Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Office of the Secretary Of Defense	Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
Total Program Element	0.000	22.000	31.255	11.213	-	11.213	-	-	-	-	-	-
843: *DIU Prototyping*	0.000	22.000	31.255	6.213	-	6.213	-	-	-	-	-	-
844: *National Security Innovation Capital*	-	0.000	0.000	5.000	-	5.000	-	-	-	-	-	-

Note

Defense Innovation Unit Experimental (DIUx) was established in April 2015 and transitioned to DIUx 2.0 in May 2016. Defense Innovation Unit Experimental (DIUx) was transferred from OSD (PE 0602230D8Z) to Washington Headquarters Services (WHS) (PE 0603342D8W). In July 2018, DIUx was realigned from WHS to the Office of the Under Secretary of Defense, Research and Engineering (OUSD(R&E)). In August 2018, Secretary Mattis re-designated DIUx as the Defense Innovation Unit (DIU), removing the “x” (experimental) from the organization name to signify the permanence of the program. Effective FY 2020, DIU funding transferred from WHS to OSD, consistent with the organizational realignment under OUSD(R&E) following the disestablishment of the Office of the USD(Acquisition, Technology, & Logistics). This realignment also integrated the Unit into the broader Department of Defense research and engineering community, which provided opportunities to coordinate and de-conflict similar activities with the military departments, Defense Agencies, Department of Defense laboratories, the Defense Advanced Research Project Agency, the Small Business Innovation Research Program, and other entities in alignment with section 244 of the NDAA for FY19.

A. Mission Description and Budget Item Justification

The 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 Department of Defense (DoD), from the Services and components to combatant commands and defense agencies, to rapidly prototype and field advanced commercial solutions that address national security challenges. With offices in Silicon Valley, Boston, Austin, and in the Pentagon, DIU connects its DoD partners with leading technology companies across the country.

The 2018 National Defense Strategy 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, the critical technologies that forge military-technical superiority are increasingly 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 U.S. in critical technology areas. Consistent with the FY 2020 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, to provide credible deterrence, and prevail in conflict.

DIU increases the Department's access to leading-edge commercial technologies and talent, with the ultimate goal of accelerating innovation into the hands of the warfighter. Working across the country, and in collaboration with allied international 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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Office of the Secretary Of Defense	Date: May 2021
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*

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 focus on six technology areas where commercial industry is the lead:
• Advanced Energy and Materials - Leveraging proven advancement in energy and materials technology to enhance capabilities and strengthen resilience across installation and distributed operations.
• Artificial Intelligence (AI)/ Machine Learning (ML) – Applying AI/ML learning to accelerate critical decision making and operation 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.
• 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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	17.000	13.255	12.867	-	12.867
Current President's Budget	22.000	31.255	11.213	-	11.213
Total Adjustments	5.000	18.000	-1.654	-	-1.654
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	18.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• COVID-19	5.000	-	-	-	-
• Program Adjustment	-	-	-1.654	-	-1.654

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2020	FY 2021
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

Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Office of the Secretary Of Defense	Date: May 2021
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 2020	FY 2021
Congressional Add Totals for all Projects	-	18.000

Change Summary Explanation

The FY 2021 increase supports Gig Eagle, a real-time talent market platform, and NSIC to support dual-use hardware startups. Project 844 NSIC was initially requested in the FY 2020 President's Budget submission; however, FY 2021 is the first year the project receives funding.

The FY 2022 funding request was reduced by $2.200 million to account for the availability of prior year execution balances.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense			Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
843: *DIU Prototyping*	0.000	22.000	31.255	6.213	-	6.213	-	-	-	-	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Defense Innovation Unit Experimental (DIUx) was established in April 2015 and transitioned to DIUx 2.0 in May 2016. Defense Innovation Unit Experimental (DIUx) was transferred from OSD (PE 0602230D8Z) to Washington Headquarters Services (WHS) (PE 0603342D8W). In July 2018, DIUx was realigned from WHS to the Office of the Under Secretary of Defense, Research and Engineering (OUSD(R&E)). In August 2018, Secretary Mattis re-designated DIUx as the Defense Innovation Unit (DIU), removing the “x” (experimental) from the organization name to signify the permanence of the program. Effective FY 2020, DIU funding transferred from WHS to OSD, consistent with the organizational realignment under OUSD(R&E) following the disestablishment of the Office of the USD(Acquisition, Technology, & Logistics). This realignment also integrated the Unit into the broader Department of Defense (DoD) research and engineering community, which provided opportunities to coordinate and de-conflict similar activities with the military departments, Defense Agencies, Department of Defense laboratories, the Defense Advanced Research Project Agency, the Small Business Innovation Research Program, and other entities in alignment with section 244 of the NDAA for FY19.

A. Mission Description and Budget Item Justification

The 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 Department of Defense (DoD), from the Services and components to combatant commands and defense agencies, to rapidly prototype and field advanced commercial solutions that address national security challenges. With offices in Silicon Valley, Boston, Austin, and in the Pentagon, DIU connects its DoD partners with leading technology companies across the country.

The 2018 National Defense Strategy 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 DoD, must reform our acquisition policies and approach to sustaining military-technical superiority. Notably, the critical technologies that forge military-technical superiority are increasingly 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 U.S. in critical technology areas. Consistent with the FY 2020 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, to provide credible deterrence, and prevail in conflict.

DIU increases the Department's access to leading-edge commercial technologies and talent, with the ultimate goal of accelerating innovation into the hands of the warfighter. Working across the country, and in collaboration with allied international 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.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*

DIU Prototyping funds facilitate the award of projects that can augment commercial technologies, existing government-owned capabilities, or concepts for defense application.

