Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Office of the Secretary Of Defense	Date: April 2022
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*

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	22.000	30.108	16.178	24.402	-	24.402	24.414	24.435	24.768	25.008	Continuing	Continuing
843: *DIU Prototyping*	22.000	30.108	7.022	9.189	-	9.189	9.200	9.245	9.578	9.816	Continuing	Continuing
844: *National Security Innovation Capital*	0.000	0.000	9.156	15.213	-	15.213	15.214	15.190	15.190	15.192	Continuing	Continuing

Note

New Start (Y/N): No

A. Mission Description and Budget Item Justification

This program supports the Department's initiatives to Build a Sustainable and Long-Term Advantage, and Build a Resilient Joint Force and Defense Ecosystem.

The Defense Innovation Unit (DIU) mission is to strengthen U.S. national security by accelerating the adoption of commercial technology throughout the military and growing the national security innovation base. DIU partners with organizations across the DoD and the interagency to rapidly prototype, field, and scale commercial solutions that can save lives, lead to new operational concepts, increase efficiencies, and save taxpayer dollars. With offices in Silicon Valley, Boston, Austin, Chicago, and in the Pentagon, DIU is able to attract the best and brightest talent and cutting-edge solutions.

The National Defense Strategy for FY 2022 asserts that we have returned to an era of inter-state strategic competition with Russia and China, heightening the sense of urgency with which the nation, and Department of Defense (DoD), must reform our acquisition policies and approach to sustaining military-technical superiority. Notably, 11 of the 14 critical technology focus areas are dual use and rapidly developed by the commercial sector. While adversaries are challenging the U.S. across several dimensions, most importantly, our near peer competitors are at par or ahead of the United States in critical technology areas. Consistent with the FY 2023 Office of Management and Budget (OMB)/Office of Science and Technology Policy (OSTP) research and development budget priorities, this new era of competition requires technological superiority to ensure the United States' ability to project power, maintain international norms and rule of law, provide credible deterrence, and prevail in conflict.

DIU increases the Department's access to commercial technologies and talent, with the ultimate goal of fielding leading-edge technology to warfighters at the speed of relevance. Working across the country, and in collaboration with our allies and partners, DIU is developing new ways of doing business, growing our national security innovation base to include more "non-traditional" companies that had previously not collaborated with the military, working with traditional vendors in novel ways to increase efficiency, and challenging innovators to share their knowledge and expertise in support of our nation's defense.

Through a competitive prototype process, DIU identifies and provides access to technology companies and products on behalf of DoD organizations. Additionally, DIU executes projects to leverage commercial sector technology analogous to military applications thereby increasing dual-use technology agility for the DoD. DIU Prototyping funds facilitate the award of projects that can augment commercial technologies, existing government-owned capabilities, or concepts for defense application.

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Office of the Secretary Of Defense	Date: April 2022
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*

DIU focuses on six technology areas where commercial industry is the lead:

• Artificial Intelligence (AI)/ Machine Learning (ML) – Applying AI/ML learning to accelerate critical decision making and operational impact.
• Autonomy – Adopting and countering autonomous systems with a focus on human-machine interaction and scalable teaming.
• Cyber – Making enterprise combat information open, accessible, and secure for defense personnel across the globe.
• Energy - Leveraging proven advancement in energy and materials technology to enhance capabilities and strengthen resilience across installation and distributed operations.
• Human Systems – Optimizing the human system and its enabling platforms through enhanced equipment, innovative training, and novel health applications.
• Space – Developing on-demand access to space, persistent satellite capabilities, and broadband space data transfer.

