming for RSC modernization.

FY 2021: $-\$4.397\text{M}$; funds starting in FY 2021 were transferred from RDT&E, Air Force to RDT&E, Space Force.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 1203173F / <i>Space and Missile Test and Evaluation Center</i>				Project (Number/Name) 67A014 / <i>R&D Space & Missile Operations</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
67A014: <i>R&D Space & Missile Operations</i>	-	9.041	4.566	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY2021, PE 1203173F, Space and Missile Test and Evaluation Center efforts were transferred to Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1203173SF Space and Missile Test and Evaluation Center from Appropriation 3600, Budget Activity 07 due to the creation of a new Appropriation for Space Force.

A. Mission Description and Budget Item Justification

The Research and Development Space and Missile Operations (RDSMO) program, executed by the Innovation and Prototyping 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 prototype experimental, demonstration, and operational satellites at the RDT&E Support Complex (RSC) and the Mobile Range Flight (MRF) at Kirtland, NM and at Schriever AFB, CO. The RDSMO program develops, acquires, delivers, integrates, tests, operates and sustains the Multi-Mission Satellite Operations Center (MMSOC) satellite command and control (C2) Ground System Enterprise (GSE) and fixed/deployable telemetry, tracking, and commanding (TT&C) antenna systems in support of AF and DoD missions and transitions designated satellite missions to the operational command upon user needs. In addition, RDSMO supports the deployment and sustainment of Enterprise Ground Services (EGS) in multiple locations as US Space Force (USSF) HQ transitions to an Enterprise-based ground C2. Funds in the General Information Technology (Space) line in appropriation 3021, Space Procurement Air Force, procures Information Technology products to support RDSMO.

The primary objective of the MMSOC C2/GSE environment is to develop the capability to rapidly support R&D, prototype 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 hardware and software infrastructure 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 satellite and C2 systems and concepts; and (4) deliver operational flexibility for new and legacy satellite missions. 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 enterprise.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: MMSOC Development	9.041	4.566	0.000
Description: Evolution of the Ground Services Architecture (GSA) through the Multi-Mission Satellite Operations Center (MMSOC). Development, integration, and test of common services for space vehicle prototype and operational capabilities, including shared orbital analysis and mission planning tools, data distribution and dissemination, cyber defense, cloud computing, multi-security level operations, and enhanced ground entry points for geosynchronous proto-ops.			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 1203173F / <i>Space and Missile Test and Evaluation Center</i>	Project (Number/Name) 67A014 / <i>R&D Space & Missile Operations</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
<p>FY 2020 Plans: Continue providing capability to US Space Force (USSF) HQ for reduced cost of operations and maintenance through evolution of MMSOC C2 architecture and automated processes and integrate EGS backwards functionality into MMSOC C2. Decommission and dispose of this MMSOC 2.0 baseline. Continue LDPE-1 mission C2 and provide backup to EGS mission schedule. Begin support to the AFSPC-12 payload, Navigation Technology Satellite 3 (NTS-3) and Tetra prototyping projects. Continue program office and other related support activities that may include, but are not limited to studies, technical analysis, prototyping, etc.</p> <p>FY 2021 Plans: N/A</p> <p>FY 2020 to FY 2021 Increase/Decrease Statement: N/A</p>			
Accomplishments/Planned Programs Subtotals	9.041	4.566	0.000

C. Other Program Funding Summary (\$ in Millions)												
<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>	
• SPAF 01 GNRLIT: <i>General Information Tech - Space</i>	1.361	1.894	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Remarks
In FY2021, P-1 Line Item GNRLIT/General Information Technology efforts were transferred to Appropriation 3022F, Procurement, Space Force, from Appropriation 3021F due to the creation of a new Appropriation for Space Force.

D. Acquisition Strategy
Modernize ground system capabilities and leverage MMSOC sustainment as a test bed for new ground service development, integration testing and operationalization. This includes integration and testing of early EGS prototypes for the Space Based Infra-Red System (SBIRS) Highly Elliptical Orbit (HEO) Migration to EGS (HOME), Operationally Responsive Space (ORS)-5, Evolved Expendable Launch Vehicle (EELV) Secondary Payload Adapter (ESPA) Augmented Geostationary Laboratory Experiment (EAGLE), Mycroft, Long Duration Propulsive ESPA (LDPE), AFSPC-12 payload, NTS-3 and Tetra prototyping projects, the Space Force competitively awarded the new Engineering, Development, Integration, and Sustainment (EDIS) Contract to support MMSOC, MRF and EGS activities. Additionally, MMSOC is using a competitively awarded Space Test and Engineering Contract (STEC) and uses Advisory & Assistance Support (A&AS) contracts. These contracts are all managed by Space and Missile Systems Center (SMC).

