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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2024 Space Development Agency **Date:** March 2023

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 6:</i> <i>RDT&amp;E Management Support</i>	<b>R-1 Program Element (Number/Name)</b> PE 0605502SDA / <i>Small Business Innovation Research (SBIR)</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	9.249	49.975	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
197: <i>Small Business Innovation Research</i>	8.109	43.814	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
198: <i>Small Business Technology Transfer</i>	1.140	6.161	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing

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

The goals of the Small Business Innovation Research (SBIR) program are to stimulate technological innovation, increase private sector commercialization of federal research and development (R&D), increase small business participation in federally funded R&D, and foster participation by minority and disadvantaged firms in technological innovation. Leveraging the innovation of small business concerns is an important contributor to the development of the cutting edge technologies that will generate decisive and sustained U.S. military advantages by increasing the readiness, modernization and lethality of the Joint Force. This program supports high priority projects within the DoD Components, their missions, and the Warfighter. The goals of the Small Business Technology Transfer (STTR) program are to stimulate a partnership of ideas between small business concerns (SBCs) and research institutions through DoD funded research or research and development (R/R&D). By providing awards to SBCs or cooperative R/R&D efforts with research institutions, the DoD supports innovation and economic growth to generate decisive and sustained U.S. military advantages. This program supports high priority projects within the DoD Components, their missions, and the Warfighter.

**B. Program Change Summary (\$ in Millions)**

	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024 Base</u>	<u>FY 2024 OCO</u>	<u>FY 2024 Total</u>
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	49.975	0.000	0.000	-	0.000
Total Adjustments	49.975	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	49.975	-			

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<b>Appropriation/Budget Activity</b> 0400 / 6					<b>R-1 Program Element (Number/Name)</b> PE 0605502SDA / <i>Small Business Innovation Research (SBIR)</i>				<b>Project (Number/Name)</b> 197 / <i>Small Business Innovation Research</i>			
<b>COST (\$ in Millions)</b>	<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>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
197: <i>Small Business Innovation Research</i>	8.109	43.814	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In accordance with the William M. (Mac) Thornberry National Defense Authorization Act (NDAA) for FY 2021, effective on October 1, 2022, SDA is an element of the U.S. Space Force (USSF), and reports 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.

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

The goals of the Small Business Innovation Research (SBIR) program are to stimulate technological innovation, increase private sector commercialization of federal research and development (R&D), increase small business participation in federally funded R&D, and foster participation by minority and disadvantaged firms in technological innovation. Leveraging the innovation of small business concerns is an important contributor to the development of the cutting edge technologies that will generate decisive and sustained U.S. military advantages by increasing the readiness, modernization and lethality of the Joint Force. This program supports high priority projects within the DoD Components, their missions, and the Warfighter.

Numerous, capable small businesses are driving down the cost of accessing and utilizing space, which is accelerating the commoditization of space hardware and software. The SDA highly leverages the SBIR program to invest in the research, development, and demonstration of innovative technologies from these small businesses that support the modernization of our national defense space capabilities. These SBIR opportunities have the potential to enhance future tranches and inform the spiral development projects that demonstrate enhanced warfighter capability via proliferated a low Earth orbit architecture. This program has sought investments in the following space-based technology areas : laser communications; novel antenna steering methods; data networking; automated encryption; on-orbit data fusion algorithms; reduced size, weight, and power multi-modal sensors; higher accuracy, low latency information processing; and space-related modeling and simulation testbeds.

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

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Title:</b> Small Business Innovation Research	43.814	-	-
<b>Description:</b> This project funds small business research and development activities providing analysis products and enabling technologies and capabilities for the Proliferated Warfighter Space Architecture (PWSA).			
In FY 2022, SDA funded proposals from the following topics:			
- Free-Space Optical Communication (FSOC) Technology for Optical Intersatellite Links (OISLs)			
- Integrated Architecture Technology (IAT)			

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<b>B. 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>- Mesh Network NSA Certifiable Cryptographic Solution</li> <li>- Prototype On-Orbit Experimental Testbed (POET)</li> </ul> <p>A portion of the remaining funding will be sent to AFWERX, a United States Air Force program with the goal of fostering a culture of innovation within the service. SDA will work with AFWERX to release agency-specific topics and potentially fund proposals submitted through their open solicitation.</p>				
<b>Accomplishments/Planned Programs Subtotals</b>		43.814	-	-
<b>C. Other Program Funding Summary (\$ in Millions)</b>				
N/A				
<b>Remarks</b>				
<b>D. Acquisition Strategy</b>				
Partners for these activities include small businesses.				

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<b>COST (\$ in Millions)</b>	<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>FY 2025</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
198: <i>Small Business Technology Transfer</i>	1.140	6.161	0.000	0.000	-	0.000	0.000	0.000	0.000	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

**Note**

In accordance with the William M. (Mac) Thornberry National Defense Authorization Act (NDAA) for FY 2021, effective on October 1, 2022, SDA is an element of the U.S. Space Force (USSF), and reports 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.

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

The goals of the Small Business Technology Transfer (STTR) program are to stimulate a partnership of ideas between small business concerns (SBCs) and research institutions through DoD funded research or research and development (R/R&D). By providing awards to SBCs or cooperative R/R&D efforts with research institutions, DoD supports innovation and economic growth to generate decisive and sustained U.S. military advantages. This program supports high priority projects within the DoD Components, their missions, and the Warfighter.

SDA leverages STTR funds to support the collaborative development of defense space technologies by small businesses partnering with U.S. research institutions. By supporting such partnerships between emerging technology development companies and leading research organizations, SDA will help to foster the growth of a stronger, more integrated space industrial base while addressing our nation's greatest technical challenges in space. These STTR opportunities have the potential to enhance future tranches and inform the overall architecture of spiral development projects to demonstrate warfighter capability via proliferated low Earth orbit.

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

	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Title:</b> Small Business Technology Transfer	6.161	-	-
<b>Description:</b> This project supports collaborative research and development activities by small businesses and research institutions providing enabling technologies and capabilities for the Proliferated Warfighter Space Architecture (PWSA).			
In FY 2022, SDA funded proposals from the following topics: - Mesh Network NSA Certifiable Cryptographic Solution - Target Recognition and Acquisition in Complex Environments (TRACE)			
A portion of the remaining funding will be sent to AFWERX, a United States Air Force program with the goal of fostering a culture of innovation within the service. SDA will work with AFWERX to release agency-specific topics and potentially fund proposals submitted through their open solicitation.			

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>
<b>Accomplishments/Planned Programs Subtotals</b>	6.161	-	-

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

N/A

**Remarks**

**D. Acquisition Strategy**

Partners for these activities include small businesses teamed with a non-profit research institution.