B. Program Change Summary ($ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	30.108	11.213	0.000	-	0.000
Current President's Budget	30.108	16.178	24.402	-	24.402
Total Adjustments	0.000	4.965	24.402	-	24.402
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	5.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• FFRDC	-	-0.035	-	-	-
• Adjustments to Budget Year	-	-	14.832	-	14.832
• Economic Assumption	-	-	0.530	-	0.530
• National Security Innovation Capital	-	-	9.040	-	9.040

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Project: 843: *DIU Prototyping*		
Congressional Add: *Pilot Program on Talent Management: Gig Eagle*	3.000	-
Congressional Add: *National Security Innovation Capital*	15.000	-
Congressional Add Subtotals for Project: 843	18.000	-
Project: 844: *National Security Innovation Capital*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Office of the Secretary Of Defense	Date: April 2022
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2021	FY 2022
Congressional Add: *Long Duration Energy Storage, including Lithium Batteries*	-	5.000
Congressional Add Subtotals for Project: 844	-	5.000
Congressional Add Totals for all Projects	18.000	5.000

Change Summary Explanation

In FY 2022, the program received an increase of $5 million for long duration energy storage, including lithium batteries.

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

The FY 2023 funding request increase is to meet the Department's expanding demand for Commercial Solutions Openings (CSO) and contract awards for prototyping through Other Transaction Authority (OTA). Throughput of the DIU CSO and OTA process is expected to double by FY 2023 while the time to award process is simultaneously expected to decrease by as much as 50% (from 120 days to 60 days).

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense			Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604341D8Z / *DIU Prototyping*	Project (Number/Name) 843 / *DIU Prototyping*	

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
843: *DIU Prototyping*	22.000	30.108	7.022	9.189	-	9.189	9.200	9.245	9.578	9.816	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Defense Innovation Unit (DIU) mission is to strengthen U.S. national security by accelerating the adoption of commercial technology throughout the military and growing the national security innovation base. DIU partners with organizations across the DoD and the interagency to rapidly prototype, field, and scale commercial solutions that can save lives, lead to new operational concepts, increase efficiencies, and save taxpayer dollars. With offices in Silicon Valley, Boston, Austin, Chicago, and in the Pentagon, DIU is able to attract the best and brightest talent and cutting-edge solutions.

The National Defense Strategy for FY 2022 asserts that we have returned to an era of inter-state strategic competition with Russia and China, heightening the sense of urgency with which the nation, and Department of Defense (DoD), must reform our acquisition policies and approach to sustaining military-technical superiority. Notably, 11 of the 14 critical technology focus areas are dual use and rapidly developed by the commercial sector. While adversaries are challenging the U.S. across several dimensions, most importantly, our near peer competitors are at par or ahead of the United States in critical technology areas. Consistent with the FY 2023 Office of Management and Budget (OMB)/Office of Science and Technology Policy (OSTP) research and development budget priorities, this new era of competition requires technological superiority to ensure the United States' ability to project power, maintain international norms and rule of law, provide credible deterrence, and prevail in conflict.

DIU increases the Department's access to commercial technologies and talent, with the ultimate goal of fielding leading-edge technology to warfighters at the speed of relevance. Working across the country, and in collaboration with our allies and partners, DIU is developing new ways of doing business, growing our national security innovation base to include more "non-traditional" companies that had previously not collaborated with the military, working with traditional vendors in novel ways to increase efficiency, and challenging innovators to share their knowledge and expertise in support of our nation's defense.

Through a competitive prototype process, DIU identifies and provides access to technology companies and products on behalf of DoD organizations. Additionally, DIU executes projects to leverage commercial sector technology analogous to military applications thereby increasing dual-use technology agility for the DoD. DIU Prototyping funds facilitate the award of projects that can augment commercial technologies, existing government-owned capabilities, or concepts for defense application.

DIU focuses on six technology areas where commercial industry is the lead:

• Artificial Intelligence (AI)/ Machine Learning (ML) – Applying AI/ML learning to accelerate critical decision making and operational impact.
• Autonomy – Adopting and countering autonomous systems with a focus on human-machine interaction and scalable teaming.
• Cyber – Making enterprise combat information open, accessible, and secure for defense personnel across the globe.
• Energy - Leveraging proven advancement in energy and materials technology to enhance capabilities and strengthen resilience across installation and distributed operations.

