

**UNCLASSIFIED**

**Exhibit R-2, RDT&E Budget Item Justification:** PB 2023 Space Development Agency **Date:** April 2022

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 1206310SDA / <i>Space Science and Technology Research and Development</i>
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	0.000	69.914	172.638	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	-
012: <i>Space Development Agency R&amp;E</i>	0.000	69.914	172.638	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	-

**Note**

In accordance with the William M. (Mac) Thornberry National Defense Authorization Act (NDAA) for FY 2021, effective on October 1, 2022, SDA will be an element of the U.S. Space Force (USSF), and report to Assistant Secretary of the Air Force (ASAF) for Space Acquisition and Integration (ASAF/SA&I) with respect to acquisition decisions and directly to the Chief of Space Operations with respect to requirements decisions, personnel decisions, and any other matter not covered by ASAF/SA&I. This program and funding continue in FY 2023 forward under Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1206310SF.

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

SDA is developing and demonstrating next generation space capabilities for the joint warfighter enabled by proliferation of satellites and a new acquisition model utilizing rapid spiral development. SDA is developing capabilities to address a wide range of the Department of Defense (DoD) space needs as stated in the National Defense Strategy and the DoD Space Vision, including low-latency tactical communication, beyond-line-of-sight targeting, and advanced missile tracking. Specifically, SDA will demonstrate and field persistent, resilient capabilities needed to be responsive to emerging multi-domain threats against the U.S. national interest. SDA is responsible for the overall programmatic development and execution of a National Defense Space Architecture (NDSA). In coordination with other DoD Space stakeholders, SDA will drive the development of space capabilities to achieve the DoD Space Vision and reduce overlap and inefficiency. SDA will expand the DoD's space warfighting capability and foster growth in the U.S. space industrial base, by developing enhanced government-commercial relationships and international collaborations with key allies and partners.

While SDA is not responsible for building and fielding all capabilities within the NDSA, the Agency is responsible for orchestrating and architecting the NDSA and ensuring capability delivery to the warfighter following a spiral development approach. SDA is building and fielding the Transport Layer, a proliferated constellation of satellites to provide low-latency, high-volume data to the warfighter. This transport layer will provide the space-based data transport backbone for Joint All-Domain Command and Control (JADC2).

The establishment of a proliferated data transport layer is essential to developing a new and responsive space architecture. SDA will leverage the Transport Layer to integrate and deliver multiple warfighting capabilities, such as advanced missile warning and tracking, 24/7/365 custody of time critical targets, and alternative position, navigation and timing (PNT) in navigation warfare (NAVWAR) resilient environments.

This program element funds efforts to develop and demonstrate a prototype proliferated communications and data transport layer and other capability layers in support of the National Defense Strategy.

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<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	<b>R-1 Program Element (Number/Name)</b> PE 1206310SDA / <i>Space Science and Technology Research and Development</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>
Previous President's Budget	72.422	172.638	0.000	0.000	0.000
Current President's Budget	69.914	172.638	0.000	0.000	0.000
Total Adjustments	-2.508	0.000	0.000	0.000	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.508	-			

**Change Summary Explanation**

FY 2021 funding in the amount of \$2.508 million was transferred to SBIR/STTR PE 0605502SDA.

Funding continues in FY 2023 and out under Appropriation 3620, Research, Development, Test & Evaluation, Space Force, PE 1206310SF.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Space Development Agency										<b>Date:</b> April 2022		
<b>Appropriation/Budget Activity</b> 0400 / 3					<b>R-1 Program Element (Number/Name)</b> PE 1206310SDA / <i>Space Science and Technology Research and Development</i>				<b>Project (Number/Name)</b> 012 / <i>Space Development Agency R&amp;E</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
012: <i>Space Development Agency R&amp;E</i>	0.000	69.914	172.638	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	-

**Note**

Funding for FY 2023 and future years has been transferred to a new Program Element (PE), 1206310SF, under the U.S. Space Force (USSF), Research, Development, Test and Evaluation, appropriation.

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

The Space Development Agency (SDA) is developing and demonstrating next generation space capabilities for the joint warfighter enabled by proliferation of satellites and a new acquisition model utilizing rapid spiral development. SDA is developing capabilities to address a wide range of Department of Defense (DoD) space needs as stated in the National Defense Strategy and DoD Space Vision, including low-latency tactical communication, beyond line of sight targeting, and advanced missile tracking. SDA will orchestrate the rapid development and fielding of the National Defense Space Architecture (NDSA), a resilient military sensing and data transport capability via a proliferated space architecture in low-earth orbit.

This program element funds the research and development activity to deliver capabilities to U.S. joint warfighting forces in two-year tranches, beginning in FY 2022, including performing trade studies, technical analyses, or modeling and simulation; identifying and maturing enabling technologies; defining and conducting risk reduction demonstrations, prototyping hardware or software systems; and exploring novel concepts for future warfighting capabilities.

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

	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<b>Title:</b> Space Development Agency R&E	69.914	172.638	-
<b>Description:</b> Research and development activities to support development, demonstration, and fielding of a resilient military sensing and data transport capability via a proliferated space architecture in Low Earth Orbit (LEO).			
<b>FY 2022 Plans:</b>			
Tranche 0			
- Demonstrate alternate position, navigation, and timing orbit and clock software.			
- Perform ground-based processing of missile tracking scene data collected in FY 2021.			
- Develop and conduct ground-based demonstration of multi-intelligence data fusion algorithms on flight-like systems and in flight-like environments.			
- Develop algorithms for integrated battle management, command, control, and communications (BMC3) applications.			
Tranche 1			

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<b>Appropriation/Budget Activity</b> 0400 / 3	<b>R-1 Program Element (Number/Name)</b> PE 1206310SDA / <i>Space Science and Technology Research and Development</i>	<b>Project (Number/Name)</b> 012 / <i>Space Development Agency R&amp;E</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<ul style="list-style-type: none"> <li>- Begin Transport space vehicle system design.</li> <li>- Continue design and analysis efforts for TACSATCOM payloads planned for demonstration in Tranche 1 and proliferation beginning with NDSA Tranche 2.</li> <li>- Complete space vehicle-specific interface control documents for Partner Payload Program participants.</li> </ul> <p><b><i>FY 2022 to FY 2023 Increase/Decrease Statement:</i></b> The program continues in the USSF PE 1206310SF.</p>			
<b>Accomplishments/Planned Programs Subtotals</b>	69.914	172.638	-

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• RDTE BA 03: <i>1206310SF, Space Science &amp; Technology R&amp;D</i>	0.000	0.000	460.820	0.000	460.820	690.386	527.806	540.040	550.556	Continuing	Continuing

**Remarks**  
N/A

**D. Acquisition Strategy**  
Partners for these activities include DoD research centers, small businesses, large defense contractors, commercial space providers, Federally Funded Research and Development Centers, University Affiliated Research Centers, Missile Defense Agency (MDA), and Space Systems Command (SSC). SDA is also a transition partner for technology developers seeking to conduct on-orbit experimentation and prototyping.