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force												Date: February 2020			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
3600 / 7				PE 1203173F / Space and Missile Test and Evaluation Center				67A014 / R&D Space & Missile Operations							
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Ground Services R&D Engineering, Development, Integration, and Test	C/Various	Various : TBD	-	1.175	Jan 2019	1.449	Oct 2019	0.000		-		0.000	Continuing	Continuing	-
RSC Modernization	Various	Various : TBD	-	4.884	Apr 2019	-		-		-		-	Continuing	Continuing	-
LDPE Development, Integration, and Test	Various	Various : TBD	-	1.164	Jun 2019	-		-		-		-	Continuing	Continuing	-
Core Services Development and Configuration	MIPR	Various : TBD	-	0.395	Oct 2018	1.100	Nov 2019	0.000		-		0.000	Continuing	Continuing	-
Service Bus Architecture Standards	MIPR	NASA Goddard : Greenbelt, MD	-	0.050	May 2019	0.050	May 2020	0.000		-		0.000	Continuing	Continuing	-
Information Assurance Engineering	MIPR	SAF/FMBIB : Albuquerque, NM	-	0.123	Jan 2019	0.250	Jan 2020	0.000		-		0.000	Continuing	Continuing	-
Subtotal			-	7.791		2.849		0.000		-		0.000	Continuing	Continuing	N/A
Test and Evaluation (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
Space Test and Engineering Contract (STEC) (MMSOC)	C/CPAF	LINQUEST : Kirtland, AFB, NM	-	0.246	Nov 2018	0.400	Nov 2019	0.000		-		0.000	Continuing	Continuing	-
Subtotal			-	0.246		0.400		0.000		-		0.000	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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
A&AS- METIS	Various	Various : Kirtland, AFB, NM	-	1.004	Mar 2019	1.317	Mar 2020	0.000		-		0.000	Continuing	Continuing	-
Subtotal			-	1.004		1.317		0.000		-		0.000	Continuing	Continuing	N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force								Date: February 2020			
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 1203173F / <i>Space and Missile Test and Evaluation Center</i>				Project (Number/Name) 67A014 / <i>R&D Space & Missile Operations</i>			
	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals	-	9.041	4.566	0.000	-	0.000	Continuing	Continuing	N/A		

Remarks
 In FY2021, PE 1203173F, Space and Missile Test and Evaluation Center efforts were transferred to Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1203173SF Space and Missile Test and Evaluation Center from Appropriation 3600, Budget Activity 07 due to the creation of a new Appropriation for Space Force.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 1203173F / <i>Space and Missile Test and Evaluation Center</i>	Project (Number/Name) 67A014 / <i>R&D Space & Missile Operations</i>
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	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	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

Long Duration Propulsive ESPA (LDPE)- Tetra																												
AFSPC-12 Payload Support																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 1203173F / <i>Space and Missile Test and Evaluation Center</i>	Project (Number/Name) 67A014 / <i>R&D Space & Missile Operations</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
MMSOC Development				
MMSOC Ground Services Architecture (GSA) Evolution	1	2019	4	2020
GSA Backwards Compatibility, Test, and Mission Schedule Relief	2	2019	4	2020
Core Services Development and Configuration	1	2019	4	2020
MMSOC Space Test Program Satellite-2 (STPSat-2)	1	2019	4	2020
MMSOC Space Test Program Satellite-3 (STPSat-3) (Customer Funded)	1	2019	4	2020
MMSOC CloudSat Supt (Customer Funded)	1	2019	4	2020
MMSOC Green Propellant Infusion Mission (GPIM) Support (Customer Funded)	1	2019	4	2020
MMSOC Demonstration and Science Experiment (DSX) Support (Customer Funded)	1	2019	4	2020
MMSOC ORS-5 Support (Customer Funded)	1	2019	4	2020
Navigation Technology Satellite NTS-3	1	2020	4	2020
MMSOC Evolved Expendable Launch Vehicle (EELV) Secondary Payload Adapter (ESPA) Augmented Geostationary Laboratory Experiment (EAGLE) Support (Customer Funded)	1	2019	4	2020
MMSOC Mycroft Support (Customer Funded)	1	2019	4	2020
MMSOC Long Duration Propulsive ESPA-1 (Customer Funded)	1	2019	4	2020
Long Duration Propulsive ESPA (LDPE)- Tetra	1	2019	4	2020
AFSPC-12 Payload Support	1	2020	4	2020

Note

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

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 1203173F / <i>Space and Missile Test and Evaluation Center</i>	Project (Number/Name) 67A014 / <i>R&D Space & Missile Operations</i>

In FY2021, PE 1203173F, Space and Missile Test and Evaluation Center efforts were transferred to Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1203173SF Space and Missile Test and Evaluation Center from Appropriation 3600, Budget Activity 07 due to the creation of a new Appropriation for Space Force.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 1203173F / <i>Space and Missile Test and Evaluation Center</i>				Project (Number/Name) 673140 / <i>Enterprise Ground Services EGS</i>			
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
673140: <i>Enterprise Ground Services EGS</i>	-	60.744	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

In FY 2020, funding for the Enterprise Ground Services (EGS) Project 673140 was transferred to a dedicated Program Element (1206770F).