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*

• Human Systems – Optimizing the human system and its enabling platforms through enhanced equipment, innovative training, and novel health applications.
• Space – Developing on-demand access to space, persistent satellite capabilities, and broadband space data transfer.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: Defense Innovation Unit (DIU) Prototyping	12.108	7.022	9.189
Description: DIU executes its mission through partnerships with Services, combatant commands, and other DoD organizations to prototype commercial solutions and scale across the Joint Force. ***FY 2022 Plans:*** In FY 2022, DIU Prototyping funds will facilitate additional follow-on prototype contract awards of projects and scale proven solutions across the Joint Force. ***FY 2023 Plans:*** In FY 2023, DIU Prototyping funds will facilitate additional follow-on prototype contract awards of projects and scale proven solutions across the Joint Force. ***FY 2022 to FY 2023 Increase/Decrease Statement:*** The FY 2023 funding request increase is to meet the Department's expanding demand for Commercial Solutions Openings (CSO) and contract awards for prototyping through Other Transaction Authority (OTA). Throughput of the DIU CSO and OTA process is expected to double by FY 2023 while the award process is simultaneously expected to decrease by as much as 50% (from 120 days to 60 days).			
Accomplishments/Planned Programs Subtotals	12.108	7.022	9.189

	FY 2021	FY 2022
Congressional Add: Pilot Program on Talent Management: Gig Eagle	3.000	-
FY 2021 Accomplishments: The intent of the Gig Eagle program is to develop a department-wide talent optimization marketplace for military personnel in the Reserve and Guard Components. The initial customer will be the U.S. Air Force, but each of the military departments are currently implementing various talent management reforms designed to allow military units to identify and access Servicemembers with pertinent and necessary experiences that might otherwise go unnoticed using traditional military assignment processes. Talent optimization efforts like Gig Eagle, which leverage commercial tools, promise to help the Department leverage the civilian and private sector skill sets of Reservists/Service members that are difficult for military units to develop or access within the regular force. The first iteration will focus on unlocking talent of the Reserve Components. The second iteration will expand the Gig Eagle talent pool to select active-duty members, civilians, inactive ready reserves members and other		

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*

	FY 2021	FY 2022
Department of Defense (DoD) personnel. The third iteration will further expand the talent pool beyond existing DoD employees, opening up access to the world's best non-DoD talent.		
Congressional Add: National Security Innovation Capital ***FY 2021 Accomplishments:*** In FY 2021 NSIC received an appropriation of $15M from Congress. Launched in March 2021, NSIC received more than 100 applications and utilized that appropriation to fund contracts with nine startup companies engaged across the five different Topics of Interest described above. Those products being developed by those companies involved the following technologies, among others: hypersonic, quantum phenomena and microelectronics. Contracts ranged from $500,000 to $3,000,000 over periods of performance between twelve and eighteen months, for first engineering design to production process prototype. The companies are located across the country including TX, SC, MI, MA, CO and CA. NSIC funding includes vetting for adversarial capital, and in two cases, NSIC funding led to the removal of such capital. *Resources will be executed in project 844 NSIC*	15.000	-
Congressional Adds Subtotals	18.000	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

DIU primarily utilized Title 10 U.S. Code § 2371b authority to prototype projects to enhance military effectiveness through the Commercial Solutions Opening (CSO) process.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Office of the Secretary Of Defense			Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DIU Prototyping	MIPR	Various : Various	0.159	12.311	Jan 2021	7.022		9.189		-		9.189	Continuing	Continuing	-
Autonomy	C/FFP	Various : Various	3.328	0.322		-		-		-		-	Continuing	Continuing	-
Cyber	C/FFP	Various : Various	3.820	-		-		-		-		-	Continuing	Continuing	-
Human System	C/FFP	Various : Various	2.756	0.735		-		-		-		-	Continuing	Continuing	-
Space	C/FFP	Various : Various	6.937	1.740		-		-		-		-	Continuing	Continuing	-
COVID	C/FFP	Various : Various	5.000	-		-		-		-		-	Continuing	Continuing	-
AE&M	C/FFP	Various : Various	0.000	-		-		-		-		-	Continuing	Continuing	-
National Security Innovation Capital	MIPR	Various : Various	-	15.000	Jan 2022	-		-		-		-	Continuing	Continuing	-
		Subtotal	22.000	30.108		7.022		9.189		-		9.189	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	22.000	30.108		7.022		9.189		-		9.189	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*