DIU focus on six technology areas where commercial industry is the lead:
• Advanced Energy and Materials - Leveraging proven advancement in energy and materials technology to enhance capabilities and strengthen resilience across installation and distributed operations.
• Artificial Intelligence (AI)/ Machine Learning (ML) – Applying AI/ML learning to accelerate critical decision making and operation 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.
• 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 2020	FY 2021	FY 2022
Title: Defense Innovation Unit (DIU) Prototyping	22.000	13.255	6.213
Description: DIU will execute projects to leverage commercial sector technology analogous to military applications, thereby increasing dual-use technology adoption throughout DoD. DIU Prototyping funds will facilitate the award of projects that can augment commercial technologies, existing government-owned capabilities, or concepts for defense application. ***FY 2021 Plans:*** In FY 2021, DIU Prototyping funds will facilitate additional follow-on prototype contract awards of projects that can augment commercial technologies, existing government-owned capabilities, or concepts for defense application. ***FY 2022 Plans:*** In FY 2022, DIU Prototyping funds will facilitate additional follow-on prototype contract awards of projects that can augment commercial technologies, existing government-owned capabilities, or concepts for defense application. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The FY 2022 funding request was reduced by $2.200 million to account for the availability of prior year execution balances and accounts for realignment to NSIC and adjustment for inflation rate assumptions.			
Accomplishments/Planned Programs Subtotals	22.000	13.255	6.213

	FY 2020	FY 2021
Congressional Add: Pilot Program on Talent Management: Gig Eagle	-	3.000
FY 2021 Plans: 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		

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*

	FY 2020	FY 2021
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 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 Plans:*** The concept of NSIC was authorized in the 2019 NDAA and has now been funded for the first time. The intent of NSIC is to address the challenges of inadequate, or alternatively adversarial, private investment in dual-use hardware technology startups. A team was created and NSIC stood up the first of week of March 2021. NSIC expects to execute the program by using Other Transaction Authority prototype development contracts with six to eight startups across various stages of development and types of technology. In addition, per Congressional requirement, NSIC will establish advisory relationships with the Defense Industrial Board and Defense Science Board. *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 2022 Office of the Secretary Of Defense			Date: May 2021
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 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
DIU Prototyping	MIPR	Various : Various	-	0.159	Jan 2020	13.458	Jan 2021	6.213		-		6.213	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		31.255		6.213		-		6.213	Continuing	Continuing	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	22.000		31.255		6.213		-		6.213	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*

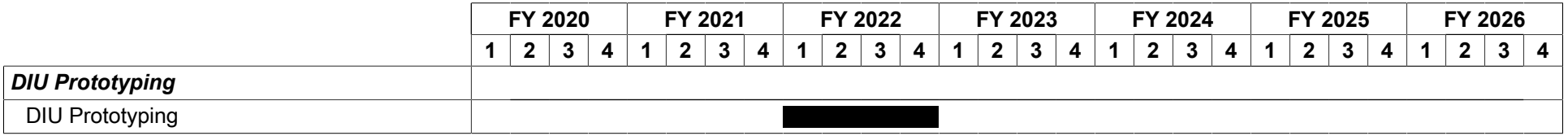

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 843 / *DIU Prototyping*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
DIU Prototyping				
DIU Prototyping	1	2022	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense			Date: May 2021
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 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
844: *National Security Innovation Capital*	-	0.000	0.000	5.000	-	5.000	-	-	-	-	-	-
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 will enable 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, will attract trusted private investment that might otherwise sit on the sidelines. The overall result will be more rapid and robust development of hardware in the U.S., and the expansion of defense industrial base.

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

B. Accomplishments/Planned Programs ($ in Millions)	FY 2020	FY 2021	FY 2022
Title: National Security Innovation Capital (NSIC) ***Description:*** The focus is funding the commercialization and scaling dual-use, hardware-based technologies that are critical to the military These technology areas are currently severely under-served by the private U. S. venture capital industry and often funded by strategic and persistent capital from China. NSIC's funding support will enable companies to further develop their technologies. The resulting reductions in technical risk, along with the signaling of DoD interest in such dual-use companies, will attract trusted private investment that might otherwise sit on the sidelines. The initial areas of interest for NSIC include rare earth elements technologies, batteries and portable power systems, small drones, quantum sensors and devices, and space components and subsystems. ***FY 2022 Plans:*** In FY 2022, NSIC plans to 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. ***FY 2021 to FY 2022 Increase/Decrease Statement:*** The increase reflects a realignment of funding from DIU prototyping to NISC in support of opportunities for dual-use application.	-	-	5.000
Accomplishments/Planned Programs Subtotals	-	-	5.000

Exhibit R-2A, RDT&E Project Justification: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 844 / *National Security Innovation Capital*

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 2022 Office of the Secretary Of Defense			Date: May 2021
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 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NSIC	C/TBD	Various : Various	-	-		0.000		5.000		-		5.000	Continuing	Continuing	-
		Subtotal	-	-		0.000		5.000		-		5.000	Continuing	Continuing	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	-	-		0.000		5.000		-		5.000	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Office of the Secretary Of Defense		Date: May 2021
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604341D8Z / *DIU Prototyping*	**Project (Number/Name)** 844 / *National Security Innovation Capital*

	FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025				FY 2026			
	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
NSIC																												
NSIC					[redacted]																							

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Office of the Secretary Of Defense		Date: May 2021
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**
NSIC				
NSIC	1	2021	4	2021