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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Air Force **Date:** March 2023

<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 1206415F / <i>U.S. Space Command Research and Development Support</i>
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COST (\$ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
Total Program Element	-	0.000	8.350	14.892	0.000	14.892	12.698	13.013	13.262	13.927	Continuing	Continuing
641234: <i>USSPACECOM Rapid Prototype Demonstration</i>	-	0.000	8.350	14.892	0.000	14.892	12.698	13.013	13.262	13.927	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

U.S. Space Command Research and Development support program integrates existing space-based capabilities from the Services and the Intelligence Community, overlaid with Commercial/Industry innovations, leveraging Joint Space rapid experimentation and demonstrations to build a comprehensive military advantage in Space. Promoting responsible behaviors in space, advocating for greater space capabilities, and collaborating with Industry partners are foundational to achieving National Space objectives. This shall be accomplished by accelerating technology demonstrations and rapid operational prototyping, plus assessing current and future space-based effects via model-based analysis. Such capabilities include but are not limited to; improved space battlespace awareness, to include use of commercial capabilities, joint fires to provide terrestrial near real-time targeting, Joint command and control, responsive launch/responsive space, and improvements of defensive space capabilities against an array of threats, resulting in confidence of assured space-based capabilities for the future fight. Capitalizing on Industry Innovations to develop future technical capabilities is vital to maintaining a competitive Space advantage. Moreover, this program supports the National Space Policy of the United States of America, "... to demonstrate United States leadership in space-related fora and activities to strengthen deterrence and assure allies and partnerships of its commitment to preserving the safety, stability, security, and long-term sustainability of space activities ...".

This effort is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024 Base</b>	<b>FY 2024 OCO</b>	<b>FY 2024 Total</b>
Previous President's Budget	0.000	10.350	10.379	0.000	10.379
Current President's Budget	0.000	8.350	14.892	0.000	14.892
Total Adjustments	0.000	-2.000	4.513	0.000	4.513
• Congressional General Reductions	0.000	-2.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	0.000	0.000	4.513	0.000	4.513

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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
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<p><b>Title:</b> Space Modeling, Simulation, and Analysis</p> <p><b>Description:</b> Program models existing and potentially new space-based capabilities from the Services and the Intelligence Community, overlaid with Commercial/Industry innovations, leveraging Joint Space rapid experimentation and demonstrations to build a comprehensive military advantage in Space.</p> <p><b>FY 2023 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue development of software and tools to model contested space</li> <li>- Continue updates to software, tools, models, and data at the mission- and campaign-level to inform senior leaders evolving inquiries and decisions on space investments, requirements, acquisition, operational COAs, operational risk, and future planning</li> <li>- Develop and modify user-friendly, front-end campaign-level and mission-level M&amp;S software and tools supporting sufficiently accurate and very timely exploratory analytics to optimize operational planning, wargaming, and concepts</li> <li>- Leverage model-based analysis of current and future space-based effects to effect technology demonstrations and rapid operational prototyping opportunities</li> <li>- Capitalize on Industry Innovations to develop future technical capabilities via Accelerator/Incubator collaboration, derived from risk-reduction modeling of space effects</li> <li>- In coordination with USSF /S9, continue assessing and integrating enterprise-level model data for MW, ISR, and SATCOM capabilities into campaign-level modeling</li> <li>- In coordination with DAF (Air Force Studies, Analysis, and Assessments), develop a schedule to identify requirements toward implementation of instantiation of space effects in a contested space environment</li> <li>- Support cost benefit analyses of Space Control activities with quantifiable impacts to warfighter operations</li> </ul> <p><b>FY 2024 Plans:</b></p> <ul style="list-style-type: none"> <li>- Continue development of software and tools to model contested space</li> <li>- Continue updates to software, tools, models, and data at the mission- and campaign-level to inform senior leaders evolving inquiries and decisions on space investments, requirements, acquisition, operational COAs, operational risk, and future planning</li> <li>- Develop and modify user-friendly, front-end campaign-level and mission-level M&amp;S software and tools supporting sufficiently accurate and very timely exploratory analytics to optimize operational planning, wargaming, and concepts</li> <li>- Leverage model-based analysis of current and future space-based effects to effect technology demonstrations and rapid operational prototyping opportunities</li> <li>- Capitalize on Industry Innovations to develop future technical capabilities via Accelerator/Incubator collaboration, derived from risk-reduction modeling of space effects</li> <li>- In coordination with USSF /S9, continue assessing and integrating enterprise-level model data for MW, ISR, and SATCOM capabilities into campaign-level modeling</li> </ul>	0.000	8.350	14.892
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<b>Appropriation/Budget Activity</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 1206415F / <i>U.S. Space Command Research and Development Support</i>
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<b>C. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<ul style="list-style-type: none"> <li>- In coordination with DAF (Air Force Studies, Analysis, and Assessments), develop a schedule to identify requirements toward implementation of instantiation of space effects in a contested space environment</li> <li>- Support cost benefit analyses of Space Control activities with quantifiable impacts to warfighter operations</li> </ul> <p><b><i>FY 2023 to FY 2024 Increase/Decrease Statement:</i></b> Increased to account for inflation.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	0.000	8.350	14.892

**D. Other Program Funding Summary (\$ in Millions)**

N/A

**Remarks**

**E. Acquisition Strategy**

Any new projects funded in this program will be awarded using competitive procedures to the maximum extent possible.

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2024 Air Force</b>												<b>Date: March 2023</b>			
<b>Appropriation/Budget Activity</b> 3600 / 4				<b>R-1 Program Element (Number/Name)</b> PE 1206415F / U.S. Space Command Research and Development Support				<b>Project (Number/Name)</b> 641234 / USSPACECOM Rapid Prototype Demonstration							
<b>Product Development (\$ in Millions)</b>				<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Development of software and tools to model contested space	Various	Not specified. : TBD	-	-		8.350	Oct 2022	14.892	Oct 2023	-		14.892	Continuing	Continuing	-
<b>Subtotal</b>			-	-		8.350		14.892		-		14.892	Continuing	Continuing	N/A
			<b>Prior Years</b>	<b>FY 2022</b>		<b>FY 2023</b>		<b>FY 2024 Base</b>		<b>FY 2024 OCO</b>		<b>FY 2024 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>			-	-		8.350		14.892		-		14.892	Continuing	Continuing	N/A
<b>Remarks</b>															



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2024 Air Force		<b>Date:</b> March 2023
<b>Appropriation/Budget Activity</b> 3600 / 4	<b>R-1 Program Element (Number/Name)</b> PE 1206415F / <i>U.S. Space Command Research and Development Support</i>	<b>Project (Number/Name)</b> 641234 / <i>USSPACECOM Rapid Prototype Demonstration</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>Campaign level modeling</i></b>				
Run developed mission threads per CCMD AOR using NDS vignettes for integration into mission and campaign level modeling	1	2023	3	2023
Start analysis and complete results	2	2023	4	2023
Update space mission and space campaign level M&S to inform senior leaders evolving inquiries and decisions on innovation, space investments, rapid acquisition, operational COAs, risk, and planning	1	2024	3	2024
Develop additional software and tools to model contested space environment with commercial integration contributions (SDA, SATCOM, ISR) modeled to support terrestrial warfighting	1	2024	4	2024
Develop additional software and tools to model contested space environment with commercial integration contributions (SDA, SATCOM, ISR) modeled to support USSC assigned AOR	1	2025	2	2028