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 US Space Force (USSF) HQ and other users.

The main objective of the EGS is to provide a robust enterprise ground architecture for Air Force space systems. 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.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: Enterprise Ground Services (EGS)	41.432	0.000	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 2020 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 1203173F / <i>Space and Missile Test and Evaluation Center</i>	Project (Number/Name) 673140 / <i>Enterprise Ground Services EGS</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
N/A			
FY 2021 Plans: N/A			
FY 2020 to FY 2021 Increase/Decrease Statement: N/A			
Accomplishments/Planned Programs Subtotals	41.432	0.000	0.000

	FY 2019	FY 2020
Congressional Add: Space Enterprise Defense Implementation	19.312	-
FY 2019 Accomplishments: The Congressional Add funds, less \$0.688M SBIR transfer, supports EGS expanding on the prototypes to scale services to support more missions. The funds were used to develop and to field operational services consistent with incremental deliveries and agile development. Specific areas included: adding additional software developers, documenting development for mission partners to enable adoption of EGS services, transitioning services into an operational environment to prototype agile Ops Acceptance of individual services, and increased accreditation and security support to the project office.		
Congressional Adds Subtotals	19.312	-

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

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• RDTE 07 1206770F: <i>Enterprise Ground Services</i>	-	118.870	-	-	-	-	-	-	-	-	Continuing Continuing

Remarks
In FY 2020, funding for EGS was transferred to the new EGS Program Element (1206770F).

D. Acquisition Strategy

The EGS acquisition strategy focuses on rapidly delivering C2 prototypes and operational capabilities to warfighters, while leveraging industry best practices for agile development and continuous integration /deliver (CI/CD). One of the key tenets of the EGS acquisition strategy is to maintain government ownership of the technical baseline. As a result, EGS uses a combination of existing and new contracts, and agreements with industry and academia to procure prototypes, platform as a service (PaaS) capabilities, system engineering services, and pre-operations support for mission users. Leverage existing contracts in FY19 and continue consolidation of contracts into FY 2020.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 1203173F / <i>Space and Missile Test and Evaluation Center</i>	Project (Number/Name) 673140 / <i>Enterprise Ground Services EGS</i>
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Product Development	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Pre-Ops Support	Various	Various : Various	-	2.179	Jan 2019	-		-		-		-	Continuing	Continuing	-
H/W, S/W and Integration	Various	Various : TBD	-	5.835	Dec 2018	-		-		-		-	Continuing	Continuing	-
Technical Mission Analysis (FFRDC Aerospace Direct Costs)	MIPR	Aerospace : El Segundo, CA	-	4.177	Nov 2018	-		-		-		-	Continuing	Continuing	-
Development	Various	Various : TBD	-	17.684	Dec 2018	-		-		-		-	Continuing	Continuing	-
Space Engineering & Integration	Various	Various : Various	-	17.810	Nov 2018	-		-		-		-	Continuing	Continuing	-
Subtotal			-	47.685		-		-		-		-	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Management Services	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
FFRDC (Aerospace)	MIPR	Aerospace : Los Angeles, CA	-	6.068	Oct 2018	-		-		-		-	Continuing	Continuing	-
Other	Various	Various : Los Angeles, CA	-	0.368	Oct 2018	-		-		-		-	Continuing	Continuing	-
A&AS Support	Various	Various : Los Angeles, CA	-	6.623	Oct 2018	-		-		-		-	Continuing	Continuing	-
Subtotal			-	13.059		-		-		-		-	Continuing	Continuing	N/A

	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		-	60.744	0.000	-	-	-	Continuing	Continuing	N/A

Remarks
The costs for EGS beginning in FY 2020, were transferred to the new EGS Program Element (1206770F).

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 1203173F / <i>Space and Missile Test and Evaluation Center</i>	Project (Number/Name) 673140 / <i>Enterprise Ground Services EGS</i>

FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
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

EGS	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
System Integration Lab (SIL)	██████████																											
Space Management Battle Lab (SMBL)	██████████																											
Development to Operations (DevOps)	██████████																											
BAFB	██████████																											
SAFB	██████████																											
KAFB	██████████																											
EGS Pre-Ops Support	██████████																											

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 1203173F / <i>Space and Missile Test and Evaluation Center</i>	Project (Number/Name) 673140 / <i>Enterprise Ground Services EGS</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
EGS				
System Integration Lab (SIL)	1	2019	4	2019
Space Management Battle Lab (SMBL)	1	2019	4	2019
Development to Operations (DevOps)	1	2019	4	2019
BAFB	1	2019	4	2019
SAFB	1	2019	4	2019
KAFB	1	2019	4	2019
EGS Pre-Ops Support	1	2019	4	2019

Note

The schedule for EGS beginning in FY 2020, was transferred to the new EGS Program Element (1206770F).