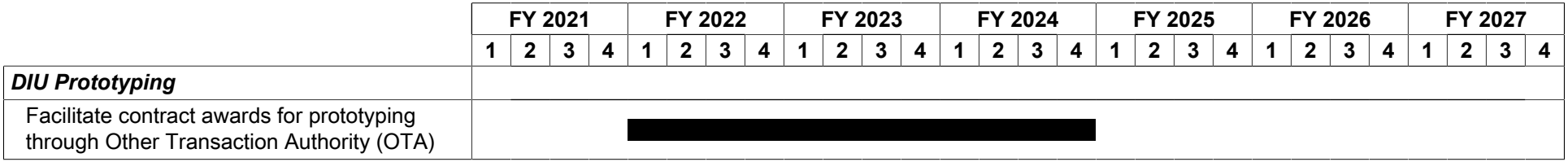

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
DIU Prototyping				
Facilitate contract awards for prototyping through Other Transaction Authority (OTA)	1	2022	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense			Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604341D8Z / *DIU Prototyping*	Project (Number/Name) 844 / *National Security Innovation Capital*	

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
844: *National Security Innovation Capital*	0.000	0.000	9.156	15.213	-	15.213	15.214	15.190	15.190	15.192	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of NSIC is to accelerate the development of dual-use hardware technologies critical to our national security and economic competitiveness. It is an initiative that enables dual-use hardware startups to advance key milestones in their product development by addressing the shortfall of private investment from trusted sources. NSIC's support enables companies to develop their technologies and products more rapidly. The resulting reductions in technical risk, along with the signaling of DoD interest in such dual-use companies, attracts trusted private investment that might otherwise sit on the sidelines. The overall result is more rapid and robust development of hardware in the U.S., the expansion of the defense industrial base and reduction of technology flow to adversaries.

Initial broad areas of focus are autonomy, communications, power, sensors and space.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
Title: National Security Innovation Capital (NSIC)	-	4.156	15.213
Description: In FY 2021 NSIC received an appropriation of $15M from Congress. NSIC utilized that appropriation to fund contracts with nine startup companies whose technologies covered the five different Topics of Interest described above. Those technologies involved, among others: hypersonics, quantum phenomena and microelectronics. Contracts ranged from $500,000 to $3,000,000 over periods of performance between twelve and eighteen months. The companies are located across the country including TX, SC, MI, MA, CO and CA. This $15 million congressional add was executed in Project Code P843 of this Program Element. This $15 million congressional add, was executed in Project Code P843 of this Program Element. ***FY 2022 Plans:*** In FY 2022, NSIC will continue funding dual-use hardware startups developing products in autonomy, communications, power, sensors and space. Depending on the scope of the individual projects, NSIC will support requirements for several (three or four) companies with the $5,000,000 budgeted. ***FY 2023 Plans:*** As in FY 2022,NSIC will continue funding dual-use hardware startups developing products in autonomy, communications, power, sensors and space. Depending on the scope of the individual projects, NSIC will support up to ten companies with the $15,000,000 budgeted. ***FY 2022 to FY 2023 Increase/Decrease Statement:***			

Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 844 / *National Security Innovation Capital*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2021	FY 2022	FY 2023
As noted, NSIC launched with a congressional add of $15 million in FY 2021. The FY 2022 budget of $4 million was a 66% reduction. Only three to four contracts can be awarded. That level of activity is not sustainable - it is not at a scale that will have meaningful impact and it would be difficult to maintain the interest of the hardware startup and venture capital communities. The increase in FY 2023 enables NSIC to award eight to ten contracts, which is critical to building on the momentum and credibility that has been established.			
Accomplishments/Planned Programs Subtotals	-	4.156	15.213

	FY 2021	FY 2022
Congressional Add: Long Duration Energy Storage, including Lithium Batteries	-	5.000
FY 2022 Plans: DIU will rapidly prototype and deploy Battery Energy Storage Systems (BESS) to increase the resiliency of DoD power systems. Current BESS (or generators) support resiliency up to 4 to 8 hours. By using various chemistries and configurations from commercial BESS solutions, DIU will prototype solutions with up to 100 hours of battery storage. This will increase the resiliency and readiness of multiple DoD installations that directly support military operations. *Resources will be executed in project 843 DIU Prototyping*		
Congressional Adds Subtotals	-	5.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

NSIC primarily utilizes Title 10 U.S. Code § 2371b Other Transactions Authority to prototype projects to further develop dual-use, hardware-based technologies that are critical to the military through the Commercial Acceleration Opportunity (CAO) process.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Office of the Secretary Of Defense			Date: April 2022
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604341D8Z / *DIU Prototyping*	Project (Number/Name) 844 / *National Security Innovation Capital*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2021 Cost	FY 2021 Award Date	FY 2022 Cost	FY 2022 Award Date	FY 2023 Base Cost	FY 2023 Base Award Date	FY 2023 OCO Cost	FY 2023 OCO Award Date	FY 2023 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NSIC	C/TBD	Various : Various	-	0.000		9.156	Mar 2022	15.213	Mar 2023	-		15.213	Continuing	Continuing	-
		Subtotal	-	0.000		9.156		15.213		-		15.213	Continuing	Continuing	N/A

	Prior Years	FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	0.000		9.156		15.213		-		15.213	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 844 / *National Security Innovation Capital*

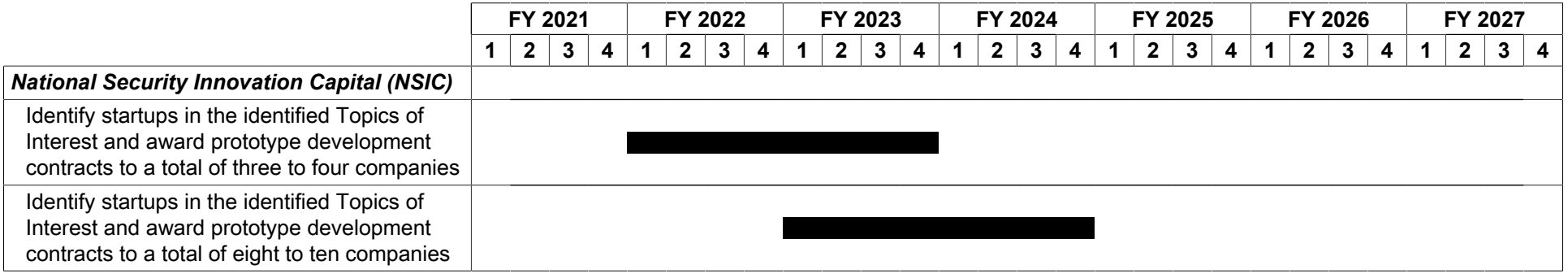

Exhibit R-4A, RDT&E Schedule Details: PB 2023 Office of the Secretary Of Defense		Date: April 2022
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 844 / *National Security Innovation Capital*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
National Security Innovation Capital (NSIC)				
Identify startups in the identified Topics of Interest and award prototype development contracts to a total of three to four companies	1	2022	4	2023
Identify startups in the identified Topics of Interest and award prototype development contracts to a total of eight to ten companies	1	2023	4	2024